Exhibit No.:	
Issue:	Fair Rate of Return
Witness:	Pauline M. Ahern
Type of Exhibit:	Rebuttal Testimony
Sponsoring Party:	Laclede Gas Company dba Missouri Gas Energy
Case No.:	GR-2014-0007
Date Testimony Prepared:	March 4, 2014

MISSOURI GAS ENERGY

CASE NO. GR-2014-0007

REBUTTAL TESTIMONY OF

PAULINE M. AHERN, CRRA
PRINCIPAL
AUS CONSULTANTS

MARCH 2014

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Introduction

Q. PLEASE STATE YOUR NAME, OCCUPATION AND BUSINESS ADDRESS.

A. My name is Pauline M. Ahern and I am a Principal of AUS Consultants. My business address is 155 Gaither Drive, Suite A, Mt. Laurel, New Jersey 08054.

Q. ARE YOU THE SAME PAULINE M. AHERN WHO PREVIOUSLY SUBMITTED PREPARED DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes, I am.

Q. Have you prepared schedules which support your rebuttal testimony?

A. Yes, I have. They have been marked for identification as Schedules PMA-10 through PMA- 20.

Purpose

Q. WHAT IS THE PURPOSE OF THIS TESTIMONY?

A. The purpose of this testimony is to rebut certain aspects of the Missouri Public Service Commission ("MOPSC" or "the Commission") Staff Report – Cost of Service ("Staff Report", "Staff Witness Zephania Marevangepo"), as well as the direct testimony of Mr. Michael P. Gorman, Witness for the Office of Public Counsel ("OPC"). Specifically, I will address Staff's comments relative to the appropriate debt cost rate for MGE; its application of the Discounted Cash Flow ("DCF") Model and Capital Asset Pricing Model ("CAPM"). Relative to the direct testimony of Mr. Gorman, I will address the development of his proposed capital structure ratios, his applications of the DCF, Risk Premium Model ("RPM") and CAPM.

Summary

Q. PLEASE BRIEFLY SUMMARIZE YOUR REBUTTAL TESTIMONY.

A. My rebuttal testimony addresses Staff's use of an inappropriate debt cost rate for ratemaking purposes for Missouri Gas Energy ("MGE" or "the Company") and describes a number of errors causing Staff's recommended common equity cost rate to be well below any reasonable range for MGE because:

- Staff erroneously recommends a marginal debt cost rate, i.e., the composite cost of the debt issued to acquire MGE.
- Staff erroneously relies primarily upon the DCF model to arrive at its recommended common equity cost rate despite the Commission's consideration of the results of other cost of common equity models. Staff uses, albeit incorrectly, the CAPM model but only as a check on its flawed and understated recommendation. A wealth of academic literature supports the use of multiple cost of common equity models in formulating their required rates of return.
- Staff's test of reasonableness, i.e., its CAPM analysis, is flawed.
- Staff erroneously relies upon an ad hoc "rule of thumb" reasonable test on its common equity cost rate which does not rely upon prospective bond yields and relies upon a single ten-year-old source of equity risk premium.
- Staff's recommended range of common equity cost rate is not consistent with the expected currently authorized returns on book common equity for Staff's proxy group of gas distribution companies.

My rebuttal testimony also describes a number of errors causing OPC's recommended overall rate of return to be well below any reasonable cost rate for MGE because:

- OPC's allocation of goodwill to the Laclede Group's ("LG" or "the Parent") and Laclede Gas Company's ("Laclede Gas") capital structure is incorrect; and
- OPC's applications of the DCF, RPM and CAPM are flawed, leading to an understatement of its recommended return on common equity recommendation.

TESTIMONY OF MOPSC STAFF WITNESS ZEPHANIA MAREVANGEPO

Long-Term Debt Cost Rate

Q. STAFF'S RECOMMENDED LONG-TERM DEBT COST RATE IS 3.12%, THE EMBEDDED COST OF THE LONG-TERM DEBT USED TO ACQUIRE MGE. PLEASE COMMENT.

