STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Consolidated Edison Company of New York, Inc. for Electric Service.	Case 13-E-0030
Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Consolidated Edison Company of New York, Inc. for Gas Service.	Case 13-G-0031
Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Consolidated Edison Company of New York, Inc. for Steam Service.	Case 13-S-0032

DIRECT TESTIMONY

OF

Basil L. Copeland Jr.

Dated: May 31, 2013
Albany, New York

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DIVISION OF CONSUMER PROTECTION
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Table of Contents

I. INTRODUCTION AND OVERVIEW OF TESTIMONY

Q. Please state your name and business address.

A. My name is Basil L. Copeland Jr. and my business address is: 14619 Corvallis Road, Maumelle, AR, 72113.

Q. What is your occupation, by whom are you employed, and for whom are you testifying?

A. I am an economist, specializing in energy and utility economics, and a principal of Chesapeake Regulatory Consultants, Inc., in Annapolis, MD. I am testifying on behalf of the Utility Intervention Unit, New York Department of State, Division of Consumer Protection.

Q. Please describe your education and professional experience.

A. I received my education at Portland State College (1967-1969), New Mexico Institute of Mining and Technology (1969), and Oregon State University (1972-75). In 1974 I received a Bachelor of Science degree in Economics from Oregon State University, and in 1976 a Master of Science degree in Resource Economics (with a minor in Business Finance) from the same institution.

From August 1975 to February 1977, I worked as a financial analyst and staff economist for the Arkansas Public Service Commission. From March 1977 to August 1978, I worked in a similar position for the Iowa State Commerce Commission. In September of 1978 I went to work for the Attorney General of Arkansas in a U.S. Department of Energy-funded office of consumer services, with responsibility for economic analysis in electric utility rate cases. While with the Attorney General, I assisted in the development of legislation that created the Arkansas Department of Energy. In July of 1979, soon after the Department was officially created, I became Deputy Director for Forecasting. In that position, I directed a staff with broad responsibilities that included the development of an energy management information system for monitoring energy supply and demand in Arkansas, including comprehensive forecasts of energy demand by fuel source and sector.

I left the Arkansas Department of Energy in January 1981, and worked briefly as an independent consultant before joining the consulting firm of Hess and Lim, Inc., in April 1981. While employed by Hess and Lim, I served as a consultant on numerous rate cases before the FERC and various state utility commissions. I left Hess & Lim in October 1986 to join with two other consultants in the founding of Chesapeake Regulatory Consultants. I have testified or provided technical assistance in over 150 proceedings before the FERC, the FCC, and regulatory bodies in: Alabama, Arizona, Arkansas, California, Colorado, Georgia, Illinois, Iowa, Kansas, Maine, Maryland, Mississippi, Montana, New Jersey, New Mexico, New York, Oklahoma, Pennsylvania, Rhode Island, South Dakota, Texas, Vermont, Washington State, West Virginia, and the District of Columbia. On four occasions I have been invited to appear on the program of the annual conference of Michigan State University's Institute of Public Utilities, and I have served as faculty for the

Michigan State-NARUC summer training program for regulatory commission personnel.

I have published numerous articles, set forth in Appendix A, on a variety of utility issues, including articles or comments in *Land Economics, American Economic Review, Public Utilities Fortnightly, Journal of Business Research, Yale Journal on Regulation, Journal of Portfolio Management, Energy Law Journal,* and the *Financial Analysts Journal*. My 1982 article in the Financial Analysts Journal on the equity risk premium received a Graham and Dodd award from the *Financial Analysts Federation*. I have also served as an academic referee for two academic journals where I reviewed articles on utility economics and finance. My article in the Spring 1991 issue of the *Energy Law Journal* ("Procedural vs. Substantive Economic Due Process for Public Utilities," with Walter Nixon. *Energy Law Journal* 12 No. 1 (Spring 1991): 81-110) deals with the constitutional standards for due process as applied to utility ratemaking under the celebrated Hope case. Federal Power Comm'n v. Hope Natural Gas, 320 U.S. 591 (1944). It offers a comparative analysis and critique of the 1989 Duquesne decision. (Duquesne Light Co. v. Barasch, 488 U.S. 591 (1989). A list of publications is provided at the end of my testimony.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to present evidence with respect to the cost of capital for Consolidated Edison Company of New York, Inc. ("Con Edison" or "the Company") and to recommend a fair and reasonable rate of return based upon that evidence. I will also review and respond as necessary to Con Edison's presentation of evidence on these matters, including the issue of a stay out premium.

Q. Please summarize your conclusions regarding the cost of capital and your recommended rate of return.

A. Based on the evidence presented in my testimony, I conclude that the cost of equity capital for Con Edison is 7.93 percent, and recommend a rate of return on equity equal to this cost of equity capital. Using my recommended rate of return on equity and the capital structure and component costs described later in my testimony, the overall cost of capital and fair rate of return is 6.48 percent.

Q. Have you prepared Exhibits accompanying your testimony?

A. Yes. I have prepared the following Exhibits:

Exhibit ____ (BLC-1), titled "Survey of Recent ERP Research," summarizes research on the equity risk premium discussed in my testimony.

Exhibit ____ (BLC-2) consists of a page excerpted from one of the risk premium studies I discuss ("Graham-Harvey: The equity risk premium in 2013").

Exhibit ____ (BLC-3) is a two-page exhibit, with the first page containing data used in my two- and three-stage DCF models, and the second page presenting the results of my two-stage DCF model.

Exhibit ____ (BLC-4) is a one-page exhibit presenting the results of my three-stage DCF model.

Exhibit ____ (BLC-5) is a one-page exhibit presenting the results of my CAPM analysis.

Exhibit ____ (BLC-6) shows the capital structure and overall rate of return using my recommended rate of return on equity.

Q. Please describe how you have organized the remainder of your testimony.

A. In Section II I provide a brief discussion of basic principles regarding rate of return and the cost of equity in regulation. In Section III I survey current research on the equity risk premium that I believe is important to framing judgments concerning the reasonableness of rate of return recommendations. Section IV is a detailed discussion of the cost of equity methodologies I employ and presents my findings based on those methodologies. Section V provides my calculation of an overall rate of return and discusses issues relating to capital structure and cost of debt. In Section VI I discuss the issue of a stay-out premium. In Section VII I respond to the Company's testimony and evidence regarding cost of capital and rate of return.

II. ROLE OF RATE OF RETURN AND THE COST OF EQUITY IN REGULATION

Q. Please explain the relationship between rate of return and the cost of equity.

A. Typically, regulated utilities have utilized three sources of capital to capitalize their utility assets: common stock, preferred stock, and long-term debt. The rate of return for a regulated firm is usually based on its “weighted average cost of capital.” This weighted average cost of capital represents the cost of the individual sources of capital weighted by their proportion as represented in the capital structure.

Q. How are capital costs measured?

A. The cost of long-term debt can be directly measured from the interest rate (and related costs) on the various issues of debt used to support the capital structure, and is only rarely a direct source of significant controversy in establishing a rate of return for a regulated utility. The cost of common equity, however, cannot be directly measured or estimated. It must be inferred from market-based common stock dividend and price information using one or more cost of equity estimation methodologies.

Q. Why is it important to base the allowed rate of return on equity on the market cost of equity?

A. Basing the allowed rate of return on equity on the market cost of equity accomplishes two significant and desirable regulatory objectives. First, it fairly balances the competing interests of ratepayers, on the one hand, and shareholders, the board of directors, and executive management on the other hand. Ratepayers are interested in receiving safe and reliable service at the lowest possible cost. Shareholders are interested in receiving the highest possible rate of return. Management shares in this interest because their performance is often judged, in part, by the allowed rate of return they obtain from regulators. A rate of return based on the market cost of equity fairly and reasonably balances these competing interests.

If the allowed rate of return on equity is significantly below the market cost of equity, then the impairment of the firm's financial integrity undermines its ability to render safe and reliable service. It is in the ratepayers' interest, therefore, to allow a rate of return on equity at least equal to the market cost of equity. Ratepayers, however, have no interest in paying a rate of return significantly above the market cost of equity. And while shareholders and company executives may delight at the opportunity to earn the excess profits associated with a return on equity above the market cost of equity, their complaints that they were denied this opportunity should not be taken seriously if the allowed equity return is consistently established on the basis of the market cost of equity. Such a return is commensurate with the financial risks they incur and with the returns they could earn elsewhere in the marketplace on comparable investments.

Second, an allowed rate of return on equity for the Company equal to the market cost of equity provides the appropriate management incentives to operate the utility safely, reliably and efficiently. An allowed rate of return on equity equal to the market cost of equity provides the same kind of incentive to the managers of a regulated utility as do earnings per share and market value goals for a competitive unregulated business. If management has a reasonable opportunity to earn a rate of return on equity equal to the market cost of equity, it should be able to meet all reasonable goals and expectations of both shareholders and ratepayers.

III. EQUITY RISK PREMIUM SURVEY

Q. What is the equity risk premium?

A. The equity risk premium (“ERP”) is the additional return that investors require on stock relative to a risk free investment to compensate for market risk. It is implicit in rate of return methodologies like the Discounted Cash Flow (“DCF”) method and explicit in methodologies like the Capital Asset Pricing Model (“CAPM”). I describe these methodologies in more detail later on in my testimony. While every equity investment has its own inherent risk premium required by investors, most discussion and research of the equity risk premium focuses on the market risk premium – the equity risk premium for the market as a whole.

