I. INTRODUCTION AND SUMMARY OF RECOMMENDATIONS

Q. Please state your name and business address.

A. My name is Samuel C. Hadaway. My business address is FINANCO, Inc., 3520 Executive Center Drive, Austin, Texas 78731.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of PacifiCorp ("PacifiCorp" or the "Company").

Q. Please state your educational background and describe your professional training and experience.

A. I have an economics degree from Southern Methodist University and MBA and Ph.D. degrees in Finance from the University of Texas at Austin (UT Austin). I serve as an adjunct professor in the McCombs School of Business at UT Austin. I have taught economics and finance courses and I have conducted research and directed graduate students writing in these areas. I was previously Director of the Economic Research Division at the Public Utility Commission of Texas where I supervised the Commission's finance, economics, and accounting staff and served as the Commission's chief financial witness in electric and telephone rate cases. I have taught courses in various utility conferences on cost of capital, capital structure, utility financial condition, and cost allocation and rate design issues. I have made presentations before the New York Society of Security Analysts, the National Rate of Return Analysts Forum, and various other professional and legislative groups. I have served as a vice president and on the board of directors of the Financial Management Association.

A list of my publications and testimony I have given before various regulatory bodies and in state and federal courts is contained in my resume, which is included as Appendix A.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to estimate PacifiCorp's required rate of return on equity ("ROE").

Q. Please outline and describe the testimony you will present.

A. My testimony is divided into five sections. In Section I, I provide an introduction and overview. In Section II, I compare PacifiCorp's financial and operating risks with those of the reference group of companies demonstrating that there should be an adder to the cost of equity capital for the reference group. In Section III, I review various methods for estimating the cost of equity, including the discounted cash flow ("DCF") model as well as risk premium methods and other approaches often used to estimate the cost of equity capital. In Section IV, I review general capital market costs and conditions and discuss recent developments in the electric utility industry that affect the cost of capital. In Section V, I discuss the details of my cost of equity studies and provide a summary table of my ROE results.

Q. Please summarize your cost of equity studies and the basis for your overall rate of return recommendation.

A. My recommendation is premised upon the fair rate of return principles established by the U.S. Supreme Court in *Federal Power Commission v. Hope Natural Gas Company* ("*Hope*"), 320 US 591, 603 (1944), and *Bluefield Water Works v. Public*

Service Commission ("*Bluefield*"), 262 US 679, 693 (1923). That is to say, the return authorized a utility by a regulatory body, such as the Commission, should be commensurate with returns on investments in other enterprises having corresponding risks. The return should also be sufficient to assure confidence in the financial integrity of the utility so as to maintain its credit and to attract capital so that it is able to properly discharge its public duties. Given these well recognized principles, I have used several methods to determine an appropriate ROE and overall rate of return for PacifiCorp. These methods, and the underlying economic models, are applied to a reference company group of other electric utilities generally similar to PacifiCorp.

Q. Please explain.

A. My ROE estimate is based on alternative versions of the constant growth and multistage growth DCF model and is confirmed by my risk premium analysis and my review of economic conditions and interest rates expected to prevail during the coming year. I apply the DCF model to a reference group of electric utility companies covered by the *Value Line Investment Survey*. Value Line is a widely followed, reputable source of financial data often used in this type of analysis. I use the reference group approach because PacifiCorp's cost of equity cannot be estimated directly from its own market data. Being a wholly-owned subsidiary of ScottishPower, PacifiCorp does not have publicly traded common stock or other independent market data that would be required for the DCF analysis. To be included in my reference group, companies must have at least a single-A bond rating; they must derive at least 70 percent of revenues from regulated utility

sales; and they must have consistent financial records not affected by recent mergers or restructuring, and a consistent dividend record with no dividend cuts within the past two years.

To test my DCF results, I conduct a risk-premium analysis based on ROEs allowed by state regulators relative to the contemporaneous interest rates on utility debt. In this analysis, I also include Standard & Poor's ("S&P") forecasted higher interest rates for the coming year. S&P forecasts that long-term government and corporate interest rates will increase from current levels by 80 to 90 basis points (0.80%-0.90%) by the 1st Quarter of 2007. Under existing market and economic conditions, the combination of DCF and risk premium models tempered by consensus forecasts about future interest rates provides the best approach for estimating PacifiCorp's fair cost of equity capital.

Q. What ROE range is indicated by your DCF analysis?

A. My reference group analysis indicates a DCF ROE range of 10.7 percent to 11.3 percent. I recommend the midpoint of this range at 11.0 percent as the base ROE estimate for the reference company group. As I will explain in more detail later, lower results from the traditional constant growth DCF model fail to meet basic checks of reasonableness and, therefore, are not included in my recommended range.

Q. Please explain.

A. Currently, the traditional constant growth DCF model does not reasonably reflect the market cost of equity because that model, as typically applied, depends on dividend yields and analysts' growth forecasts. As I will explain more fully later

in my testimony, current dividend yields are historically low and analysts' growth forecasts are pessimistic. These near-term circumstances do not reasonably reflect longer-term expectations for higher capital costs. My risk premium analysis, which serves as a check of reasonableness for the DCF results, demonstrates this fact. My basic risk premium analysis, based on allowed returns from other state regulators, indicates that an ROE of 10.74 percent is appropriate, with other risk premium approaches indicating ROEs as high as 11.4 percent.

Since recent historical data have a significant effect on the traditional constant growth DCF format, and because recent data appear to represent historic lows in the economic cycle, those data should not be the primary basis for setting PacifiCorp's allowed rate of return.

Q. What are your overall conclusions from your ROE analysis?

A. Based on the combination of quantitative model results and my review of current economic, market, and electric utility industry conditions, I estimate the reference group companies' fair cost of equity at 11.0 percent. This estimate is consistent with capital market trends and projections and is a reasonable estimate of capital costs that will prevail during the period that the rates from this case are in effect. To reflect the higher utility risk profile of PacifiCorp, I also recommend adding an additional 40 basis points to the reference group ROE. With this increase, PacifiCorp's requested cost of equity is 11.4 percent.

II. PACIFICORP'S RELATIVE FINANCIAL AND OPERATING RISKS

Q. Why should PacifiCorp's allowed ROE be increased by 40 basis points relative to the reference group estimated ROE?

A. The reference group is an appropriate starting point for estimating PacifiCorp's ROE. However, PacifiCorp's cost of equity is higher than the reference group ROE because PacifiCorp faces higher financial and operating risks. In summary, and as I will demonstrate within this testimony, PacifiCorp's construction program and associated financing challenges are substantially greater than those of the reference group companies and PacifiCorp's lack of a fuel and purchased power adjustment clause is virtually unique as compared to the reference group companies. These factors are further compounded by PacifiCorp's complex multi-state cost recovery processes, which adds further to PacifiCorp's risk profile. As a consequence of all these issues, a 40 basis point increment for PacifiCorp relative to the reference company ROE produces a realistic estimate of PacifiCorp's fair cost of equity capital.