A. Staff recommends the use of the consolidated capital structure of LG at September 30, 2013 for MGE for ratemaking purposes, but does not recommend the embedded cost of debt of LG as well. This mismatch serves to unnecessarily lower Staff's recommended overall rate of return. Staff has correctly used Laclede Gas's embedded cost of debt historically for ratemaking purposes for Laclede Gas and should continue to do so for MGE in this case. MGE is owned by Laclede Gas, which in turn is a subsidiary of LG. Staff's use of the marginal cost of debt, i.e., the composite 3.12% associated with the debt issued to acquire MGE also violates both financial and ratemaking theory. It does so because it is incorrect to use the cost of only a portion of the debt presumed to be financing MGE's jurisdictional rate base, i.e., LG's long-term debt ratio and apply that debt cost rate to the debt financed portion of MGE's debt cost rate.

Moreover, the cash flows generated by MGE will be used to pay all of Laclede Gas's bond investors, not only the bonds associated with the MGE acquisition. In other words, the 4.16% embedded debt cost rate represents the contractual cost of debt which

must be serviced and paid. Hence, the appropriate long-term debt cost rate to use to set MGE's rates is 4.16%, which is sponsored by Company Witness Glenn W. Buck.

Q. DOES THE 4.16% LONG-TERM DEBT COST RATE NOW SPONSORED BY MR. BUCK TAKE INTO ACCOUNT THE LOWER COST DEBT ASSOCIATED WITH THE MGE ACQUISITION?

A. Yes. The embedded cost of debt for LG declined from 5.59% (as of March 2013) to 4.35%, as of September 2013, mostly due to the inclusion of lower cost debt associated with the MGE acquisition debt financing and related interest rate swaps as discussed in Mr. Buck's direct testimony at page 3, lines 12-16. I understand that this rate has further decreased to 4.16% as of December 2013, as reflected on Mr. Buck's Rebuttal Schedule GWB-2.

Q. AT PAGE 19, LINES 27-28 OF THE STAFF REPORT, STAFF JUSTIFIES ITS USE OF A 3.12% LONG-TERM DEBT COST RATE FOR MGE IN ORDER "TO ENSURE AN EVEN SHARING OF THE LOWER COST ACQUISITION DEBT COST BETWEEN LACLEDE GAS AND MGE CUSTOMERS…" DO YOU AGREE WITH THAT STATEMENT?

A. No. If anything, using the 3.12% cost of debt for MGE allocates an artificially low cost of debt to only one utility. The only way to share the entire cost of debt between the Laclede Gas customers and MGE customers would be to use the embedded long-term debt cost of the entire company. That was the method used in last year's Laclede Gas rate case and it is the method that should be used here. To use only the 3.12% cost of debt for MGE results in inconsistent ratemaking for MGE and Laclede Gas, which increases regulatory uncertainty for investors.

Common Equity Cost Rate

Discounted Cash Flow Model

Q. STAFF'S RANGE OF RECOMMENDED COMMON EQUITY COST RATE, 7.90% - 8.90%, WITH A MIDPOINT OF 8.40% IS BASED EXCLUSIVELY UPON A DCF ANALYSIS, NOTWITHSTANDING ITS USE OF THE CAPM AS A CHECK. PLEASE COMMENT.

A. Staff's recommended range of common equity cost rates 7.90% - 8.90% is woefully inadequate for use in setting rates. In addition, as stated in my direct testimony at page 6, lines 15 – 19, "[j]ust as the use of the of the market data for the proxy group adds reliability to the informed expert judgment used in arriving at a recommended common equity cost rate, the use of multiple common equity cost rate models also adds reliability when arriving at a recommended common equity cost rate." This is another way of saying that sampling error from the application of a single cost of common equity model, e.g., the DCF, can be reduced through the use of multiple models.

The DCF model utilized by Staff is market-based since market prices are employed in its application. Therefore, it is based upon the EMH which is the foundation of modern investment theory, first pioneered by Eugene F. Fama[1] in 1970. An efficient market is one in which security prices reflect all relevant information all the time. This implies that prices adjust instantaneously to new information, thus reflecting the intrinsic fundamental economic value of a security.[2]

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[1] Eugene F. Fama, "Efficient Capital Markets: A Review of Theory and Empirical Work" (Journal of Finance, May 1970) 383-417.

[2] Eugene F. Brigham, Financial Management – Theory & Practice, 5th Edition (The Dryden Press, 1989) 225.

The semistrong form of the EMH, which asserts that all publicly available information is fully reflected in securities prices, i.e., fundamental analysis cannot "outperform the market", is generally held to be true because the use of insider information often enables investors to "outperform the market" and earn excessive returns. This means that all perceived risks are taken into account by investors in the prices they pay for securities. Investors are thus aware of all publicly-available information, including bond ratings; discussions about companies by bond rating agencies and investment analysts; as well as the various cost of common equity methodologies ("models") discussed in the financial literature. Hence, no single common equity cost rate model should be relied upon exclusively in determining a cost rate of common equity and that the results of multiple cost of common equity models should be taken into account.