Q. Why should the Public Service Commission ("PSC” or “Commission”) be concerned about the equity risk premium?

A. In the case of methodologies like CAPM, the market risk premium is an explicit component of the methodology, and an accurate rate of return using this methodology is highly dependent upon the accuracy of the estimated market risk premium. But even with methodologies where the risk premium is implicit, knowledge of the market risk premium provides a benchmark for assessing the plausibility of cost of equity estimates. Furthermore, there has been a groundswell of research on the equity risk premium in recent years that is fundamentally undermining some long-held beliefs about the equity risk premium. I believe that familiarity with this research can help the Commission in its determination of the appropriate rate of return for Con Edison's shareholders.

Q. What has sparked the interest in recent years in the equity risk premium?

A. The reasons are varied. For many, it is the quest to solve what has come to be known as the "Equity Premium Puzzle." This quest, and the term "Equity Premium Puzzle" stems from a highly influential article published in 1985 by Ranjish Mehra and Edward Prescott. (Mehra, Rajnish, and Edward C. Prescott, "The. Equity Premium: A Puzzle," Journal of Monetary Economics, March 1985, 15, 145-62.) The puzzle is that through much of the 20th century, returns on stocks relative to risk free investments have been much higher than economic theory can explain. A veritable cottage industry of academic research has grown up trying to solve this puzzle. While there is almost no end to the suggestions on how to reconcile theory and evidence on the ERP, there is widespread consensus that the ERP has declined in recent decades, and is not as great as it was once believed necessary to attract investment. This has very important implications for determining the cost of equity.

Second, recent interest in the equity risk premium has been sparked by attempts to explain, or understand, the unprecedented "bull market" of the 1990's. Were the returns earned on stocks during the 1990's rational? Were they part of the "required return?" Do (or can) investors rationally expect such returns to persist in the future? These questions are extremely pertinent to regulatory decisions about the cost of capital because of the widespread use of the Ibbottson Associates' (now Morningstar) data on market returns in rate of return testimony. I cover this in more detail below.

Third, with proposals (during the Bush administration) to modify Social Security to allow investments in the stock market, and more recently (during the Obama administration) with the debate over the cost of health care reform, the question of the future performance of the stock market and future investment returns has become an important public policy issue. More specifically, the ERP is an explicit public policy variable in various proposals to modify Social Security and price the cost of health care reform. What are public policy planners assuming about the future of the stock market? Are those assumptions plausible? How do they compare with the rates of return that rate case witnesses are proposing? As I note below in discussing these estimates of the ERP, I believe they should be of interest to regulatory commissions because they provide an independent perspective on the ERP that is nevertheless similar to what regulatory commissions face from a public policy point of view.

Fourth, somewhat related to the use of market returns as a public policy variable in matters of entitlement reform is the role of market returns in assessing pension fund liability. There is growing concern over pensions being underfunded because expected future returns are being overestimated by unrealistic expectations of future asset returns. Here, too, the market risk premium, either implicitly or explicitly, is influencing a major public policy concern.

For a variety of reasons, the ERP is no longer an issue of narrow interest to utility regulation and utility rates of return. I believe that the Commission should be aware of developments in this matter, and that this information should factor into the Commission’s decision regarding the fair rate of return for Con Edison.

Q. How would you characterize the consensus of current research in this area?

A. I present a survey of the evidence below so the Commission can reach its own conclusion about what might be the consensus view here. Broadly, though, I think that current thinking about the ERP falls into one of three categories. Before I summarize these categories, it is helpful to have a historical perspective. The most common historical perspective is realized return data published by Morningstar. For the period 1926 through 2007, the historical equity return premium for common stocks averaged 7.10 percent above the income return on long-term government bonds, and this has, in the past, often been used as evidence of the equity risk premium. For the period 1926 to 2008, the average historical equity return premium fell dramatically to 6.5 percent because of the market "crash" of 2008. Through 2012, as the market rebounded somewhat, the historical equity return premium for common stocks averaged 6.7 percent.

It is important to note that this historical estimate is based on an arithmetic mean (or average), and that were we to use a geometric mean, the historical data through 2012 yielded a return premium of only 4.7 percent. These returns of 6.7 percent arithmetic and 4.7 percent geometric give us a historical "benchmark" from which to characterize current thinking about the ERP.

Q. Please describe the three broad categories of current thinking regarding the equity risk premium.

A. In the first category are those who believe that the ERP remains relatively high. Today, few predict that the future ERP will be as high as the historical return on stocks vis-a-vis risk free investments, but some still believe that the future will come close to realizing the same kind of returns. Estimates of the ERP in this category tend to fall into the 4-6 percent range.

In the second category, which is as close as we get to a consensus, are those experts who believe that future stock returns will be substantially lower than returns historically realized through much of the 20th Century, but still comfortably above bond returns. These estimates of the ERP tend to fall into the 2-4 percent range.

The third category is characterized by those who believe that the current ERP is very low, if not zero, and that stocks are not likely to significantly outperform bonds in the foreseeable future. Here we are looking at ERP estimates of 0-2 percent, and in some cases even less. The equity risk premium can be negative, or less than zero, when investors have an absolute preference for stocks over bonds. This preference is frequently evident during times of rapid inflation. Inflation erodes the value of bonds, because the coupon rate is fixed; stocks can better adapt to inflation because firms can pass on the inflationary effect of higher input prices in the output prices of goods sold. This makes stocks a "hedge against inflation" and can lead to a situation where stocks are considered less risky than bonds.

Q. Why is there such a disparity of opinion about the equity risk premium?

A. With few exceptions, there is uniform agreement across all three groups that the current or foreseeable future ERP is lower than the historical realized premium on stocks vis-a-vis bonds. In other words, the expectation is for lower than the 6.7 percent arithmetic and 4.7 percent geometric means realized historically. Keep this expectation in mind when viewing the results presented below. The three groups disagree mainly over how much lower, not whether the ERP will be lower. Thus, Robert Arnott, former editor of the Financial Analysts Journal, and a contributor to recent research on the ERP, thinks it fair to say:

> Few serious observers of the capital markets argue that the future risk premium for stocks relative to bonds can rival the lofty excess return that stocks have delivered in the past.

(Arnott, Robert, "The Meaning of a Slender Risk Premium," Financial Analysts Journal, March/April 2004, pp. 6-8.) That said, it is still common to see rate of return witnesses simply extrapolating historical returns for an equity risk premium. But one can find little serious research these days to back up such an approach.

As to the disparity in views as to how far the risk premium has fallen, I think the differences owe to a combination of the following factors:

- The extent to which researchers use strictly forward-looking fundamental valuation models versus analysis of historical return data;
- The selection of time frames when analyzing historical data;

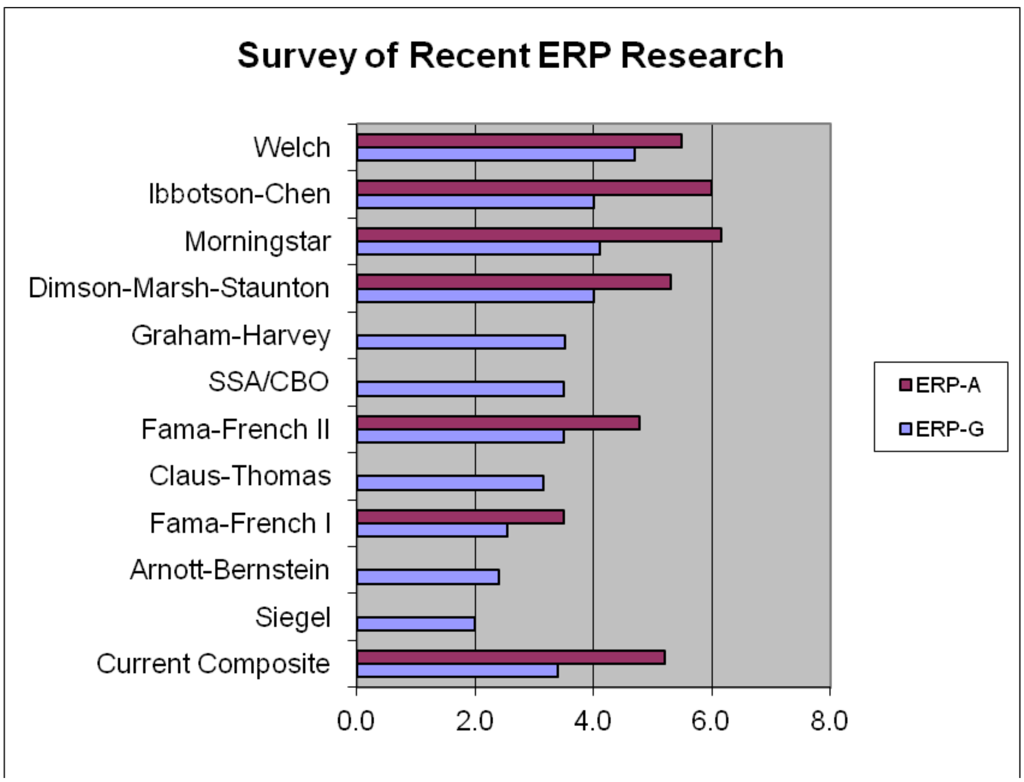
and

- Methodological issues such as whether to use geometric or arithmetic averages in estimating the ERP, and whether to use US Treasury bills or bonds as the proxy for determining the risk free rate.

I will highlight examples of these kinds of differences in surveying recent studies of the ERP.

Q. What studies or evidence about the ERP does your review encompass?

A. The studies I review in this survey are summarized in the following chart:



Details used in composing the chart are presented in Exhibit ___ (BLC-1). The darker (red) bars, labeled "ERP-A", represent arithmetic estimates of the ERP; the lighter (blue) bars, labeled "ERP-G," represent geometric estimates of the ERP. As just noted, the upper end of recent estimates falls in the 4 to 6 percent range. But even this can be misleading because they do not all use the same base for a risk-free rate; and therefore, some of these higher estimates are actually lower than they appear. I bring this out in the discussion below, and take it into account when summarizing the results in terms of a "Current Composite."