Q. What specific evidence demonstrates that PacifiCorp is more risky?

A. A comparison of PacifiCorp's historical earned returns to the returns earned by the reference group companies empirically illustrates the dilemma facing PacifiCorp's investors. On Exhibit UP&L___(SCH-1), pages 1 and 2, I compare PacifiCorp's earnings ratios for the past five years to the same ratios for the reference group companies. This comparison shows that the Company has materially underperformed in every year, both relative to the reference group and relative to

the overall operating company averages (except in its 2002 total capital return and pretax interest coverage ratio).

Q. Have investors commented on PacifiCorp's overall under earnings position?

A. Yes. Several analysts have commented on PacifiCorp's weak performance. Some of their comments are highlighted below:

Lehman Brothers[1]:

> We believe that confidence in the capacity of PPW to deliver has been undermined to such an extent that the share's discount to its closest peers, the sector and our valuation is unlikely to unwind in the foreseeable future. We do not expect SPW to reflect a fuller valuation for PPW until the unit is rehabilitated and on course to deliver an ROE well in excess of 10% (currently sub 9%). Despite the clear improvements in SPW's other businesses – especially the UK division, we do not see the UP&Lift as sufficient to offset the headwinds the company is encountering at PPW.

S&P[2]:

> Most importantly, Scottish Power is in the process of selling PacifiCorp. As a result, PacifiCorp's ratings are on CreditWatch with negative implications, reflecting PacifiCorp's weak credit metrics, which would not support its current CCR were it rated on a standalone basis.

Q. Does PacifiCorp' s current investment cycle exacerbate this issue?

A. Yes. Analysts are concerned about PacifiCorp's ability to recover its required investments in a timely fashion. Some examples of their concerns include:

Merrill Lynch[3]:

> PacifiCorp is in the early stages of a major re-investment cycle (SPW capex forecast £3bn to 2010). Given the way capex is

[1] Lehman Brothers, ScottishPower – PacifiCorp: Assessing the Future, November 19, 2004.
[2] Standard & Poor's, Credit FAQ: PacifiCorp's Rate Case Ruling, October 7, 2005.
[3] Merrill Lynch, Comment – ScottishPower – Hard Labour in the US, November 17, 2004.

> remunerated via periodic rate cases, there is considerable scope for mismatch between capital deployment and revenue recognition, so-called "regulatory lag". This is not new. Increasing capital intensity merely exacerbates the problem.

Citigroup[4]:

> Regulatory lag has been a significant issue for PacifiCorp. The rate setting process over the last decade has required PacifiCorp to file for rate increases after it has already incurred expenditure. Once a general rate case is filed, it can then take six to eight months for a decision. Overall, it can take 18-24 months before incurred capital expenditure can begin to earn a return.

During 2005, Morgan Stanley stated as follows[5]:

> Potential value destruction in the industry, as calculated by low return on investment, is usually the result of regulatory imperatives - e.g., building scrubbers on coal plants is required by federal law but arguably may not add any value at all for a $300 mm investment. Western states, facing high power prices, are frequently putting the burden on the companies, who have little choice but to buy or build power plants, then hope for reasonable treatment that, at best, retains current value.

Morgan Stanley continues:

> In our view we are just entering a heavy investment cycle in which it is prudent for investors to stand aside from the big builders—who in effect may be entering a multi-year period of value erosion.

The details of the Company's capital expenditure program underpinning these comments are discussed more fully in the testimony of Company witnesses Mr. Richard Walje, Mr. Ted Weston, Mr. Mark Tallman, and Mr. Barry Cunningham.

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[4] Citigroup, Equity Research, ScottishPower – How Should We Value PacifiCorp, October 18, 2004.
[5] Morgan Stanley, Electric Utilities – The Great Divide: Creating Vs. Eroding Value, March 8, 2005.

Q. Relative to the ROE reference group, why are PacifiCorp's construction requirements greater than its peers?

A. While a portion of PacifiCorp's construction is for environmental investment and replacement of transmission and distribution infrastructure, which are generic to the industry, the Company also has to invest in the sizeable system-wide resource additions outlined in the 2004 Integrated Resource Plan, which are required to meet load growth and the replacement of competitive wholesale contracts that are about to expire.

On Exhibit UP&L___(SCH-1), page 3, I compare PacifiCorp's capital expenditures over the next six years as a percentage of current net plant to the same statistics for the reference group companies. PacifiCorp's expenditures over the next six years are expected to equal 79.7 percent of net plant. For the average reference group company, capital spending for the next six years is expected to be only about 52.9 percent of current net plant. PacifiCorp's larger construction program increases its financing and regulatory risks, and these increased risks should be reflected in a higher allowed rate of return.

Q. Please explain what you mean by "increases financing and regulatory risks".

A. As already illustrated in the prior analyst comments, investors are acutely aware of the risks a utility faces as it enters, and is in, a build cycle. This would be the situation for a financially healthy utility. It follows that if a utility is under performing, and entering a build cycle, the risk levels are heightened since there is less ability to absorb the cash flow impact of any lag, normalization or disallowance. A combination of Exhibit UP&L___(SCH-1), pages 1 through 3,

highlights both the weak financial performance and the magnitude of the construction program facing the Company. Investors, understanding both these facts and their interrelationships, rightly should anticipate a premium to shield them from the downside financing risks.

Q. What other operational risks should be taken into account when setting an appropriate cost of capital?

A. There are at least two additional areas that should be considered:

- Power cost recovery mechanisms (PCAMs); and
- Regulatory recovery.

Lack of PCAMs Risk

The most frequently noted higher risk in all of PacifiCorp's state regulatory jurisdictions is the general lack of fuel adjustment or purchased power cost recovery mechanisms. In the company's PCAM filing (Docket No. 05-035-102), for the period of 1990 to 2004, company witness Mr. Mark Widmer explained: "…the net power costs exposure varied between a $32 million gain and a $738.5 million loss on a total Company basis, excluding recovery for the energy crisis. In aggregate and including recovery for the energy crisis, losses exceeded gains by $1.1 billion total Company based on Utah authorized net power costs."

In Exhibit UP&L___(SCH-1), page 4, I list the status of fuel and purchased power cost recovery mechanisms for each company in the reference company group. This review shows that only two of the reference group companies have no fuel or power cost recovery mechanisms. Additionally, portions of both of these companies' operations are in the state of Missouri, which

previously did not allow power cost recovery mechanisms but which recently passed legislation that will allow fuel and purchase power cost recovery mechanisms in the future. For PacifiCorp to operate in the present-day volatile market environment without full cost recovery for fuel and purchased power is a very significant risk, which should be recognized directly in the Company's allowed cost of capital.