Q. DO YOU HAVE FURTHER ACADEMIC SUPPORT FOR THE NEED TO RELY UPON MORE THAN ONE COST OF COMMON EQUITY MODEL IN ARRIVING AT A RECOMMENDED COMMON EQUITY COST RATE?

A. Yes. For example, Phillips[3] states:

> Since regulation establishes a level of authorized earnings which, in turn, implicitly influences dividends per share, estimation of the growth rate from such data is an inherently circular process. For these reasons, the DCF model "suggests a degree of precision which is in fact not present" and leaves "wide room for controversy and argument about the level of k". (italics added) (p. 396)

* * *

[3] Charles F. Phillips, Jr., The Regulation of Public Utilities-Theory and Practice (Public Utility Reports, Inc., 1993) 396, 398.

> Despite the difficulty of measuring relative risk, the comparable earnings standard is no harder to apply than is the market-determined standard. The DCF method, to illustrate, requires a subjective determination of the growth rate the market is contemplating. Moreover, as Leventhal has argued: 'Unless the utility is permitted to earn a return comparable to that available elsewhere on similar risk, it will not be able in the long run to attract capital.' (italics added) (p. 398)

Also, Morin[4] states:

> Each methodology requires the exercise of considerable judgment on the reasonableness of the assumptions underlying the methodology and on the reasonableness of the proxies used to validate a theory. The inability of the DCF model to account for changes in relative market valuation, discussed below, is a vivid example of the potential shortcomings of the DCF model when applied to a given company. Similarly, the inability of the CAPM to account for variables that affect security returns other than beta tarnishes its use. (italics added)

> No one individual method provides the necessary level of precision for determining a fair return, but each method provides useful evidence to facilitate the exercise of an informed judgment. Reliance on any single method or preset formula is inappropriate when dealing with investor expectations because of possible measurement difficulties and vagaries in individual companies' market data. (Morin, p. 428)

* * *

> The financial literature supports the use of multiple methods. Professor Eugene Brigham, a widely respected scholar and finance academician, asserts:[1](footnote omitted)
>
> Three methods typically are used: (1) the Capital Asset Pricing Model (CAPM), (2) the discounted cash flow (DCF) method, and (3) the bond-yield-plus-risk-premium approach. These methods are not mutually exclusive – no method dominates the others, and all are subject to error when used in practice. Therefore, when faced with the task of estimating a company's cost of equity, we generally use all three methods and then choose among them on the basis of our confidence in the data used for each in the specific case at hand.

[4] Roger A. Morin, New Regulatory Finance (Public Utility Reports, Inc., 2006) 428-431.

Another prominent finance scholar, Professor Stewart Myers, in an early pioneering article on regulatory finance, stated:[2](footnote omitted)

> Use more than one model when you can. Because estimating the opportunity cost of capital is difficult, only a fool throws away useful information. That means you should not use any one model or measure mechanically and exclusively. Beta is helpful as one tool in a kit, to be used in parallel with DCF models or other techniques for interpreting capital market data.

> Reliance on multiple tests recognizes that no single methodology produces a precise definitive estimate of the cost of equity. As stated in Bonbright, Danielsen, and Kamerschen (1988), 'no single or group test or technique is conclusive.' Only a fool discards relevant evidence. (**italics in original**) (Morin, p. 430)

* * *

> While it is certainly appropriate to use the DCF methodology to estimate the cost of equity, there is no proof that the DCF produces a more accurate estimate of the cost of equity than other methodologies. Sole reliance on the DCF model ignores the capital market evidence and financial theory formalized in the CAPM and other risk premium methods. The DCF model is one of many tools to be employed in conjunction with other methods to estimate the cost of equity. It is not a superior methodology that supplants other financial theory and market evidence. The broad usage of the DCF methodology in regulatory proceedings in contrast to its virtual disappearance in academic textbooks does not make it superior to other methods. The same is true of the Risk Premium and CAPM methodologies. (italics added) (Morin, p. 431)

Brigham and Gapenski[5] state:

> In practical work, it is often best to use all three methods – CAPM, bond yield plus risk premium, and DCF – and then apply judgment when the methods produce different results. People experienced in estimating equity capital costs recognize that both careful analysis and some very fine judgments are required. It would be nice to pretend that these judgments are unnecessary and to specify an easy, precise way of determining the exact cost of equity capital. Unfortunately, this is not possible. Finance is in large

[5] Eugene F. Brigham and Louis C. Gapenski, Financial Management – Theory and Practice 4th Edition, (The Dryden Press, 1985) 256.