Q. Please describe the Welch and Ibbotson-Chen Studies.

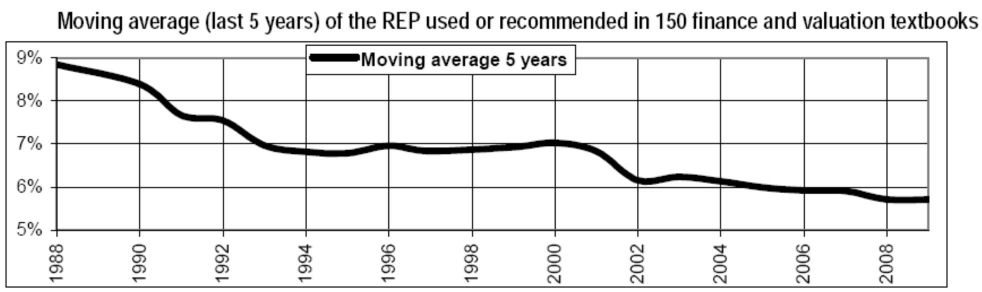
A. These studies fall toward the upper end of the range of recent estimates of the market risk premium. In 2001, Ivo Welch, then Professor of Economics and Finance at Brown University, and a National Bureau of Economics Research Associate in the Corporate Finance group, published survey results, updating an earlier survey, of the views of finance and economics professors on the ERP. With results from over 400 respondents, Welch reported 30 year equity premium forecasts of 4.7 percent geometric and 5.5 percent arithmetic. (Welch, Ivo, "The Equity Premium Consensus Forecast Revisited" (September 2001); Cowles Foundation Discussion Paper No. 1325, http://ssrn.com/abstract=285169.) Professor Welch observed that this was a significant decline from a survey taken just three years earlier. It is further notable that the survey used US Treasury bills for the risk-free rate. The ERP measured relative to long-term US Treasury bonds would be even lower. The 6.7 percent arithmetic and 4.7 percent geometric risk premium averages from Ibbotson Associates/Morningstar are relative to US Treasury bonds, not US Treasury bills. Professor Welch posted an online update in early 2009 in which he reported that "[t]ypical expected equity premia are between 5% and 6% per year." (The updated results are posted online at:

http://research.ivo-welch.info/equpdate-results2009.html.) The lower end of this range is based on a geometric mean return and the upper end is based on an arithmetic mean return. Again, it should be noted that Professor Welch's survey asks for premiums relative to US Treasury bills, so these results would be lower if measured relative to long-term US Treasury bonds.

Recent studies by Pablo Fernandez help place Welch's results in perspective. In one study, Fernandez published results based on responses from 1,400 economic and finance professors. (Fernandez, Pablo, "Market Risk Premium used in 2008 by Professors: a survey with 1,400 answers," http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1344209.) The mean ERP, 6.3 percent, is similar to the results obtained by Professor Welch. However, Fernandez includes this telling quote from Aswath Damodaran, a finance professor at the Stern School of Business at New York University:

> the risk premiums in academic surveys indicate how far removed most academics are from the real world of valuation and corporate finance and how much of their own thinking is framed by the historical risk premiums [e.g. Ibbotson Associates/Morningstar]... The risk premiums that are presented in classroom settings are not only much higher than the risk premiums in practice but also contradict other academic research.

(The quotation is from page 8 of the previously cited Fernandez paper. The bracketed reference to Ibbotson Associates/Morningstar is supplied to clarify the meaning of the term "historical risk premiums." Fernandez shows that historical returns are the most often cited source of the ERP used by professors in the classroom. For a fuller and harsher presentation of Professor Damodaran's view of this, see Damodaran, Aswath, "Equity Risk Premiums (ERP): Determinants, Estimation and Implications - A post-crisis Update," October 2009, http://www.stern.nyu.edu/~adamodar/pdfiles/papers/ERP2009.pdf.) We will see further proof of this when examining evidence from surveys of corporate CFO's (Chief Financial Officers) later in this survey. In other research, Fernandez documents how the ERP used in textbooks has been falling, demonstrated visually in the following graph ("REP" in the graph refers to what we are referring to as ERP). (Fernandez, Pablo, "The Equity Premium in 150 Textbooks," September 14, 2009, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1473225.)



Academic references to the equity risk premium have steadily declined, and according to Fernandez, the latest textbooks use an equity risk premium of 5.7 percent, down from nearly 9 percent two decades ago. Bear in mind that most professors, and even textbook authors, do not conduct original ERP survey research. They simply repeat the "conventional wisdom," which has until recent years been dominated by the historical return research of Ibbotson Associates/Morningstar. Nevertheless, it is significant to observe that even among finance professors and textbook authors the ERP they use has been falling, and is now no more than about 6 percent.

In my view, though, the exemplary study supporting a high ERP is by Roger Ibbotson and Peng Chen. (Ibbotson, Roger, and Peng, Chen, "Long-Run Stock Returns: Participating in the Real Economy," Financial Analysts Journal, January/February 2003, 88-98.) Using a variety of historical and supply-side (forward-looking) data they concluded that the ERP was about 4 percent geometrically and 6 percent arithmetically. In light of the controversy that often surrounds the question of geometric versus arithmetic returns when measuring the ERP, which I discuss in more detail later, it is notable that they present estimates of both, and in an interview Ibbotson cites the lower geometric mean as his basis for estimating the current risk premium. (Lord, Mimi, "Is the Equity Risk Premium Still Thriving, or a Thing of the Past?" Journal of Financial Planning, April 2002, Article 7.)

Q. Is what Ibbotson and Chen published in the Financial Analysts Journal inconsistent with what Morningstar publishes in its *Yearbook*?

A. No. Morningstar has recently been presenting a "supply-side" estimate of the ERP in its annual yearbooks. In the 2007 edition of Morningstar's Valuation Yearbook this "supply-side" estimate was 6.35 percent arithmetically and 4.33 percent geometrically. In the 2013 edition, the "supply side" estimate of the ERP is 6.13 percent on an arithmetic mean basis and 4.09 percent on a geometric return basis. So while Morningstar still publishes the historical returns they now use the "supply-side" estimate of the ERP for forward looking expectations of the

ERP. In the survey chart above I have included both the original Ibbotson-Chen results as well as the 2013 Morningstar "supply side" ERP.

Q. Please explain what is meant by a "supply-side" estimate and how it differs from the historical return.

A. A “supply-side” estimate recognizes that historical returns may incorporate unanticipated capital gains or losses. This was the central insight of my 1982 paper in the Financial Analysts Journal. There is no quarrel that over the time frame under consideration (here 1926-2011), investors actually received a return of 4.7 percent geometric or 6.7 percent arithmetic relative to the income return on long-term government bonds. But is this what investors were actually expecting? There is now growing awareness that over long periods of time, stocks and bonds may be realizing unanticipated capital gains or losses as a result of changes in the cost of capital. The “supply-side” approach recognizes this and seeks to remove the unanticipated component of the return from the historical series in order to more accurately estimate what investors were actually expecting as opposed to what they actually received. By removing the component of return representing unanticipated capital gains or losses, the resulting return only measures the expected return "supplied" by the underlying fundamentals (dividends and earnings). The removal of unanticipated capital gains and losses is typically done either by adjusting the historical return for long-term changes in Price/Earnings (“P/E”) ratios, or dividend yields (Dividend/Price). Ibbotson and Chen use changes in P/E ratios to develop their “supply-side” estimate. Had they used dividend yields, as some researchers have done, the "supply-side" ERP would have been even lower.

Q. Please describe the Fama-French estimates of the ERP.

A. The best way to summarize their findings is to quote from the abstract of their article in the Journal of Finance:

> We estimate the equity premium using dividend and earnings growth rates to measure the expected rate of capital gain. Our estimates for 1951 to 2000, 2.55 percent and 4.32 percent, are much lower than the equity premium produced by the average stock return, 7.43 percent. Our evidence suggests that the high average return for 1951 to 2000 is due to a decline in discount rates that produces a large unexpected capital gain. Our main conclusion is that average stock returns of the last half-century is a lot higher than expected.

(Fama, Eugene F., and French, Kenneth R., "The Equity Premium," Journal of Finance, V57, No. 2 (2002), 637-659.) In other words, as the cost of equity capital (the "discount rate" for equity capital) fell, it produced large, unanticipated capital gains. This is just another way of reflecting the intuition behind the "supply-side" estimate of the ERP discussed above: historical returns themselves only tell us what investors realized on an ex post or after-the-fact basis. The cost of capital, though, is an ex ante or forward-looking concept.