PacifiCorp, due to the lack of a power cost adjustment mechanism, is generally viewed as having a higher risk profile than its peers. As an example of this sentiment, S&P indicated on September 22, 2004:[6]

> The lack of a power or fuel cost adjustment mechanism in any of the states that PacifiCorp serves, coUP&Le with reliance on a fairly high level of wholesale purchase to meet loads, which creates the potential for authorized rates to be insufficient to meet actual costs.

State Policy Risk

Being served by a multi-state utility provides all of PacifiCorp's customers benefits including being part of a diversified generation portfolio and the associated economies of scale. The rates and level of service that customers currently receive is testament to this fact. However, as the Company embarks on its significant investment program across all its states, it faces continuing risks with respect to full cost recovery.

PacifiCorp faces many philosophical and policy differences across its states including pulverized coal versus clean coal, the need for transmission,

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[6] Standard & Poor's, Research: PacifiCorp, September 22, 2004.

climate change, and build versus buy. With many large investments having to be made prospectively, it is difficult to build a compelling investment case for shareholders in the situation that PacifiCorp faces, i.e., where a one size fits all strategy relies on the good faith of all parties for support. This situation is analogous with the dilemma that some transmission projects that span state boundaries face. Under these circumstances, FERC has openly discussed the need for ROE adders to encourage investment.

Investment analysts remain concerned about the level of return and risk directly related to the Company's multi-state structure given the significant investment program it faces. For example:

Citigroup[7]:

> PacifiCorp operates across six separate states, each with differing economies and energy policies. Where costs or investments have straddled states, there has been disagreement as to which state should fund those costs. As a result, the full amount of capital expenditure incurred has not been reflected in the rate base.

Q. Please summarize your discussion of PacifiCorp's relative financial and operating risks.

A. PacifiCorp's financial and operating risks are higher than those of the reference group. As shown on the various pages of Exhibit UP&L___(SCH-1), PacifiCorp has consistently earned lower rates of return than the reference companies; its construction program as a percentage of net plant is over 50 percent greater than that of the average reference company; and the Company is virtually unique with

[7] Citigroup, Equity Research, ScottishPower – How Should We Value PacifiCorp? October 18, 2004.

respect to its historical lack of a PCAM for fuel and purchased power cost recovery. Additionally, the Company's dependence on multiple state rate recovery issues cause further uncertainty. Considering all of this, to determine PacifiCorp's fair cost of equity capital, I have adjusted the reference group ROE upward by 40 basis points to a rate of 11.4 percent.

III. ESTIMATING THE COST OF EQUITY CAPITAL

Q. What is the purpose of this section of your testimony?

A. The purpose of this section is to present a general definition of the cost of equity and to compare the strengths and weaknesses of several of the most widely used methods for estimating the cost of equity. Estimating the cost of equity is fundamentally a matter of informed judgment. The various models provide a concrete link to actual capital market data and assist with defining the various relationships that underlie the ROE estimation process.

Q. Please define the term "cost of equity capital" and provide an overview of the cost estimation process.

A. The cost of equity capital is the profit, or rate of return, that equity investors expect to receive. In concept it is no different than the cost of debt or the cost of preferred stock. The cost of equity is the rate of return that common stockholders expect, just as interest on bonds and dividends on preferred stock are the returns that investors in those securities expect. Equity investors expect a return on their capital commensurate with the risks they take and consistent with returns that might be available from other similar investments. Unlike returns from debt and preferred stocks, however, the equity return is not directly observable in advance

and, therefore, it must be estimated or inferred from capital market data and trading activity.

An example helps to illustrate the cost of equity concept. Assume that an investor buys a share of common stock for $20 per share. If the stock's expected dividend is $1.00, the expected dividend yield is 5.00 percent ($1.00 / $20 = 5.00 percent). If the stock price is also expected to increase to $21.25 after one year, this one dollar and twenty-five cent expected gain adds an additional 6.25 percent to the expected total rate of return ($1.25 / $20 = 6.25 percent). Therefore, buying the stock at $20 per share, the investor expects a total return of 11.25 percent: 5.00 percent dividend yield, plus 6.25 percent price appreciation. In this example, the total expected rate of return at 11.25 percent is the appropriate measure of the cost of equity capital, because it is this rate of return that caused the investor to commit the $20 of equity capital in the first place. If the stock were riskier, or if expected returns from other investments were higher, investors would have required a higher rate of return from the stock, which would have resulted in a lower initial purchase price in market trading.

Each day market rates of return and prices change to reflect new investor expectations and requirements. For example, when interest rates on bonds and savings accounts rise, utility stock prices usually fall. This is true, at least in part, because higher interest rates on these alternative investments make utility stocks relatively less attractive, which causes utility stock prices to decline in market trading. This competitive market adjustment process is quick and continuous, so that market prices generally reflect investor expectations and the relative

attractiveness of one investment versus another. In this context, to estimate the cost of equity one must apply informed judgment about the relative risk of the company in question and knowledge about the risk and expected rate of return characteristics of other available investments as well.

Q. How does the market account for risk differences among the various investments?

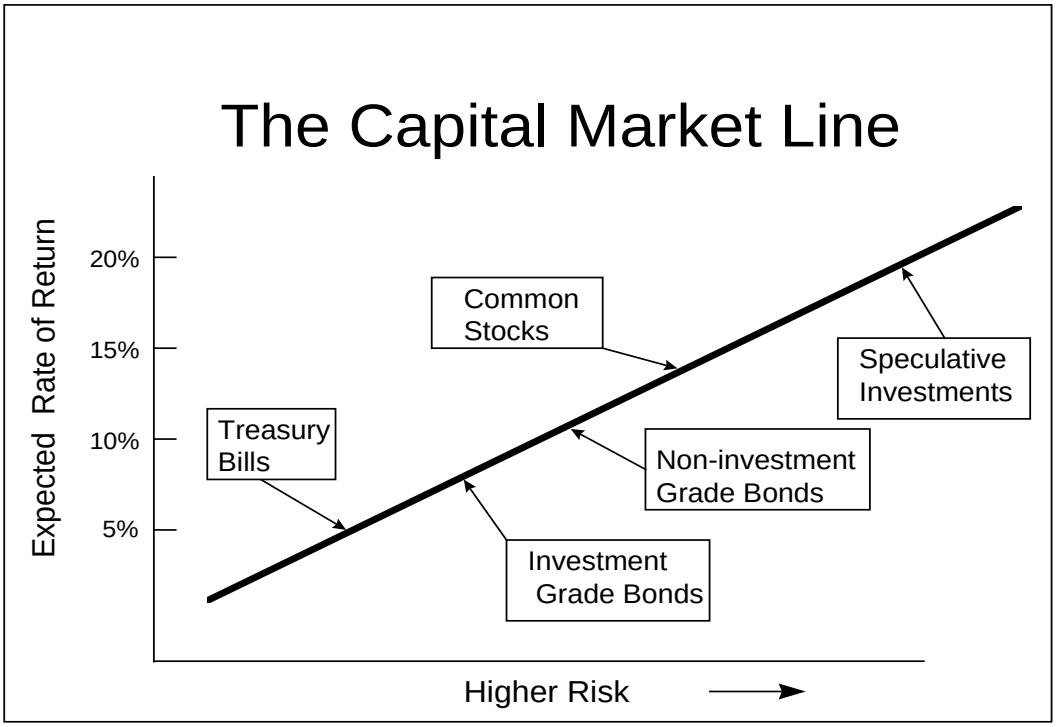
A. Risk-return tradeoffs among capital market investments have been the subject of extensive financial research. Literally dozens of textbooks and hundreds of academic articles have addressed the issue. Generally, such research confirms the common sense conclusion that investors will take additional risks only if they expect to receive a higher rate of return. Empirical tests consistently show that returns from low risk securities, such as U.S. Treasury bills, are the lowest; that returns from longer-term Treasury bonds and corporate bonds are increasingly higher as risks increase; and generally, returns from common stocks and other more risky investments are even higher. These observations provide a sound theoretical foundation for both the DCF and risk premium methods for estimating the cost of equity capital. These methods attempt to capture the well founded risk-return principle and explicitly measure investors' rate of return requirements.