> part a matter of judgment, and we simply must face this fact. (italics in original)
>
> Finally, Brigham and Daves[6] reiterate Brigham and Gapenski's comments when they state:
>
> Recent surveys found that the CAPM approach is by far the most widely used method. Although most firms use more than one method, almost 74 percent of respondents in one survey, and 85 percent in the other, used the CAPM.[12] (footnote omitted)
>
> * * *
>
> Approximately 16 percent now use the DCF approach, down from 31 percent in 1982. The bond-yield-plus-risk-premium is used primarily by companies that are not publicly traded.
>
> People experienced in estimating the cost of equity recognize that both careful analysis and sound judgment are required. It would be nice to pretend that judgment is unnecessary and to specify an easy, precise way of determining the exact cost of equity capital. Unfortunately, this is not possible – finance is in large part a matter of judgment, and we simply must face this fact.

In view of the foregoing, it is clear that investors are aware of all of the models available for use in determining common equity cost rate. The EMH requires the assumption that, collectively, investors use them all. Therefore, Staff's exclusive reliance upon the DCF model, notwithstanding its use of the CAPM as a check, is at odds with the very foundation, i.e., the EMH, upon which the DCF is predicated.

Q. PLEASE COMMENT UPON STAFF'S ESTIMATION OF THE GROWTH COMPONENT FOR ITS DCF ANALYSIS.

A. On page 22, lines 2 - 11 of the Staff Report, Staff discusses its use of historical growth in dividends per share (DPS), earnings per share (EPS), book value per share (BVPS) as

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[6] Eugene F. Brigham and Phillip R. Daves, Intermediate Financial Management, (Thomson-Southwestern, 2007) 332-333.

well as projected growth in DPS, EPS, and BVPS. More appropriately, Staff should have relied exclusively upon security analysts' forecasts of EPS growth. Security analysts' forecasts take into account historical information as well as all current information likely to impact the future, which is critical since both cost of capital and ratemaking are prospective. In addition, Myron Gordon, who first introduced the DCF model adapted for utility ratemaking, came to recognize long after his book, The Cost of Capital to a Public Utility, was published in 1974, that the growth component of his original "Gordon Model" which relied upon the sustainable growth method had a serious limitation. Dr. Gordon, in a presentation on March 27, 1990 (some 16 years after the publication of his 1974 book), before the Institute for Quantitative Research In Finance, in Palm Beach, Florida, entitled, The Pricing of Common Stocks, stated that analysts' growth rate projections were superior to the sustainable growth method:

> The most serious limitation of the Gordon Model is the assumption that the dividend expectation can be represented with just two parameters, D and br … We have seen that earnings and growth estimates by security analysts were found by Malkiel and Cragg to be superior to data obtained from financial statements for the explanation of variation in price among common stocks. That is, better estimates are obtained for the coefficient of the various explanatory variables. …*estimates by security analysts available from sources such as IBES are far superior to the data available to Malkiel and Cragg. Secondly, the estimates by security analysts must be superior to the estimates derived solely from financial statements*. (italics added)

Also, Morin notes[7]:

> Because of the dominance of institutional investors and their influence on individual investors, analysts' forecasts of long-run growth rates provide a sound basis for estimating required returns. Financial analysts exert a strong influence on the expectations of many investors who do not possess the resources to make their own forecasts, that is, they are a cause of g. The accuracy of these forecasts in the sense of whether they turn out to be

[7] Morin 298.

> correct is not at issue here, as long as they reflect widely held expectations. As long as the forecasts are typical and/or influential in that they are consistent with current stock price levels, they are relevant. The use of analysts' forecasts in the DCF model is sometimes denounced on the grounds that it is difficult to forecast earnings and dividends for only one year, let alone for longer time periods. This objection is unfounded, however, because it is present investor expectations that are being priced; it is the consensus forecast that is embedded in price and therefore in required return, and not the future as it will turn out to be.