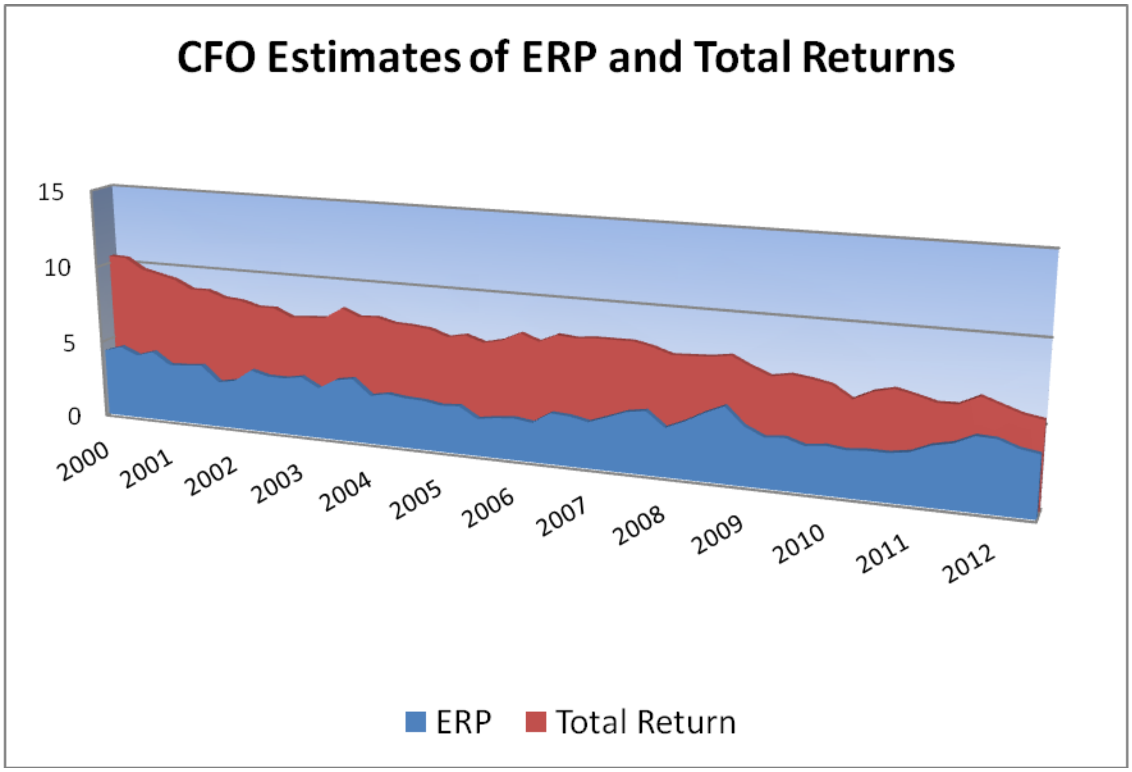
To avoid extrapolating ex post returns that are not indicative of what investors actually expected, Fama and French used forward looking valuation models essentially identical to the familiar DCF model we use in regulation to estimate the cost of equity for public utilities. In one model they used dividends; this model yields the 2.55 percent ERP cited in the abstract. When they used earnings, the estimated ERP was the 4.32 percent. The ranges presented in the chart for the Fama-French study are the “bias-adjusted” figures shown in Table IV of the article, with the “annual” result being interpreted as “arithmetic” and the “long-term” result being interpreted as “geometric.” In the table, the ERP estimated from dividend growth is labeled “Fama-French I” and the ERP estimated from earnings growth is labeled “Fama-French II.” Either result is considerably below the 6.7 percent arithmetic return premium, or the 4.7 percent geometric return premium that has been realized historically. Again, what this indicates is that investors historically realized unanticipated returns and that these cannot be realistically extrapolated in estimating the current expected ERP.

Q. Please describe the Dimson-Marsh-Staunton and Graham-Harvey studies.

A. Somewhat in the vein of the classic historical analysis of Ibbotson Associates/Morningstar, the Dimson-Marsh-Staunton research goes further by using a longer historical dataset, beginning in 1900 rather than 1926 and extending the analysis to equity markets in countries other than just the US. In what now is becoming conventional wisdom, however, they recognized that the historical series includes unanticipated capital gains, and they subtract them to yield what is essentially a “supply-side” estimate of the historical equity risk premium. For the US, the 1900-2001 realized return premium was 5.6 percent geometric; adjusted for unanticipated capital gains and a declining cost of equity capital, they derived a 4.0 percent geometric ERP for the US over the entire 1900-2001, and projected a 5.3 percent arithmetic ERP going forward. (Dimson, E. Marsh, P.R., and Staunton, M., “Global evidence on the equity risk premium,” Journal of Applied Corporate Finance, Vol. 15, No. 4 (2003), 27-38.) It is my opinion that these numbers would be much smaller if Marsh and Staunton used data from only the latter half of the 20th century. These results also measure the ERP relative to US Treasury bills, which makes them higher than the ERP one would use for longer term investments. As explained below, I take into account whether a study used US Treasury bills or bonds in deriving my “current composite” of the ERP.

The Graham-Harvey study takes a different and somewhat unique perspective to estimating the ERP. Since June of 2000 Duke University has been including in its quarterly survey of CFO’s a question about expected 10-year average returns on the S&P 500. Graham and Harvey compare these estimates to 10-year US Treasury bond rates at the time of the survey to derive implied expectations regarding the ERP. The lowest expected ERP reported by CFO's since this question was added to the survey was 2.39 percent in Quarter 1 of 2006; the highest ERP was 4.78 percent, in Quarter 2 of 2009, and the latest ERP, for Quarter 1 of 2013 was 3.83 percent. The average for all quarters since the survey began is 3.53 percent, and this is what is depicted in the chart on Exhibit ____ (BLC-1), and on Page 14 above. (Graham, J.R., Campbell, R.H., “The Equity Risk Premium in 2013," August 9, 2010. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2206538)

I think it is important to emphasize how the ERP from the Duke University CFO surveys is determined. The CFOs are not asked what they think the ERP is directly. They are asked what they think the overall market return will be relative to 10-year US government bonds; the ERP is derived by determining the difference between the two. This means that we can compute what the total expected market return was from the CFO surveys, and I think the results are highly informative. The following chart (see Exhibit ___ (BLC-2) for source data) depicts the ERP and the total expected return since the surveys began:



Since early 2001, the total expected market return projected by the surveyed CFO's has been in the single-digit range, i.e., below 10 percent. This is notable because there seems to be resistance among public utilities and some rate of return witnesses to the notion that expected market returns and the cost of equity capital are in the single digits. Yet here we have several hundred CFO's being surveyed and over 17,000 survey results now over the past 12 years, and the consensus is clearly and consistently that the total expected market return, i.e., the cost of equity capital for the market as a whole, is well below 10 percent. Somewhat in the vein of Professor Damodaran's observation that academic and classroom assessments of the ERP are often unrealistic and at odds with real world expectations. I would suggest the same of regulated utilities and witnesses who cannot conceive that the cost of equity might currently be in the single digits.

Q. What do you believe would have been the result of proposals to modify social security that assumed an ERP of 6.7 percent, the historical arithmetic return premium on common stock from 1926 through 2012?

A. I can assure the Commission that such proposals would have been rejected out of hand. The adverse effects of using a 6.7 percent ERP would have been monumental, and would have provoked considerable opposition. In the case of Social Security, this would have resulted in wholly unrealistic estimates of the returns that retirees might expect on funds invested in the stock market. Critics of the proposal would have lambasted this approach. In the case of budget projections and the pricing of the cost of health care, using a 6.7 percent ERP would have strengthened the arguments of those opposed to the health care reform proposals of the Obama administration.

Q. If it is unreasonable for the SSA or the CBO to assume that the stock market will return 6.6 percent (or more) above a risk free return, how does 6.7 percent (or more) suddenly become reasonable when presented in rate of return testimony?

A. It does not. A 6.7 percent (or more) ERP is simply not in the realm of a reasonable projection of the current ERP in this economy. If the historical market risk premium is of any significance at all currently, then it is as an absolute maximum of what is currently reasonable or credible as an estimate of the ERP. But, as I noted above, taking such a position is not on particularly firm ground. A fairer reading of the evidence shows that most experts consider the ERP at the present time to be lower than the historical return premium. Indeed, some experts believe that it may be considerably lower, by half or more.

Q. Please describe the Claus-Thomas, Arnott-Berstein, and Siegel estimates of the ERP shown in the chart on Exhibit ____ (BLC-1), and above on Page 14 of this testimony.

A. These studies are indicative of the lower end of current thinking about the ERP. The Claus-Thomas study was published in the Journal of Finance under the provocative title “Equity Premia as Low as Three Percent? Evidence From Analysts Earnings Forecasts For Domestic and International Stock Markets.” These studies used what they call an “abnormal earnings” version of the discounted cash flow model of stock valuation. While it is an over-simplification to describe it this way, it is similar in construct to a two-stage or non-constant DCF model. In my view, the key intuition in their approach is recognizing that analysts’ forecasts, such as the I/B/E/S or Zack's consensus forecasts often used in DCF analysis, are abnormally high and cannot be projected indefinitely or into perpetuity. When this is taken into account, the studies find that the implied ERP from analysts' forecasts averaged 3.36 percent from 1985 to 1998. (Claus, J., and Thomas, J., "Equity Premia as Low as Three Percent? Evidence From Analysts Earnings Forecasts For Domestic and International Stock Markets," Journal of Finance, Vol. 56, No. 5 (2001), 1629-1666.)

The Arnott-Bernstein study, published in the Financial Analysts Journal, looks at an even longer period of time, 1802 to 2001, to estimate what can reasonably be called a "normal" risk premium. (Arnott, R.D., and Bernstein, P.L., "What Risk Premium is 'Normal'", Financial Analyst Journal, March/April 2002, 64-86.) One finding from their analysis is that stock returns, especially in the 20th century, have been the product of "happy accidents" while bond returns experienced the opposite. Putting this in the language used earlier, stocks have enjoyed a series of unanticipated capital gains while bonds have experienced an unanticipated capital loss. When historical returns are adjusted for these "accidents" Arnott and Bernstein found that the "normal" ERP is just 2.4 percent. Moreover, almost all of the "happy accidents" for stocks have accumulated since 1981, and when they take this into account they suggest that the current ERP could be zero, or even negative! But what I depict in the chart is their "normal" ERP of 2.4 percent.