Q. Can you illustrate the capital market risk-return principle that you just described?

A. Yes. The following graph depicts the risk-return relationship that has become widely known as the Capital Market Line (CML). The CML offers a graphical representation of the capital market risk-return principle. The graph is not meant

to illustrate the actual expected rate of return for any particular investment, but merely to illustrate in a general way the risk-return relationship.

Risk-Return Tradeoffs



As a continuum, the CML can be viewed as an available opportunity set for investors. Those investors with low risk tolerance or investment objectives that mandate a low risk profile should invest in assets depicted in the lower left-hand portion of the graph. Investments in this area, such as Treasury bills and short-maturity, high quality corporate commercial paper, offer a high degree of investor certainty. In nominal terms (before considering the potential effects of inflation), such assets are virtually risk-free.

Investment risks increase as one moves up and to the right along the CML. A higher degree of uncertainty exists about the level of investment value at any point in time and about the level of income payments that may be received. Among these investments, long-term bonds and preferred stocks, which offer priority claims to assets and income payments, are relatively low risk, but they are not risk-free. The market value of long-term bonds, even those issued by the U.S. Treasury, often fluctuates widely when government policies or other factors cause interest rates to change.

Farther up the CML continuum, common stocks are exposed to even more risk, depending on the nature of the underlying business and the financial strength of the issuing corporation. Common stock risks include market-wide factors, such as general changes in capital costs, as well as industry and company specific elements that may add further to the volatility of a given company's performance. As I will illustrate in my risk premium analysis, common stocks typically are more volatile (have higher risk) than high quality bond investments and, therefore, they reside above and to the right of bonds on the CML graph. Other more speculative investments, such as stock options and commodity futures contracts, offer even higher risks (and higher potential returns). The CML's depiction of the risk-return tradeoffs available in the capital markets provides a useful perspective for estimating investors' required rates of return.

Q. How is the fair rate of return in the regulatory process related to the estimated cost of equity capital?

A. The regulatory process is guided by fair rate of return principles established in two U.S. Supreme Court cases, *Bluefield* and *Hope*:

> 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 it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures.[8]

> From the investor or company point of view, it is important that there be enough revenue not only for operating expenses, but also for the capital costs of the business. These include service on the debt and dividends on the stock. By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital.[9]

Based on these principles, the fair rate of return should closely parallel investor opportunity costs as discussed above. If a utility earns its market cost of equity, neither its stockholders nor its customers should be disadvantaged.

Q. What specific methods and capital market data are used to evaluate the cost of equity?

A. Techniques for estimating the cost of equity normally fall into three groups: comparable earnings methods, risk premium methods, and DCF methods.

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[8] *Bluefield*, 262 U.S. at 692-693.
[9] *Hope*, 320 U.S. at 603.

Q. Please describe the first set of estimation techniques, the comparable earnings methods.

A. The comparable earnings methods have evolved over time. The original comparable earnings methods were based on book accounting returns. This approach developed ROE estimates by reviewing accounting returns for unregulated companies thought to have risks similar to those of the regulated company in question. These methods have generally been rejected because they assume that the unregulated group is earning its actual cost of capital, and that its equity book value is the same as its market value. In most situations these assumptions are not valid, and, therefore, accounting-based methods do not generally provide reliable cost of equity estimates.

More recent comparable earnings methods have been based on historical stock market returns rather than book accounting returns. While this approach has some merit, it too has been criticized because there can be no assurance that historical returns actually reflect current or future market requirements. Also, in practical application, earned market returns tend to fluctuate widely from year to year. For these reasons, a current cost of equity estimate (based on the DCF model or a risk premium analysis) is usually required.

Q. Please describe the second set of estimation techniques, the risk premium methods.

A The risk premium methods begin with currently observable market returns, such as yields on government or corporate bonds, and add an increment to account for the additional equity risk. The capital asset pricing model (CAPM) and arbitrage

pricing theory (APT) model are more sophisticated risk premium approaches. The CAPM and APT methods estimate the cost of equity directly by combining the "risk-free" government bond rate with explicit risk measures to determine the risk premium required by the market. Although these methods are widely used in academic cost of capital research, their additional data requirements and their potentially questionable underlying assumptions have detracted from their use in most regulatory jurisdictions. The basic risk premium methods provide a useful parallel approach with the DCF model and assure consistency with other capital market data in the cost of equity cost estimation process.

Q. Please describe the third set of estimation techniques, based on the DCF model.

A. The DCF model is the most widely used regulatory cost of equity estimation method. Like the risk premium approach, the DCF model has a sound basis in theory, and many argue that it has the additional advantage of simplicity. I will describe the DCF model in detail below, but in essence its estimate of ROE is simply the sum of the expected dividend yield and the expected long-term dividend (or price) growth rate. While dividend yields are easy to obtain, estimating long-term growth is more difficult. Because the constant growth DCF model also requires very long-term growth estimates (technically to infinity), some argue that its application is too speculative to provide reliable results, resulting in the preference for the multistage growth DCF analysis.

Q. Of the three estimation methods, which do you believe provides the most reliable results?

A. From my experience, a combination of discounted cash flow and risk premium methods provides the most reliable approach. While the caveat about estimating long-term growth must be observed, the DCF model's other inputs are readily obtainable, and the model's results typically are consistent with capital market behavior. The risk premium methods provide a good parallel approach to the DCF model and further ensure that current market conditions are accurately reflected in the cost of equity estimate.