Published studies in the academic literature demonstrate that growth forecasts made by security analysts represent an appropriate source of DCF growth rates, are reasonable indicators of investor expectations and are more accurate than forecasts based on historical growth. These studies show that investors rely on analysts' forecasts to a greater extent than on historic data only.

Studies performed by Cragg and Malkiel[8] as mentioned by Gordon, demonstrate that analysts' forecasts are superior to historical growth rate extrapolations. While some question the accuracy of analysts' forecasts of EPS growth, it does not really matter what the level of accuracy of those analysts' forecasts is well after the fact. What is important is that they influence investors and hence the market prices they pay.

As discussed above, the DCF is based upon the EMH. Therefore, investors are aware of all publicly-available information, including the many available security analysts' earnings growth forecasts and the academic literature that supports the exclusive use of those forecasts in DCF analyses.

[8] John G. Cragg and Burton G. Malkiel Expectations and the Structure of Share Prices (University of Chicago Press, 1982) Chapter 4 (Ahern Workpaper 13).

Q. WHAT WOULD STAFF'S DCF RESULTS HAVE BEEN IF STAFF HAD PROPERLY RELIED UPON SECURITY ANALYSTS' PROJECTED GROWTH IN EPS IN ITS DCF ANALYSIS?

A. As shown on Schedule PMA-10, had Staff relied upon security analysts' projected growth in EPS, a range of DCF cost rates of 7.90%-11.53%, with a midpoint of 9.71% results which is approximately equivalent to MGE's requested return on common equity of 9.7% in this case. The average projected EPS growth rates range from 4.00% - 7.63%, and when added to Staff's projected dividend yield of 3.90%, results in a range of DCF cost rate of 7.90% - 11.53%, with a midpoint of 9.71%. A DCF cost rate of 9.71% clearly demonstrates that Staff's range of DCF results, ranging from 7.90% - 8.90% are understated, especially since the DCF has a tendency to understate investor required return when market to book ratios exceed 100% as discussed in my direct testimony at page 17, line 16 through page 23, line 19.

Q. PLEASE COMMENT UPON STAFF'S ASSERTION THAT "IT MAKES LOGICAL SENSE THAT UTILITIES WILL GROW AT A RATE LESS THAN THAT OF NOMINAL GDP GROWTH" AS IT STATES ON LINES 24 AND 25 ON PAGE 22 OF THE STAFF REPORT.

A. Based upon a review of the growth in value added by industry from 2004 – 2012 to growth nominal Gross Domestic Product ("GDP") for the U.S. as a whole, this statement is incorrect. Schedule PMA-11 presents Value Added by Industry to U.S. GDP for the years 2004 – 2012 from the Bureau of Economic Analysis ("BEA"). Growth in nominal U.S. GDP for 2011-2012 was 4.04% while a negative 2.82% for the Utilities sector. In contrast, long-term growth in nominal U.S. GDP for 2004-2012 was also 4.04% while

5.79% for the Utilities sector. Hence, Staff is wrong in its conclusion that "a projected long-term, steady-state nominal GDP growth rate should be considered as an upper constraint when testing the reasonableness of growth rates used to estimate the cost of equity for a regulated gas utility" as it states on line 26 on page 22 through line 2 on page 23 of the Staff Report.

Capital Asset Pricing Model

Q. DO YOU HAVE ANY COMMENT REGARDING STAFF'S APPLICATION OF THE CAPM?

A. Yes. Staff's application of the CAPM is flawed in four respects; 1) its choice of a recent historical yield on 30-year U.S. Treasury bond as the risk-free rate; 2) its use of historical market equity risk premiums which are incorrectly derived; 3) its failure to also include a forecasted market equity risk premium; and, 4) its failure to also apply the ECAPM to account for the fact that the Security Market Line ("SML") as described by the traditional CAPM is not as steeply sloped as the predicted SML.