The final ERP shown in the chart on Page 14 (Exhibit ____ (BLC-1)) is a forecast by Jeremy Siegel. Siegel is the author of several well known studies and books analyzing historical returns. In a 2001 forum on the equity risk premium, he projected an ERP of 2 percent. (Siegel, Jeremy, "Historical Results

I," Equity Risk Premium Forum, November 8, 2001, AIMR, 30-34. http://www.cfapubs.org/doi/pdf/10.2469/op.v2002.n1.4018.)

Q. Please describe the current composite shown in the chart on Exhibit ___ (BLC-1).

A The Current Composite takes into account all the ERPs presented in the chart, taking into consideration whether they were based on US Treasury bills or bonds, and whether they represent geometric or arithmetic means. In deriving this Current Composite I associate geometric means with US Treasury bond yields, and arithmetic means with US Treasury bill returns. Arithmetic means are the proper basis for expressing annual rates of return, and thus should be associated with a short term rate like the yield on US Treasury bills. Geometric means are the appropriate basis for expressing rates of return realized over a long period of time, and thus should be associated with a long-term rate like the yield on US Treasury bonds. As shown on the chart the studies show an approximate average geometric ERP of 3.40 percent and an approximate average arithmetic ERP of 5.20 percent.

Q. How should the Commission make use of this information in determining a rate of return for Consolidated Edison?

A. ERP or the market risk premium is a critical parameter in the application of the CAPM methodology for estimating the cost of equity. The data on the chart provides a basis for assessing the reasonableness of estimates of the market risk premium. Any estimate of the market risk premium substantially above the 6.7 percent historical return premium is, in my estimation, outside the range of reasonableness. I will return to this point later in my testimony when estimating the CAPM cost of equity for Con Edison.

IV. CONSOLIDATED EDISON'S COST OF EQUITY CAPITAL

Q. Please describe how you have approached estimating the cost of equity capital for Con Edison.

A. I have generally followed the Commission practice outlined in the 2011 Orange and Rockland decision:

> In recent rate cases, we have repeatedly affirmed certain key elements of the methodology we use in determining the appropriate cost of equity to be included in rates. These include (1) the application of Discounted Cash Flow (DCF) and Capital Asset Pricing Model (CAPM) analyses to a representative proxy group of utility companies; (2) utilization of a two-stage DCF computation with inputs derived from *Value Line;* (3) basing the CAPM result on an average of the outcome from standard and zero-beta models with a risk-free rate based on Treasury bonds, market risk premium provided by Merrill Lynch's *Quantitative Profiles*, and betas taken from Value Line; and (4) a 2/3 -1/3 weighting of the DCF and CAPM results, respectfully.

(Case 10-E-0362, Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Orange and Rockland Utilities, Inc. for Electric Service, Order Establishing Rates For Electric Service, (Issued June 17, 2011) ("2011 O&R Rate Order"), at 64.) I have departed from this methodology only with respect to the estimation of the market risk premium. Based on the survey of equity risk premium research presented above, I do not believe that a market risk premium based upon Merrill Lynch's *Quantitative Profiles* will, at the present time, yield a credible estimate of the required equity risk premium for CAPM. I discuss this again in my implementation of the CAPM methodology, and also in my analysis of Mr. Hevert's market risk premium estimate which, while relying on sources other than Merrill Lynch's *Quantitative Profiles*, reflect a similar infirmity.

Q. How did you derive your proxy group?

A. With two minor and probably negligible exceptions, I utilized the proxy group developed by Con Edison's witness, Mr. Hevert. Mr. Hevert followed Commission practice and selected a proxy group using the following selection criteria:

1) The proxy group was drawn from *Value Line's* coverage of electric or combination electric and gas utilities. Mr. Hevert excluded companies not covered by at least two utility industry equity analysts. I doubt that this has any real significance given the large size of the proxy group, but where possible, I prefer to minimize distinctions between the proxy group I use and the proxy group used by the Company. If the proxy group is large enough, these are often distinctions without a difference.

2) Companies whose corporate credit ratings and/or senior unsecured bond ratings were below investment grade according to S&P or Moody's were excluded.

3) Companies that are not paying regular dividends or which do have positive earnings growth were excluded.

4) Companies with less than 70 percent of total net operating income derived from regulated utility operations over the three most recently reported fiscal years were excluded.

5) Companies known to be party to a merger or acquisition were excluded.

These selection criteria resulted in a proxy group of 34 comparable utility companies including two which Mr. Hevert excluded from his proxy group: Consolidated Edison and Edison International. On page 13 of his testimony, he excluded Consolidated Edison on the ground that to include it was "circular." I disagree. A "proxy" group is simply a "sample" of comparable utilities. The advantage of using a "sample" is that the average of the sample smoothes out estimation errors. If there were no estimation errors, then we could estimate the cost of equity for a utility directly and there would be no need, nor advantage, to using a sample. As a member of the group of comparable companies whose cost of equity we wish to estimate, inclusion of Con Edison in the sample is permissible and appropriate.

As for the exclusion of Edison International, rather than exclude it on the basis of an ad hoc rationale that might or might not justify excluding it, I chose simply to estimate and report the average cost of equity for the sample both with and without Edison International. As expected, given the large size of the sample, it did not make a significant difference. Accordingly, my recommendation is based on the sample with Edison International included.

A. Discounted Cash Flow Analysis

Q. Please explain the basic procedures involved in using the Discounted Cash Flow methodology.

A. In its most basic form, the DCF theory is a "constant growth" model in which the investor's required return on common stock equity equals the dividend yield on the stock plus the expected rate of growth in the dividend. This relationship is commonly represented mathematically as:

$$k = D/P + g$$

where "k" is the cost of equity capital (the investor's required return), "D/P" is the dividend yield (the dividend divided by market price), and "g" is the expected rate of growth in the dividend. Depending on the nature of the assumptions and mathematical procedures employed in the derivation of the model, the dividend yield portion of the total return is variously represented as "D_0/P_0" or "D_1/P_0" where "D_0" and "D_1" represent the *current* dividend and the *next period* dividend, respectively. Depending further on what is assumed about the frequency of the dividend payout and the compounding of intra-period retained earnings, as an annual yield D_0/P_0 will tend to understate the effective yield, while D_1/P_0 will tend to overstate it. A valid argument can be made for using an average of the two, sometimes presented in the form $D_0(1+.5g)/P_0$.

Q. Is the constant growth DCF model a valid model of investor expectations?

A. It depends on the circumstances. Theoretically, if the constant growth assumptions are valid, earnings per share, dividends per share, and book value per share should all grow at approximately the same rate. Where this is the case, it is sometimes possible to derive reasonable and accurate estimates of the cost of equity using only one of these growth measures as a "proxy" for the expected rate of growth in dividends. But if the payout ratio is not constant, and dividends per share and earnings per share are growing at significantly different rates, using just projected earnings or dividend growth can result in distorted estimates of the DCF cost of equity. Where that is the case, more accurate and reliable estimates of the DCF cost of equity will require some form of a non-constant growth model. The most common alternatives are two and three-stage growth models.

Q. Please explain how these non-constant growth models differ from the more traditional constant growth model.

A. In a two-stage DCF model the investment horizon is divided into two parts, a near term, typically five years out from the present, and a long term, which is usually in perpetuity. During the near term, dividends and earnings are projected to grow at different rates, accommodating a period during which the payout ratio, or its mirror the earnings retention rate, is not constant. At the end of the near term period, earnings and dividends are then projected to grow at a constant rate with a fixed payout ratio just as in the more traditional constant growth DCF model.

In a three-stage DCF model, between the near term and long-term periods, there is a transition period over which payout ratios (or, again, the mirror equivalent, retention ratios) are projected to regress to an industry norm. This model reflects the reality that over time, abnormal changes in payout ratio tend to moderate and return to more normal values. Statistically, this is sometimes called "regressing to the mean."

Q. Is there a practical difference between the results of two and three-stage DCF models?

A. Again, it depends. Where a consistent set of assumptions is used in both cases, the *mean* estimate of the cost of equity from a proxy group should not vary significantly between the two approaches. This is because both approaches should employ the same, or similar, assumptions about earnings and dividend growth during the near term. DCF is a model of how investors *discount* future dividend growth, and the near term weighs far more heavily in terms of discounted net present value than growth further out into the future. Since the two models are modeling the most important part of the growth horizon using the same or similar inputs, we should expect the mean results of the two different models to be similar.

The primary difference is with respect to the DCF estimate for *individual* companies within the proxy group. Because the three-stage DCF model assumes that during the transition period, payout ratios will revert to an industry norm, then with the three-stage DCF all companies will have the same long-term growth rate in the final stage of the DCF analysis. Consequently, while the mean DCF cost of equity should be the approximately the same with the two different methodologies, there will be less variation among the individual DCF returns with a three-stage model than with a two-stage model.

Q. Do you have a preference for one or the other of the models?

A. No, not as long as appropriate and consistent assumptions are employed. Especially where we are using the mean of a proxy group to infer the DCF cost of equity, neither approach is superior to the other. I've been using a three-stage DCF model for nearly two decades. I am aware, however, of the Commission precedent for a two-stage model. Since I think the difference between the two approaches will be negligible, if appropriate inputs are used, I have followed Commission precedent and developed my recommended return on equity using a two-stage model. I have, however, also estimated the cost of equity for the proxy group using a three-stage model. I have done so for two reasons. The first is to simply empirically demonstrate what I have said above about how the two approaches should produce similar results. The second is to lay a foundation for later in my testimony where I respond to the use of a three-stage DCF model by Mr. Hevert.