Q. Please explain the DCF model.

A. The DCF model is predicated on the concept that stock prices represent the present value or discounted value of all future dividends that investors expect to receive. In the most general form, the DCF model is expressed in the following formula:

$$P_0 = D_1/(1+k) + D_2/(1+k)^2 + ... + D_\infty/(1+k)^\infty \qquad (1)$$

where P_0 is today's stock price; D_1, D_2, etc. are all future dividends and k is the discount rate, or the investor's required rate of return on equity. Equation (1) is a routine present value calculation based on the assumption that the stock's price is the present value of all dividends expected to be paid in the future.

Under the additional assumption that dividends are expected to grow at a constant rate "g" and that k is strictly greater than g, equation (1) can be solved for k and rearranged into the simple form:

$$k = D_1/P_0 + g \qquad (2)$$

Equation (2) is the familiar constant growth DCF model for cost of equity estimation, where D_1/P_0 is the expected dividend yield and g is the long-term expected dividend growth rate.

Q. Are there circumstances where the constant growth model may not give reliable results?

A. Yes. Under circumstances when growth rates are expected to fluctuate or when future growth rates are highly uncertain, the constant growth model may not give reliable results. Although the DCF model itself is still valid [equation (1) is mathematically correct], under such circumstances the simplified form of the model must be modified to capture market expectations accurately.

Recent events and current market conditions in the electric utility industry, as discussed later, appear to challenge the constant growth assumption of the simplified constant growth DCF model. Since the mid-1980s, dividend growth expectations for many electric utilities have fluctuated widely. In fact, over one-third of the electric utilities in the U.S. have reduced or eliminated their common dividends over this time period. Some of these companies have reestablished their dividends, producing exceptionally high growth rates. Under these circumstances, long-term growth rate estimates may be highly uncertain, and estimating a reliable "constant" growth rate for many companies is often difficult.

Q. Can the DCF model be applied when the constant growth assumption is violated?

A. Yes. When growth expectations are uncertain, the more general version of the model represented in equation (1) should be solved explicitly over a finite

"transition" period while uncertainty prevails. The constant growth version of the model can then be applied after the transition period, under the assumption that more stable conditions will prevail in the future. There are two alternatives for dealing with the nonconstant growth transition period.

Under the "terminal price" nonconstant growth approach, equation (1) is written in a slightly different form:

$$P_0 = D_1/(1+k) + D_2/(1+k)^2 + ... + P_T/(1+k)^T \qquad (3)$$

where the variables are the same as in equation (1) except that P_T is the estimated stock price at the end of the transition period T. Under the assumption that normal growth resumes after the transition period, the price P_T is then expected to be based on constant growth assumptions. With the terminal price approach, the estimated cost of equity, k, is just the rate of return that investors would expect to earn if they bought the stock at today's market price, held it and received dividends through the transition period (until period T), and then sold it for price P_T. In this approach, the analyst's task is to estimate the rate of return that investors expect to receive given the current level of market prices they are willing to pay.

Q. What is the other alternative for dealing with the nonconstant growth transition period?

A. Under the "multistage" nonconstant growth approach, equation (1) is simply expanded to incorporate two or more growth rate periods, with the assumption that a permanent constant growth rate can be estimated for some point in the

future:

$$P_0 = D_0(1+g_1)/(1+k) + ... + D_0(1+g_2)^n/(1+k)^n + ... + D_0(1+g_T)^{(T+1)}/(k-g_T) \quad (4)$$

where the variables are the same as in equation (1), but g_1 represents the growth rate for the first period, g_2 for a second period, and g_T for the period from year T (the end of the transition period) to infinity. The first two growth rates are simply estimates for fluctuating growth over "n" years (typically 5 or 10 years) and g_T is a constant growth rate assumed to prevail forever after year T. The difficult task for analysts in the multistage approach is determining the various growth rates for each period.

Although less convenient for exposition purposes, the nonconstant growth models are based on the same valid capital market assumptions as the constant growth version. The nonconstant growth approach simply requires more explicit data inputs and more work to solve for the discount rate, k. Fortunately, the required data are available from investment and economic forecasting services, and computer algorithms can easily produce the required solutions. Both constant and nonconstant growth DCF analyses are presented in the following section.

Q. Please explain the risk premium methodology.

A. Risk premium methods are based on the assumption that equity securities are riskier than debt and, therefore, that equity investors require a higher rate of return. This basic premise is well supported by legal and economic distinctions between debt and equity securities, and it is widely accepted as a fundamental capital market principle. For example, debt holders' claims to the earnings and

assets of the borrower have priority over all claims of equity investors. The contractual interest on mortgage debt must be paid in full before any dividends can be paid to shareholders, and secured mortgage claims must be fully satisfied before any assets can be distributed to shareholders in bankruptcy. Also, the guaranteed, fixed-income nature of interest payments makes year-to-year returns from bonds typically more stable than capital gains and dividend payments on stocks. All these factors demonstrate the more risky position of stockholders and support the equity risk premium concept.

Q. Are risk premium estimates of the cost of equity consistent with other current capital market costs?

A. Yes. The risk premium approach is especially useful because it is founded on current market interest rates, which are directly observable. This feature assures that risk premium estimates of the cost of equity begin with a sound basis, which is tied directly to current capital market costs.

Q. Is there similar consensus about how risk premium data should be employed?

A. No. In regulatory practice, there is often considerable debate about how risk premium data should be interpreted and used. Since the analyst's basic task is to gauge investors' required returns on long-term investments, some argue that the estimated equity spread should be based on the longest possible time period. Others argue that market relationships between debt and equity from several decades ago are irrelevant and that only recent debt-equity observations should be given any weight in estimating investor requirements. There is no consensus on

this issue. Since analysts cannot observe or measure investors' expectations directly, it is not possible to know exactly how such expectations are formed or, therefore, to know exactly what time period is most appropriate in a risk premium analysis.

The important point is to answer the following question: "What rate of return should equity investors reasonably expect relative to returns that are currently available from long-term bonds?" The risk premium studies and analyses I discuss later address this question. My risk premium recommendation is based on an intermediate position that avoids some of the problems and concerns that have been expressed about both very long and very short periods of analysis with the risk premium model.

Q. Please summarize your discussion of cost of equity estimation techniques.

A. Estimating the cost of equity is one of the most controversial issues in utility ratemaking. Because actual investor requirements are not directly observable, several methods have been developed to assist in the estimation process. The comparable earnings method is the oldest but perhaps least reliable. Its use of accounting rates of return, or even historical market returns, may or may not reflect current investor requirements. Differences in accounting methods among companies and issues of comparability also detract from this approach.

The DCF and risk premium methods have become the most widely accepted in regulatory practice. A combination of the DCF model and a review of risk premium data provides the most reliable cost of equity estimate. While the DCF model does require judgment about future growth rates, the dividend yield is

straightforward, and the model's results are generally consistent with actual capital market behavior. For these reasons, I will rely on a combination of the DCF model and a risk premium analysis in the cost of equity studies that follow.