Q. PLEASE COMMENT UPON STAFF'S USE OF A RECENT HISTORICAL YIELD ON 30-YEAR U.S. TREASURY BONDS AS THE RISK-FREE RATE.

A. Both the cost of capital and ratemaking are prospective in nature. The cost of capital, including the cost of common equity, is prospective because it reflects investors' expectations of future capital market conditions including expectations of future interest rate levels, as well as risks. Staff witness Marevangepo has acknowledged this expectational nature of investments throughout his testimony and demonstrated as such by considering security analyst estimates of projected growth in its DCF analysis. Therefore, it is inappropriate to use a recent historical yield as the risk-free rate in a

CAPM analysis. Rather, a prospective yield on 30-year U.S. Treasury bonds should be used. As shown on Schedule PMA-12, at the time of Staff's report, the December 2013 and January 1, 2014 *Blue Chip Financial Forecasts* ("*Blue Chip*") were available, and their estimate for 30-year Treasury securities was 4.46% as derived in Note 2 on Schedule PMA-12. Staff's recommended 3.79% average yield on 30-year U.S. Treasury bonds for the three months ended December 2013 significantly understates the prospective yield and resulting CAPM result.

Q. YOU HAVE STATED THAT STAFF ERRED IN EXCLUSIVELY RELYING UPON HISTORICAL MARKET EQUITY RISK PREMIUMS WHICH WERE INCORRECTLY DERIVED. PLEASE EXPLAIN.

A. Staff's derivation of historical market equity premiums is incorrect for two reasons. First, Staff's arithmetic historical market equity risk premium is incorrectly calculated. Second, Staff also incorrectly relied upon the geometric historical market equity risk premium.

Q. WHY IS STAFF'S ARITHMETIC HISTORICAL MARKET EQUITY RISK PREMIUM INCORRECTLY CALCULATED?

A. Staff's arithmetic historical market equity risk premium of 5.7% is derived from the Ibbotson® SBBI® – 2013 Valuation Yearbook – Market Results for Stocks, Bonds, Bills and Inflation – 1926-2012 (2013 SBBI) as the difference between the arithmetic mean 1926-2012 total return on large company stocks of 11.8% and the arithmetic mean 1926-2012 total return on long-term government bonds of 6.1%. (5.7% = 11.8% - 6.1%).[9] The

[9] Ibbotson SBBI – 2013 Valuation Yearbook – Market Results for Stocks, Bonds, Bills and Inflation 1926-2012 (Morningstar, Inc., 2013) 23.

correct derivation of the annual historical market equity risk premium is the difference between the total return on large company stocks of 11.8% and the arithmetic mean 1926-2012 income return on long-term government bonds of 5.1% which results in a market equity risk premium of 6.7% (6.7% = 11.8% - 5.1%). Regarding the use of the income return and not the total return for Treasury securities in deriving an equity risk premium, 2013 SBBI states[10] :

> Another point to keep in mind when calculating the equity risk premium is that the income return on the appropriate-horizon Treasury security, rather than the total return, is used in the calculation. The total return is comprised of three return components: the income return, the capital appreciation return, and the reinvestment return. The income return is defined as the portion of the total return that results from a periodic cash flow or, in this case, the bond coupon payment. The capital appreciation return results from the price change of a bond over a specific period. Bond prices generally change in reaction to unexpected fluctuations in yields. Reinvestment return is the return on a given month's investment income when reinvested into the same asset class in the subsequent months of the year. The income return is thus used in the estimation of the equity risk premium because it represents the truly riskless portion of the return.[2] (footnote omitted) (emphasis added)

Hence, it is appropriate to use the income return and not the total return on long-term U.S. government bonds when calculating a market equity risk premium. Therefore, the correct derivation of the historical market equity risk premium is the difference between the monthly arithmetic mean 1926-2012 total return on large company stocks, 11.83%, and the monthly arithmetic mean 1926-2012 income return on long-term government bonds, 5.28%, or 6.55%[11], as derived in Note 1 on Schedule PMA-12.

Q. PLEASE DISCUSS STAFF'S USE OF A GEOMETRIC MEAN MARKET RISK PREMIUM FOR 1926-2012.

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[10] Ibbotson 2013 SBBI 55.

[11] Calculated on a monthly basis to be consistent with the derivation of the PRPM™ predicted market equity risk premium using monthly observations.

A. In addition to calculating a CAPM derived common equity cost rate based upon the historical arithmetic mean equity risk premium, albeit, incorrectly derived, Staff also calculated a CAPM derived common equity cost rate using the long-term historical geometric mean equity risk premium. This latter calculation is not a valid means of estimating the cost of capital based upon historical returns.