Q. Please describe your implementation of the two-stage model and the resulting estimate of the DCF cost of equity.

A. Exhibit ____ (BLC-3), consisting of two pages, shows the data used and the outcome of the two-stage DCF analysis. During the near term, 2013-2017, dividends are projected to grow at the rate of growth projected by *Value Line*.

For the long term, after 2017, dividend growth is projected using the "br + sv" method, with the "br" component based on *Value Line's* "% Return to Common Equity," and "sv" derived using current market to book ratios and a projection of share growth per company from 2013 to 2017. The near term and long-term growth rates are developed on Page 1 of Exhibit ____ (BLC-3), and the two-stage DCF results follow on Page 2 of Exhibit ____ (BLC-3). The stock price used to compute the dividend yield is a three month average for a period ending on May 13 through May 16, 2013. Certain data presented in Exhibit ____ (BLC-3) are not used in the two-stage DCF analysis, but are used instead with the three-stage DCF model. These are data pertaining to earnings per share and retention rates. However, the three-stage DCF analysis makes use of some of the same inputs as the two-stage DCF analysis, so I have used a common format for collecting and presenting the results of the two approaches.

The mean DCF cost of equity using the two-stage DCF model was 8.01 percent and the median was 7.97 percent. During the near term, mean retention rates rise only modestly, from 0.36 to 0.39. With such a modest change in retention we should not expect the two-stage DCF model to differ much from what would be obtained using a constant growth DCF model. That hypothesis can be confirmed by adding the mean dividend yield for the proxy group, 4.06 percent, to the mean near term dividend growth rate of 4.32 percent which equals 8.38 percent. The two-stage DCF result of 8.01 percent is just slightly lower than a constant DCF estimate of 8.38 percent. However, the lower two-stage DCF result is the more accurate of the two, and is what I will use in my rate of return recommendation.

Q. Do you have any further recommendations about the two-stage DCF model you have presented?

A. I am ambivalent about the need for the "sv" term in DCF analysis. Conceptually, this term reflects what is supposed to be the expected growth from the sale of new stock at prices above book value per share. There are two reasons to think that the "sv" term either overstates expected growth from the sale of new shares or is unnecessary altogether. First, the data used to extrapolate share growth often represents share growth from sources other than new shares sold at prices above book value per share, such as new shares generated from automatic dividend reinvestment plans. To that extent, the "sv" component would overstate actual growth just from sales of new stock at prices above book value.

Second, the assumption that investors actually ever *expect* growth from the sale of new stock above book value is at least for utilities dubious. This is because if regulation is effective, then over any long period of time as envisioned in a long-term DCF analysis, utility shares should trade at an average of approximately book value per share. Over shorter periods of time prices may rise above or fall below book value per share for a host of reasons, the most important being cyclical variations in the cost of capital. For instance, if the cost of equity capital rises and the allowed rate of return is not increased accordingly, prices will fall below book value. On the other hand if the cost of equity capital falls but the allowed rate of return is not decreased accordingly, then prices will rise above book value. Effective regulation will always work to overcome or offset the swings of utility stock prices above or below book value by continually adjusting rates of return to reflect changing capital market costs.

I have been estimating the cost of equity capital for utilities for almost four decades, and have seen commissions respond to all manner of market conditions. I have, for instance, seen allowed rates of return rise in response to prices that were below book value, and allowed rates of return fall as regulation adapts to declining capital costs. The process is often slow (it is essentially the same as what we sometimes refer to as "regulatory lag") but it works. And because it works a rational investor will not expect that short term capital gains (or losses) from prices significantly above (or below) book value per share will continue over the long term as envisioned by DCF. Consequently, I think the "sv" component while conceptually interesting, is in fact irrelevant and unnecessary in DCF analysis.

Q. Why, then, did you include the "sv" component in your long-term growth rate?

A. I did so for two reasons. First, I am aware of the precedent for using it in this jurisdiction. Consider my use of it here as a kind of regulatory *stare decisis*. *Stare decisis* does not mean that precedent is never overturned. But it does mean that it is likely to be overturned only after a body of evidence or argument has built up in support of overturning precedent. Perhaps, in time, the Commission may come to agree with me that the "sv" term is unnecessary and irrelevant. Meanwhile, it so happens that it is not as critical a factor in a two-stage DCF analysis as it would be in a constant growth rate analysis, because, as I have applied it here, it only impacts the determination of a growth rate for the long term and *not the near term*. Again, because discounting weights the near term more heavily than the long term, the fact that there may be a slight overestimation of the expected growth rate by including it is further diminished. For now, there are far more substantial matters to be concerned with in appropriately estimating the cost of equity than whether or not to include the "sv" term.

Q. Please describe your implementation of the three-stage DCF model.

A. The three-stage DCF model uses similar inputs as the two-stage DCF model. The price and dividend yield data are the same. The same 2013-2017 period is used for the near term and dividend growth during this period is based on *Value Line* data. However, in my implementation of the three-stage DCF model I have employed the retention ratio and dividend payout in a manner not employed in the two-stage DCF analysis. During the near term, retention ratio is based on dividends as projected by *Value Line*, and earnings as projected using the "consensus" five year earnings forecasts collected by Zacks. The period 2017-2032 (15 years) is a "transition" period in which the retention ratio for each company in the proxy group is assumed to revert to the group mean of 0.39 and then remain constant thereafter. These assumptions produce a stream of dividends and a terminal share price in 2032 that can be used to calculate the internal rate of return. As in the two-stage DCF model this internal rate of return is a DCF estimate of the cost of equity.

Exhibit ____ (BLC-4) presents the results of the three-stage DCF analysis. For the proxy group, the mean DCF return was 8.19 percent and the median was 8.28 percent. The results are similar to and corroborate the findings of the two-stage DCF analysis, which are what I would expect given that similar inputs were used. I will make use of this in my review of Mr. Hevert's three-stage DCF analysis.

B. Capital Asset Pricing Model

Q. Did you undertake an analysis of the proxy group cost of equity using the CAPM?

A. Yes, I did. Following Commission precedent, I used both the traditional and zero-beta forms of the CAPM to develop a cost of equity for the proxy group. The results are presented on Exhibit ____ (BLC-5). For inputs, I used *Value Line* betas, a risk-free rate of 3.07% which is a three month average as of May 13, 2013, and an equity (market) risk premium of 6.13 percent. The traditional CAPM model produced a cost of equity of 7.37 percent, and the zero-beta form of the model produced a cost of equity of 7.83 percent.

Q. How does your implementation of CAPM compare to Commission precedent?

A. My implementation differs from Commission practice with respect to how the Commission has traditionally developed the market risk premium. As I understand it, the Commission's approach is to derive a market risk premium by estimating an expected overall market return using Merrill Lynch's *Quantitative Profiles*, and then subtracting from it an appropriate measure of the risk free rate (using a US Treasury bond rate) to derive the market risk premium. While I have not tried to replicate that procedure, my expectation is that it will yield a result well above the range of plausible estimates of the market risk premium at the present time. Based upon the evidence surveyed earlier in my testimony, it is extremely unlikely that the market risk premium is any higher than the 6.7 percent historical return premium, and a *consensus* estimate, one based on trying to approximate the average of all likely projections, would undoubtedly be even less, in the range of 3-4 percent.

Q. Why do you believe that the methodology utilized by the Commission produces an estimate of the market risk premium so much higher than the estimates found in the literature you surveyed?

A. I believe that trying to estimate the expected overall market return "bottom up" from the kinds of individual returns found in sources like Merrill Lynch's *Quantitative Profiles* is fundamentally flawed. I do not have access to a recent edition of *Quantitative Profiles* but I can illustrate my concerns here with reference to Mr. Hevert's Exhibit ____ (RBH-5) which uses an approach and data similar to that of Merrill Lynch's *Quantitative Profiles*. Underlying this approach is the use of some form of a discounted cash flow model to estimate the cost of equity for individual companies that make up "the market as a whole" or some such proxy such as the S&P 500. However, a large number of companies that comprise the "market as a whole" or proxies such as the S&P 500 do not pay dividends. Now, in the DCF part of the Commission's general finance methodology, we *do not include* companies that do not pay dividends and for good reason. But if it is wrong to include companies that do not pay a dividend when developing a DCF return for a proxy group, why does it become permissible to include companies when trying to do what is tantamount to a DCF analysis for "the market as a whole?"

In Mr. Hevert's attempt to develop the expected market return in his Exhibit ____ (RBH-5), 95 of the 500 companies listed did not pay any dividend, while another 61 paid a dividend yielding less than 1 percent of stock price. *These companies are being priced on the basis of expectations other than dividends, or even dividend growth, over the near term that would weigh most heavily in a dividend discount model*. It is extremely difficult to estimate investor expected returns for such companies. I acknowledge that services such as Merrill Lynch, Value Line, or Bloomberg conduct these estimations, but they do not develop estimates of expected return for individual companies to be used in a bottom up estimate of the expected return on the market as a whole. More often, they use them to develop screens and rankings to try to identify stocks that analysts may be considered undervalued or overvalued. For that purpose, the absolute values of the expected return calculations are not important; what matters are relative return rankings.

Simply put, using this kind of information to build a bottom up estimate of the total expected market return is putting it to a use for which it was not intended. For this reason, bottom up estimates of the expected total market return are often considerably different than "top down" estimates. For example, currently the S&P 500 has a dividend yield of 1.92 percent, and Zacks reports a consensus five year EPS growth estimate of 5.70 percent for a five year total return estimate of 7.62 percent. This is *not* at all implausible as an estimate of the expected total return on the S&P 500. According to the CFO's surveyed by Graham and Harvey, in the latest quarter the total expected *ten year* return on the S&P 500 is at a historical low of 5.46 percent per annum. There is, then, a complete and total disconnect between top down approaches, like Mr. Hevert's estimate of an expected total market return of about 13 percent, and 325 CFO's projecting an annual return of just 5.46 percent on the S&P 500. Neither one of these may be a good estimate of the expected total market return, and a “better” estimate may well lie somewhere between these two extremes. In any event, the bottom up approach to estimating the expected total market return produces estimates of the market risk premium that are simply outside the range of plausibility based on the survey I presented earlier.