IV. FUNDAMENTAL FACTORS THAT AFFECT THE COST OF EQUITY

Q. What is the purpose of this section of your testimony?

A. In this section, I review recent capital market conditions and industry and company-specific factors that should be reflected in a cost of capital estimate**.**

Q. What has been the recent experience in the U.S. capital markets?

A. Exhibit UP&L___(SCH-2), page 1, provides a review of annual interest rates and rates of inflation in the U.S. economy over the past ten years. During that time period, inflation and capital market costs have declined and, generally, have been lower than rates that prevailed in the previous decade. Inflation, as measured by the Consumer Price Index, has remained at historically low levels not seen consistently since the early 1960s. Until the first quarter of 2004, the uneven pace of economic recovery kept consumer price increases in check and interest rates declined to the lowest levels in four decades. With improving economic conditions, since June of 2004, the Federal Reserve System has increased the Federal Funds interest rate thirteen times, raising it from 1 percent to a present level of 4.25 percent. Although recent long-term interest rates are only slightly above their historical lows, estimates for the next 12 months are for continued economic growth and further substantial interest rate increases.

Exhibit UP&L___(SCH-2), page 2, provides a summary of Moody's Average Utility and Single-A Utility Bond Yields. For the most recent three

months through December 2005, Moody's Average Utility Rate was 5.86 percent and the single-A rate was 5.86 percent.

Exhibit UP&L___(SCH-2), page 3, provides S&P's *Trends & Projections* for January 19, 2006. The forecast data show clear expectations for continuing economic growth, with growth in *real* Gross Domestic Product (GDP) for 2006 estimated at 3.5 percent and *nominal* GDP growth (real GDP plus inflation) at 6.1 percent. This projected real GDP growth rate of 3.5 percent compares to rates of less than 2 percent in 2001, 2.4 percent for 2002, and 3 percent for 2003. Consistent with sound economic conditions, S&P also forecasts that the unemployment rate will drop to 4.8 percent and that interest rates will rise significantly from current levels. The 10-year Treasury Note is projected to increase from its current level of about 4.4 percent to 5.2 percent by the 1st quarter of 2007. Long-term Treasury Bonds are projected to increase from current levels of about 4.6 percent to 5.3 percent, and Corporate Bonds are projected to increase from current levels of about 5.5 percent to 6.3 percent. These increasing interest rate trends offer important perspective for judging the cost of capital in the present case.

Q. How have utility stocks performed during the past several years?

A. The Dow Jones Utility Average has fluctuated widely. After reaching a level of 310 in April 2002, it dropped to below 180 by October 2002. Since 2002, the Average has continued to fluctuate. Its current level over 400 is near a record high, having increased from a level of 280 a little more than a year ago. Utility stock prices generally have fluctuated much more widely in recent years than was

previously experienced. Rising prices for natural gas and other unexpected disruptions of supply caused by extreme weather and two major hurricanes along the Gulf Coast have created further unsettling conditions. These factors and continuing concerns for the more competitive market environment for all utility services will likely create further uncertainties and market volatility for utility shares. In this environment, investors' return expectations and requirements for providing capital to the utility industry remain high relative to the longer-term traditional view of the utility industry.

Q. What is the industry's current fundamental position?

A. Although many electric utilities are attempting to return to their core businesses and hope to see more stable financial results over the next several years, expectations for utility stocks are negative based on projections for higher interest rates and the present stock price levels for some utility companies. In a recent edition covering electric utilities, Value Line reflected its concerns:

> **Investment Advice**
>
> Many of the utility stocks in this issue are trading at or near their 52-week highs. But if Value Line's projection of rising interest rates is on target, share prices of these equities may decline. Too, the industry's Timeliness rank remains near the bottom of all industries we follow. At this juncture, more attractive investments are available elsewhere.[10]

More recently, in a feature story on utilities' investment potential, the Wall Street Journal echoed Value Line's prior assessment:

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[10] Value Line Investment Survey, April 1, 2005, p. 695.

> **Sector Has Gleamed Recently, But Worries About Energy Prices and Interest Rates Spur Concern**
>
> In the past several trading sessions, however, the sector has slipped amid worries that inflation and interest rates are headed up, that the economy will slow and that energy prices have peaked. … Historically, interest-rate increases have pushed utilities stocks down because such reliable dividend payers long have been used as a bond substitute by income-seeking investors. Rising rates make newly issued bonds with higher yields more attractive than existing income-producing stocks and bonds with lower payouts.[11]

Expectations for rising interest rates also make it more difficult to estimate the fair, on-going cost of capital. Analysts' near-term growth estimates for utilities reflect the issues described by Value Line and the Wall Street Journal and current three-to-five-year projections are extremely low. As I will discuss in more detail later, this feature raises significant questions about using analysts' currently low growth projections as proxies for long-term growth in the DCF model.

Over the past several years, the greatest consideration for utility investors has been the industry's transition to competition. With the passage of the National Energy Policy Act (NEPA) in 1992 and the Federal Energy Regulatory Commission's (FERC) Order 888 in 1996, the stage was set for vastly increased competition in the electric utility industry. NEPA's mandate for open access to the transmission grid and FERC's implementation through Order 888 effectively opened the market for wholesale electricity to competition. Previously protected utility service territory and lack of transmission access in some parts of the country had limited the availability of competitive bulk power prices. NEPA and

[11] Wall Street Journal, October 10, 2005, page C1.

Order 888 have essentially eliminated such constraints for incremental power needs.

In addition to wholesale issues at the federal level, many states implemented retail access and have opened their retail markets to competition. Prior to the Western energy crisis, investors' concerns had focused principally on appropriate transition mechanisms and the recovery of stranded costs. More recently, however, provisions for dealing with power cost adjustments have become a larger concern. The Western energy crisis refocused market concerns and contributed significantly to increased market risk perceptions for companies without power cost recovery provisions. As expected, the opening of previously protected utility markets to competition, and the uncertainty created by the removal of regulatory protection, have raised the level of uncertainty about investment returns across the entire industry.

Q. Is PacifiCorp affected by these same market uncertainties and increasing utility capital costs?

A. Yes. To some extent all electric utilities are being affected by the industry's transition to competition. Although only a few customers have opted away from PacifiCorp, this element creates further potential risk as it complicates load planning activities. PacifiCorp power costs and other operating activities have been significantly affected by transition and restructuring events around the country. In fact, the uncertainty associated with the changes that are transforming the utility industry as a whole, as viewed from the perspective of the investor, remains a factor in assessing any utility's required ROE, including the ROE for

PacifiCorp operations in Utah. For PacifiCorp specifically, its large construction program, its historical lack of a fuel adjustment and purchased power cost recovery clause, its dependence on purchased power resources and its multi-state regulatory policy issues all increase the Company's risk profile.