Q. How, then, did you determine a market risk premium for your CAPM estimates of the proxy group cost of equity?

A. I utilized the Morningstar "supply-side" estimate. The "supply side" estimate is a forward looking estimate of the market risk premium. It is at the high end of range of plausible estimates. However, it produces estimates of the cost of equity that are more plausible than those resulting from the use of an implausibly high ERP such as that derived with a bottom up estimate of the S&P 500 expected return. The Morningstar "supply-side" estimate of the equity risk premium in its most recently published Yearbook (2013) is 6.13 percent. This is the market risk premium I used in my CAPM analysis.

Q. Do you have any other observations with respect to the use of CAPM to estimate the cost of equity?

A. Yes, I do. I think it might be appropriate, at some point, for the Commission to revisit the weight it assigns CAPM in its generic finance methodology. I do not think that CAPM is as reliable for estimating the cost of equity to justify the 1/3 weight assigned to it in the cost of equity determination. CAPM was originally conceived as a general equilibrium theory of market returns. That is, actual, or *ex post* market returns for individual securities, were predicted to behave in a certain way under the assumption that competitive market equilibrium would continually bring *ex ante* and *ex post* returns into equilibrium. In that narrow sense, CAPM was a failure. There are various explanations or ad hoc methods to work around this failure but the failure itself cannot be denied. One ad hoc method to work around the failure is the so-called zero-beta model. But from a theoretical standpoint the zero-beta model is a black box that simply acknowledges some facts about how market returns are generated without necessarily being able to explain adequately why.

Another point to consider is that CAPM was originally conceived as a theory of *short term* market returns. The risk free rate was a US Treasury *bill* rate and the expected return had a horizon of no more than one year. To turn it into a method of estimating a long-term cost of equity gave it a purpose for which it was not originally intended. If CAPM failed in its original incarnation why should we expect it to be more successful when used to try to model long-term market expectations?

DCF, however, is more modest in its aspirations. Rather than being a general equilibrium theory that tries to explain the behavior of the market as a whole, it is a partial equilibrium theory that seeks to explain how certain stocks are priced. For a certain subset of the market, and in particular utility stocks, it happens to work very well. With sound implementation, and here the generic financing methodology and related Commission practice and precedent is well grounded, it produces accurate, reliable, *and consistent* results. I have been including CAPM in my testimony for a long time. However, I usually place little direct reliance upon the result. I believe DCF is far more than just two times more reliable or accurate for estimating the cost of equity for public utilities. Perhaps the Commission will reconsider this element of its generic finance methodology as well.

C. Overall Return On Equity Recommendation

Q. What is your estimate of the cost of equity for Con Edison?

A. My DCF estimate of the cost of equity is 8.01 percent and my CAPM estimate is 7.60 percent. Using the 2/3 and 1/3 weights in the generic finance methodology, the resulting estimate of the cost of equity is 7.87 percent.

Q. This is lower than recent returns on equity allowed by the Commission. How do you account for that?

A. Part of it owes to my use of a much lower risk premium in the CAPM methodology. Had I used Mr. Hevert's 10.15 percent risk premium, my CAPM estimate would be 10.57 percent, and the resulting ROE, with 2/3 weight given to my 8.01 percent DCF estimate, and 1/3 given to a 10.57 percent CAPM estimate, would result in an ROE recommendation of 8.86 percent. So while the risk premium portion of the CAPM accounts for some of the lower ROE I recommend, it does not account for all of it. The remainder is attributable to the DCF component of the ROE, where I have followed the generic financial methodology more closely. A DCF return near 8 percent reflects the strong market for stocks generally, and utility stocks in particular. There is generally an inverse relationship between cost of equity and the movement of the stock market. When stocks surge, that indicates a declining cost of equity, and will show up in a DCF return through the resulting lower dividend yield. When stocks slump, the opposite occurs and prices fall as the cost of equity rises. With the stock market recently near all time highs, we should expect equity capital costs to be falling relative to even recent Commission return allowances.

V. CAPITAL STRUCTURE, COST OF DEBT, AND OVERALL RATE OF RETURN

Q. Have you calculated an overall rate of return based on your recommended return on equity?

A. Yes. Exhibit ____ (BLC-6) calculates an overall rate of return using Con Edison's projected capital structure, cost of debt and customer deposits for December 31, 2014. Using the return on equity of 7.93 percent that I recommend, my recommended overall rate of return is 6.48 percent.

Q. What is the impact of using your recommended ROE of 7.87 percent on Con Edison's rate requests.

A. Using the Company’s electric exhibit AP-9, Schedule 1, I calculate that my recommended return on equity would reduce Con Edison's requested electric increase from $362.6 million to $6.5 million. Using the Company’s gas exhibit AP-9, Schedule 1, I calculate that my recommended return on equity would entirely eliminate the proposed $24.2 million gas rate increase, and require a gas rate decrease of $52 million.

These estimates differ slightly, but are of an order of magnitude comparable, to what I would infer from Con Edison's response to IR UIU-2 (EG002). According to that response, the revenue requirement impact of a 100-basis-point change in return on equity is $148.7 million for electric and $31.2 million for gas. My ROE is 248 basis points lower. For electric operations a 248 basis point reduction in ROE would reduce the requested increase by $368.8 million rather than the $362.6 million I calculate more directly from the electric exhibit AP-9, Schedule 1. For gas operations, a 248 basis point reduction in ROE would reduce the requested increase by $77.4 million compared to the $76.2 million I calculate from the gas exhibit AP-9, Schedule 1.

VI. STAY-OUT PREMIUM

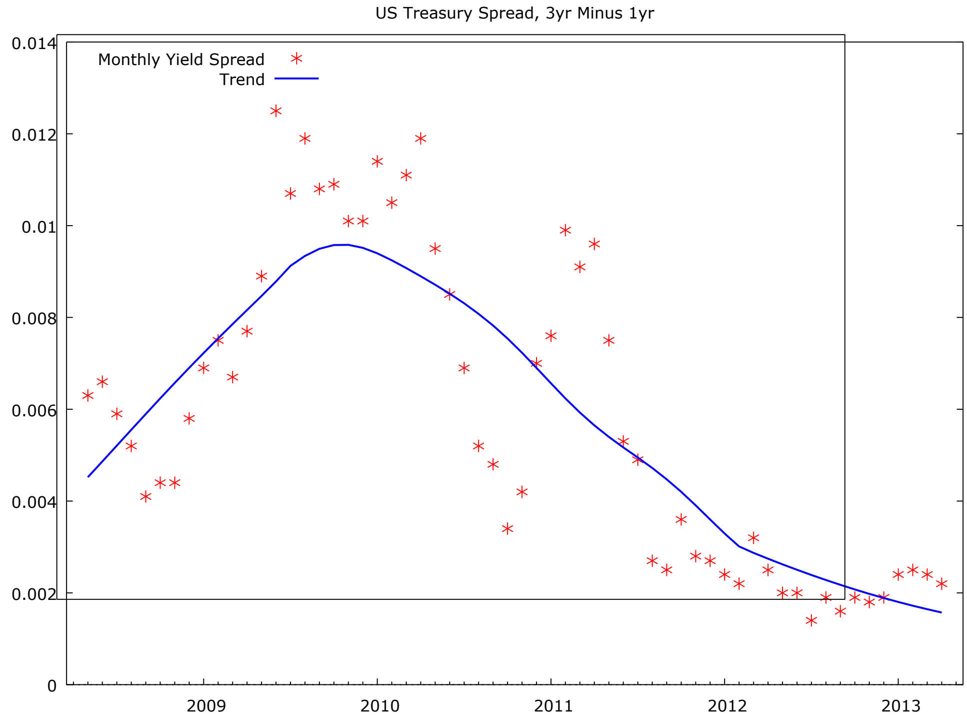
Q. Have you calculated a Stay-Out Premium appropriate for a three-year stay-out period?

A. Yes, I have. Con Edison's Witness Mr. Hevert calculated a stay-out premium consistent with prior Commission practice by taking one-half of the difference between the five-year average yields on three and one-year Treasury Notes. For a five-year period ending November 2012, a stay-out premium calculated this way would be 0.29 percent, or 29 basis points. I updated this calculation through April 2013, and the resulting stay-out premium would be 0.30 percent, or 30 basis points.

Q. Is this a reasonable stay-out premium?

A. I think it may be too generous. While using the spread between three and one-year Treasury Note yields to derive a stay-out premium is sound from an economic standpoint, a five-year average, at least at the present time, will produce a premium that is too large given current market conditions. This is because a five-year average reaches back and includes a period when markets were particularly troubled and unstable, and there is good evidence that investors are not currently expecting similar market risk for the period a stay-out premium would be in effect.

The following chart plots the monthly spread between three and one-year Treasury Notes for the five years through April 2013:



It is obvious these spreads are not randomly distributed over time, but rise and fall with changes in investor perceptions about market risk. It is instructive to compare the behavior of the yield spread with the volatility of the S&P 500 as measured by the VIX index:

Both the Treasury yield spread between three and one-year Treasury Notes, and the VIX peaked sharply in 2008 and 2009, and again in late 2011, but the overall trend has been downward. Fundamentally, the problem with using a long period average, like five years, is that market risk is not normally distributed over time. Approximately 95 percent of the time, the VIX index is below 32; about 5 percent of the time, market volatility rises dramatically, ranging anywhere from 33 to over 70, as measured by the VIX index. Unless we happen to be trying to estimate a stay-out premium during such unusual periods of high market risk, we should not use Treasury yield spreads from such periods to determine a stay-out premium appropriate for more normal periods of market risk.

Q. Have you calculated a stay-out premium that would be more appropriate for normal periods of market risk?

A. Based on the VIX chart above, the period since January 2010 has been one with a pattern of more typical distribution in market volatility. There were a couple of brief periods when VIX was above 30, but none like in 2008 when it reached 70 or more. Were we to base the stay-out premium on one-half the average monthly spread between three and one-year Treasury Notes since January 2010, the stay-out premium would be 0.25 percent, or 25 basis points.

I would point out that this is still high relative to what a stay-out premium would be based on current market conditions. Presently, VIX is below its long-term average, indicating a period of lower than usual market volatility. A stay-out premium based on the recent trend in the spread between three and one-year

Treasury Note yields (0.15 percent, based on the trend line shown in the figure above), would result in a stay-out premium of 0.075 percent, or 7.5 basis points.

Q. Is that not unreasonably low?

A. No, not when you consider that capital costs are at historical lows at the present time. The methodology under discussion for determining the stay-out premium will be affected by the shape of the Treasury yield curve. When capital costs are high, the curve will be steeper, and the spread between three and one-year Treasury note yields will be greater. When capital costs are low, the yield curve will be flatter, and the spread between three and one-year Treasury note yields will be less. The latter more aptly describes current market conditions.

Q. Please summarize your conclusions regarding an appropriate stay-out premium.

A. I've suggested a range of premiums based upon different assumptions about how market conditions affect the calculation of a stay-out premium. At the upper end, we have a stay-out premium of 30 basis points, using the Commission's current method. I have suggested that this may be a bit high because it includes the unusually high market volatility of 2008 and 2009. Using data only since January 2010, the stay-out premium would be 25 basis points. This would be an appropriate stay-out premium for a range of normal market variation in investor perceptions of risk. At the low end of the range, I've calculated a stay-out premium that I believe reflects actual market conditions and investor perceptions of risk at the present time. If the Commission decides that the stay-out premium should reflect a range of normal market variation or volatility, then the appropriate risk premium would be 25 basis points. But my recommendation, reflecting what I think is a proper relationship with the way we determine cost of equity using current investor expectations, would be a lower stay-out premium of 7.5 basis points.

VII. ANALYSIS OF COMPANY TESTIMONY ON COST OF CAPITAL AND RATE OF RETURN

Q. Please briefly describe how the Company's witness estimates Con Edison's proposed cost of equity.

A. Mr. Hevert recommends a rate of return on equity of 10.35 percent based on DCF and CAPM methods. Using both two and three-stage DCF models, he estimates an average DCF cost of equity of 10.35 percent. Using the traditional and zero-beta CAPM models, he estimates an average CAPM cost of equity of 10.26 percent. Using the 2/3 and 1/3 weights, the resulting cost of equity would be 10.32 percent. He adds an additional three basis points for flotation cost to derive a recommended return on equity of 10.35 percent.

Q. Mr. Hevert uses the same methods you use to estimate the cost of equity. Why are his results so much higher than yours?

A. Mr. Hevert utilizes inputs that overstate investor expectations and thus overstate the required rate of return. With respect to the DCF method, while there will often be various minor differences in the assumptions employed by different witnesses, differences of the magnitude we see here between my estimate and

Mr. Hevert's are usually the result of just one or two critical assumptions. Rather than become sidetracked on distinctions without a difference it is more helpful to identify the key critical differences. In this case, it is clear to me that the critical difference is in the way Mr. Hevert and I estimate *long-term* growth in the two and three-stage DCF models. For instance, in Mr. Hevert's three-stage DCF model, he uses a long-term growth rate of 5.79 percent; in my three-stage DCF model, the long-term growth rate is 4.32 percent. Similar differences in how we estimate long-term growth also underlie the difference in results we obtain using the two-stage DCF model.

Mr. Hevert uses an estimate of long-term growth in his two- and three-stage models based upon an estimate of long-term growth in GDP (Gross Domestic Product). While GDP growth is often used in multiple stage DCF models, it is almost *never* appropriate to use an estimate of GDP growth as an estimate of long-term growth for *a public utility*. It is *impossible* for a typical public utility to have a long-term growth rate equal to the long-term growth rate in GDP.

Q. Please explain why it is impossible for a typical public utility to have a long-term growth rate equal to the long-term growth rate in GDP.

A. Long-term growth in GDP will be determined in large part by the earned returns on equity and earnings retention rates of unregulated companies. Unregulated companies typically have a life cycle and financial characteristics completely different from the typical regulated public utility. During the early stages of the life cycle of a typical unregulated company, the company will grow rapidly, paying little or no dividend to its investors and reinvesting (retaining) all of its earnings to fuel this period of rapid growth. In time, it begins to pay a dividend, and to adopt a dividend payout ratio and earnings retention rate more typical of the unregulated sector of the economy. Few unregulated firms will ever adopt long-term dividend payout ratios and earnings retention rates that are common among regulated public utilities. As illustration of this, according to the data in Mr. Hevert's Exhibit ____ (RBH-5), over 87 percent of the companies in the S&P 500 have dividend yields below 4 percent, and the median dividend yield for those companies is approximately 1.6 percent. Clearly the S&P 500, and the market as a whole, is dominated by companies which have higher earnings retention rates than the typical public utility. To the extent that these unregulated companies drive the expected rate of growth in GDP, the expected rate of growth in GDP will always exceed the long-term growth experienced by a regulated public utility.

Differences with respect to earnings retention between unregulated companies and regulated public utilities are only part of the reason why the long-term growth of a public utility can *never* equal the long-term rate of growth in GDP. Just as important are differences in returns on equity. Utilities are less risky than the market as a whole. This is unequivocal from the consistently lower betas we see for public utilities. If regulation is effective, then utilities will consistently earn somewhat lower returns on equity than is typically earned by unregulated companies. When you combine lower expected returns on equity with higher dividend payout ratios, it is impossible for the long-term growth of a normal public utility to equal the long-term growth of GDP.

This can be demonstrated further with some simple numerical analysis. Mr. Hevert's long-term growth rate based on GDP is 5.79 percent. In my two and three-stage DCF models, the projected long-term earnings retention rate is 0.39. Ignoring an "sv" component (which, as I argued above, is appropriate), with a long-term earnings retention rate of 0.39 public utilities would have to earn a return on equity of 14.84 to produce a growth rate of 5.79 percent. That is, using the "b x r" formula we would need "0.39 x 14.84" to produce a growth rate of 5.79 percent. Implicitly Mr. Hevert is projecting a long-term return on equity for public utilities of nearly 15 percent. Without that kind of return, there is no way for public utilities to produce a growth rate close to the rate of growth in GDP.

Therefore, Mr. Hevert's long-term growth rate based on an estimate of growth in GDP requires one of two equally implausible assumptions. It either requires that public utilities earn a higher return on equity than unregulated companies or it requires public utilities to have an earnings retention rate that far exceeds the norm for public utilities. Since neither of these conditions is likely or even plausible, Mr. Hevert's long-term GDP growth rate is completely inappropriate for any kind of DCF analysis for Con Edison or any other typical public utility. Thus the results of his DCF analyses should be rejected.

Q. Do you have any other observations about Mr. Hevert's DCF models?

A. His three-stage DCF model appears to be a variation of a spreadsheet model I developed and have been using in testimony since some time in the 1990's. I developed the model to emulate the Merrill Lynch "Dividend Discount Model" as described in William Sharpe's *Investments*, Third Edition (1985), pp. 428-430. My development of this model in spreadsheet form roughly coincides in time with the Commission's development of the generic financing methodology. At that time I was working on cases before the Federal Energy Regulatory Commission ("FERC") and, like the New York Commission, the FERC was considering multi-stage DCF models as alternatives to the more limited constant growth DCF approach.

As noted earlier, where two- and three-stage DCF models employ a consistent set of assumptions they will generate comparable results. Thus, I disagree with Mr. Hevert's assertion that the three-stage DCF model will "provide a more reasonable means of estimating the Company's ROE than the Commission's preferred two-stage model" (Hevert Testimony, Page 24, Lines 1-3). Even Mr. Hevert's own results belie this assertion and demonstrate that the two approaches produce comparable results when used with consistent inputs: his preferred three-stage DCF analysis yielded a mean ROE of 10.32 percent, while his two-stage DCF analysis yielded a mean ROE of 10.39 percent. This is a small difference and is hardly evidence that one method produces more reasonable results than the other. I would argue that in Mr. Hevert's hands both models have produced unreasonable results. That is not a fault of the models. It is the result of his inappropriate use of an estimate of long-term growth in GDP as his long-term dividend growth rate for the proxy sample.

Q. How do you explain the difference between your CAPM results and Mr. Hevert's?

A. This is a direct result of Mr. Hevert's use of a completely unrealistic estimate of the market risk premium. As I testified earlier, it is extremely unlikely that the market risk premium exceeds the historical earned risk premium of 6.7 percent, and is something less than this. Yet, Mr. Hevert calculates a market risk premium of 10.15 percent or 10.14 percent depending on the source of data employed. A market risk premium of that magnitude is out of the realm of possibility given current market conditions and expectations. Given this Mr. Hevert's CAPM estimate of the cost of equity is unrealistically high and should not be used in developing Con Edison's return on equity.

Q. Does that complete your Direct Testimony?

A. Yes, it does.