Q. How do capital market concerns and financial risk perceptions affect the cost of equity capital?

A. As I discussed previously, equity investors respond to changing assessments of risk and financial prospects by changing the price they are willing to pay for a given security. When the risk perceptions increase or financial prospects decline, investors refuse to pay the previously existing market price for a company's securities and market supply and demand forces then establish a new lower price. The lower market price typically translates into a higher cost of capital through a higher dividend yield requirement as well as the potential for increased capital gains if prospects improve. In addition to market losses for prior shareholders, the higher cost of capital is transmitted directly to the company by the need to issue more shares to raise any given amount of capital for future investment. The additional shares also impose additional future dividend requirements and reduce future earnings per share growth prospects.

Q. How have regulatory commissions responded to these changing market and industry conditions?

A. On balance, allowed rates of return have changed less than interest rates over the past five years. The following table summarizes electric utility ROEs allowed by state regulatory commissions since 2001:

Authorized Electric Utility Equity Returns[12]

	2001	2002	2003	2004	2005
1st Quarter	11.38%	10.87%	11.47%	11.00%	10.51%
2nd Quarter	10.88%	11.41%	11.16%	10.54%	10.05%
3rd Quarter	10.78%	11.06%	9.95%	10.33%	10.84%
4th Quarter	11.50%	11.20%	11.09%	10.91%	10.75%
Full Year	11.09%	11.16%	10.97%	10.75%	10.54%
Average Utility Debt Cost	7.72%	7.53%	6.61%	6.20%	5.68%
Indicated Risk Premium	3.37%	3.63%	4.36%	4.55%	4.86%

During 2005, interest rates declined to their lowest levels since the 1960's. Allowed equity returns followed the interest rate decline but declined by a smaller amount. Although utility interest rates have fluctuated by about 200 basis points over the past five years, average allowed ROEs generally have fluctuated less. Equity risk premiums (the difference between allowed equity returns and utility interest rates) have ranged from 3.37 percent to 4.86 percent. With recent allowed equity risk premiums, the indicated cost of equity based on projected single-A utility debt costs is 11.2 percent (6.3% projected single-A interest rate + 4.86% risk premium = 11.16%).

V. COST OF EQUITY CAPITAL FOR PACIFICORP

Q. What is the purpose of this section of your testimony?

A. The purpose of this section is to present my quantitative studies of the cost of equity capital for PacifiCorp and to discuss the details and results of my analysis.

[12] *Regulatory Focus*, Regulatory Research Associates, Inc., Major Rate Case Decisions, January 2006.

Q. How are your studies organized?

A. In the first part of my analysis, I apply three versions of the DCF model to the 13-company reference group of electric utilities based on the selection criteria discussed previously. In the second part of my analysis, I apply various risk premium models and review projected economic conditions and projected capital costs for the coming year.

My DCF analysis is based on three versions of the DCF model. In the first version of the DCF model, I use the constant growth format with long-term expected growth estimated from an equally weighted, four-part average of (1) Value Line and (2) Zacks earnings per share growth projections for the coming three to five years, (3) a sustainable growth ("b" times "r") estimate based on Value Line's projected retention rates and earned rates of return for the next three to five years, and (4) a long-term estimate of nominal growth in GDP. In the second version of the DCF model, for the estimated growth rate, I use only the long-term estimated GDP growth rate. In the third version of the DCF model, I use a two-stage growth approach, with stage one based on Value Line's three-to-five-year dividend projections and stage two based on long-term projected growth in GDP. The dividend yields in all three of the annual models are from Value Line's projections of dividends for the coming year and stock prices are from the three-month average for the months that correspond to the Value Line editions from which the underlying financial data are taken.

Q. Why do you believe the long-term GDP growth rate should be used to estimate long-term growth expectations in the DCF model?

A. Growth in nominal GDP (real GDP plus inflation) is the most general measure of economic growth in the U.S. economy. For long time periods, such as those used in the Ibbotson Associates rate of return data, GDP growth has averaged between 6 percent and 8 percent per year. From this observation, Professors Brigham, Gapenski, and Ehrhardt offer the following observation concerning the appropriate long-term growth rate in the DCF Model:

> Expected growth rates vary from company to company, but dividend growth on average is expected to continue in the foreseeable future at about the same rate as that of the nominal gross domestic product (real GDP plus inflation). On this basis, one might expect the dividend of an average, or "normal," company to grow at a rate of 6 to 8 percent a year.[13]

Other academic research on corporate growth rates offers similar conclusions about GDP growth as well as concerns about the long-term adequacy of analysts' forecasts:

> Our estimated median growth rate is reasonable when compared to the overall economy's growth rate. On average over the sample period, the median growth rate over 10 years for income before extraordinary items is about 10 percent for all firms. ... After deducting the dividend yield (the median yield is 2.5 percent per year), as well as inflation (which averages 4 percent per year over the sample period), the growth in real income before extraordinary items is roughly 3.5 percent per year. This is consistent with the historical growth rate in real gross domestic product, which has averaged about 3.4 percent per year over the period 1950-1998.[14]

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[13] Brigham, Gapenski, and Ehrhardt, *Financial Management*, 9th Ed., p. 335.

[14] Louis K. C. Chan, Jason Karceski, and Josef Lakonishok, "The Level and Persistence of Growth Rates," The Journal of Finance, April 2003, p. 649.

> IBES long-term growth estimates are associated with realized growth in the immediate short-term future. Over long horizons, however, there is little forecastablility in earnings, and analysts' estimates tend to be overly optimistic. … On the whole, the absence of predictability in growth fits in with the economic intuition that competitive pressures ultimately work to correct excessively high or excessively low profitability growth.[15]

> These findings support the notion that long-term growth expectations are more closely predicted by broader measures of economic growth than by near-term analysts' estimates. Especially for the very long-term growth rate requirements of the DCF model, the growth in nominal GDP should be considered a an important input.

Q. How have analysts' three-to-five year growth projections changed over the past five years?

A. Current analysts' growth projections are much lower than they were in 2001. For the comparable electric utilities as shown in Exhibit UP&L___(SCH-3), during 2001, Value Line's projected three-to-five year earnings growth rate was 6.9 percent per year. In the recent 2005 Value Line editions covering electric utilities, the average projected earnings growth rate is only 4.4 percent, a drop of 2.5 percentage points relative to five years earlier. The "b times r" sustainable growth rate based on Value Line's projected retention rates and earned ROEs shows a similar decline. During 2001, for the comparable electric group the average "b times r" growth rate was 5.1 percent per year. Currently, the "b times r" growth rate from the three most recent Value Line editions is only 3.3 percent, a drop of 1.8 percentage points. This comparison further illustrates that analysts' growth

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[15] Ibid, p. 683.

rate projections are more volatile than one would expect for perpetual growth rate expectations and that current projections are very low as compared to analysts' projections used just five years ago. These results strongly support using more general long-term economic growth rates, such as GDP, in the DCF model.

Q. How did you estimate the expected long-run GDP growth rate?

A. I developed my long-term GDP growth forecast from nominal GDP data contained in the St. Louis Federal Reserve Bank data base. That data for the period 1947 through 2004 is summarized in my Exhibit UP&L___(SCH-4). As shown at the bottom of that schedule, the overall average for the period was 7.1 percent. The data also show, however, that in the more recent years since 1980, lower inflation has resulted in lower overall GDP growth. For this reason I gave more weight to the more recent years in my GDP forecast. This approach is consistent with the concept that more recent data should have a greater effect on expectations and with generally lower near- and intermediate-term growth rate forecasts that presently exist. Based on this approach, my overall forecast for long-term GDP growth is 6.6 percent.

Q. Please summarize the results of your electric utility DCF analyses.

A. The DCF results for my comparable company group are presented in Exhibit UP&L___(SCH-5**)**. As shown in the first column of page 1 of that schedule, the traditional constant growth model indicates an ROE range of only 9.3 percent to 9.5 percent. Because this result falls over 100 basis points or more below my risk premium checks of reasonableness, it is excluded from my final DCF range. In the second column of page 1, I recalculate the constant growth results with the

growth rate based on long-term forecasted growth in GDP. With the higher GDP growth rate, the constant growth model indicates an ROE range of 11.2 percent to 11.3 percent. Finally, in the third column of page 1, I present the results from the multistage DCF model. The multistage model indicates an ROE range of 10.7 percent to 10.8 percent. The electric utility results from the annual DCF model indicate a reasonable ROE range of 10.7 percent to 11.3 percent, with a midpoint estimate of 11.0 percent for the reference company group.

Q. What are the results of your risk premium studies?

A. The details and results of my risk premium studies are shown in my Exhibit UP&L___(SCH-6). These studies and other risk premium data indicate an ROE range of 10.74 percent to 11.43 percent.

Q. How are your risk premium studies structured?

A. My risk premium studies are divided into two parts. First, I compare electric utility authorized ROEs for the period 1980 through 2005 to contemporaneous long-term utility interest rates. The differences between the average authorized ROEs and the average interest rate for the year is the indicated equity risk premium. I then add the indicated equity risk premium to the forecasted single-A utility bond interest rate to estimate ROE.[16] Because there is a strong inverse

[16]The forecasted single-A utility bond rate (6.3%) is equal to S&P's projected long-term Treasury rate (5.3%) from Schedule Exhibit UP&L__(SCH-2), page 3, plus a current spread of 100 basis points for Moody's single-A utility bond rate over Treasuries. This is a very conservative estimate of the single-A rate relative to Treasuries because recent spreads have been at historically low levels. For example, for the most recent five years since 2001, the average annual single-A spread over long-term Treasuries has ranged between 101 basis points and 227 basis points.

relationship between risk premiums and interest rates (when interest rates are high, risk premiums are low and vice versa), further analysis is required to estimate the current risk premium level.

The inverse relationship between risk premiums and interest rate levels is well documented in numerous, well-respected academic studies. These studies typically use regression analysis or other statistical methods to predict or measure the risk premium relationship under varying interest rate conditions. On page 2 of Exhibit UP&L___(SCH-6), I provide regression analyses of the allowed annual equity risk premiums relative to interest rate levels. The negative and statistically significant regression coefficients confirm the inverse relationship between risk premiums and interest rates. This means that when interest rates rise by one percentage point, the cost of equity increases, but by a smaller amount. Similarly, when interest rates decline by one percentage point, the cost of equity declines by less than one percentage point. I use this negative interest rate change coefficient in conjunction with current interest rates to establish the appropriate current equity risk premium.

Q. How do the results of your risk premium study compare to levels found in other published risk premium studies?

A. Based on my risk premium studies, I am conservatively recommending a lower risk premium than is often found in other published risk premium studies. For example, the most widely followed risk premium data are provided in studies published annually by Ibbotson Associates. (Ibbotson Associates, Stocks, Bonds, Bills and Inflation 2005 Yearbook.) These data, for the period 1926-2004,

indicate an arithmetic mean risk premium of 6.2 percent for common stocks versus long-term corporate bonds. Under the assumption of geometric mean compounding, Ibbotson's risk premium for common stocks versus corporate bonds is 4.5 percent. Ibbotson argues extensively for the arithmetic mean approach as the appropriate basis for estimating the cost of equity. Based on the more conservative geometric mean risk premium, Ibbotson's data indicate a cost of equity of 10.8 percent (6.3% forecasted debt cost + 4.5 % risk premium = 10.8%). Based on the arithmetic risk premium, Ibbotson's data indicate a cost of equity of 12.5 percent (6.3% forecasted debt cost + 6.2% risk premium = 12.5%).

The Harris and Marston (H&M) study noted above also provides specific equity risk premium estimates. Using analysts' growth estimates to estimate equity returns, H&M found equity risk premiums of 6.47 percent relative to U.S. Government bonds and 5.13 percent relative to yields on corporate debt. H&M's equity risk premium relative to corporate debt also indicates a current cost of equity of 11.4 percent (6.3% debt cost + 5.13% risk premium = 11.43%). Although the Ibbotson and Harris and Marston results should not be extrapolated directly as stand-alone estimates of the cost of equity for regulated utilities, their results provide a reasonable long-term perspective on capital market expectations for debt and equity rates of return.

Q. Please summarize the results of your cost of equity analysis.

A. The following table summarizes my results:

Summary of Cost of Equity Estimates

DCF Analysis	Indicated Cost
Constant Growth (GDP Growth)	11.2%-11.3%
Multistage Growth Model	10.7%-10.8%
Reasonable DCF Range	10.7%-11.3%

Risk Premium Analysis	Indicated Cost
Utility Debt + Risk Premium	
Risk Premium (6.3% + 4.44%)	10.74%
Ibbotson Risk Premium Analysis	
Risk Premium (6.3% + 4.5%)	10.80%
Harris-Marston Risk Premium	
Risk Premium (6.3% + 5.13%)	11.43%

Reference Group Cost of Equity Estimate	11.0%
Premium for Additional Financial and Operating Risk	0.4%
PacifiCorp Cost of Equity Capital	11.4%

Q. How should these results be interpreted in setting the fair cost of equity for PacifiCorp?

A. Caution should be exercised in interpreting the quantitative DCF and risk premium results, because they are significantly influenced by recent historically low points in the interest rate cycle. The interest rate risk associated with projections for significantly higher rates over the coming year should be considered explicitly. Additionally, use of a lower DCF range would fail to recognize the ongoing risks and uncertainties that exist in the electric utility industry as well as the company-specific risks and uncertainties that PacifiCorp is currently facing. These factors indicate that the Company's requested 11.4 percent ROE is a reasonable estimate of the fair cost of equity capital.

Q. Does this conclude your testimony?

A. Yes, it does.