Only arithmetic mean return rates and yields are appropriate for cost of capital purposes because ex-post (historical) total returns and equity risk premiums differ in size and direction over time, providing insight into the variance and standard deviation of returns. Because the arithmetic mean captures the prospect for variance in returns and equity risk premiums, it provides the valuable insight needed by investors in estimating *risk* in the future when making a current investment. Absent such valuable insight into the potential variance of returns, investors cannot meaningfully evaluate prospective risk. The geometric mean of ex-post equity risk premiums provides no insight into the potential variance of future returns because the geometric mean relates the change over many periods to a constant rate of change, rather than the year-to-year fluctuations, or variance, *critical to risk analysis* and therefore has little or no value to investors seeking to measure risk. Moreover, from a statistical perspective, stock returns and equity risk premiums are randomly generated. Thus, the arithmetic mean is also expectational, as is the cost of capital and ratemaking as noted above.

The arithmetic mean return and not the geometric mean return is appropriate for cost of capital purposes as noted in 2013 SBBI[12]:

> The equity risk premium data presented in this book are arithmetic average risk premiums as opposed to geometric average risk premiums. The

[12] Ibbotson 2013 SBBI 56.

> arithmetic average equity risk premium can be demonstrated to be most appropriate when discounting future cash flows. For use as the expected equity risk premium in either the CAPM or the building block approach, the arithmetic mean or the simple difference of the arithmetic means of stock market returns and riskless rates is the relevant number. This is because both the CAPM and the building block approach are additive models, in which the cost of capital is the sum of its parts. The geometric average is more appropriate for reporting past performance, since it represents the compound average return.
>
> The argument for using the arithmetic average is quite straightforward. In looking at projected cash flows, the equity risk premium that should be employed is the equity risk premium that is expected to actually be incurred over the future time periods. Graph 5-2 shows the realized equity risk premium for each year based on the returns of the S&P 500 and the income return on long-term government bonds. (The actual, observed difference between the return on the stock market and the riskless rate is known as the realized equity risk premium.) There is considerable volatility in the year-by-year statistics. At times the realized equity risk premium is even negative.

As discussed in my direct testimony at page 28, line 19 through page 29, line 14, because historical total returns and equity risk premiums differ in size and direction over time, the arithmetic mean provides insight into the variance and standard deviation of returns, i.e., risk. Thus the prospect for variance, i.e., standard deviation, captured in the arithmetic mean, provides the valuable insight needed by investors and rate of return analysts alike to estimate the expected risk of stocks. Without such insight, investors cannot meaningfully evaluate prospective risk. Because the geometric mean relates the change over many periods to a constant rate of change, the variance, i.e., year-to-year fluctuations, and hence, risk, which is critical to rate of return analysis, is not reflected in geometric mean returns / premiums.

The financial literature is quite clear on this point, that risk is measured by the variability of expected returns, i.e., the probability distribution of returns.[13] Pages 56 through 57 of 2013 SBBI (see Schedule PMA-13) explain in detail why the arithmetic mean is the correct mean to use when estimating the cost of capital.

In addition, Weston and Brigham[14] provide the standard financial textbook definition of the riskiness of an asset when they state:

> The riskiness of an asset is defined in terms of the likely variability of future returns from the asset. (emphasis added**)**

Morin also states[15]:

> The geometric mean answers the question of what constant return you would have to achieve in each year to have your investment growth match the return achieved by the stock market. The arithmetic mean answers the question of what growth rate is the best estimate of the future amount of money that will be produced by continually reinvesting in the stock market. It is the rate of return which, compounded over multiple periods, gives the mean of the probability distribution of ending wealth. (emphasis added)

In addition, Brealey and Myers[16] note:

> The proper uses of arithmetic and compound rates of return from past investments are often misunderstood. . . Thus the arithmetic average of the returns correctly measures the opportunity cost of capital for investments. . . . *Moral*: If the cost of capital is estimated from historical returns or risk premiums, use arithmetic averages, not compound annual rates of return. (italics in original)

As previously discussed, investors gain insight into relative riskiness by analyzing expected future variability. This is accomplished by the use of the arithmetic mean of a

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[13] Brigham (1989) 639.

[14] J. Fred Weston and Eugene F. Brigham Essentials of Managerial Finance Third Edition (The Dryden Press, 1974) 272.

[15] Morin 133.

[16] R.A. Brealey and S.C. Myers, Principles of Corporate Finance Fifth Edition (McGraw-Hill Publications, Inc., 1996) 146-147.

distribution of returns / premiums. Only the arithmetic mean takes into account all of the returns / premiums, hence, providing meaningful insight into the variance and standard deviation of those returns / premiums. Therefore, it is inappropriate to use the geometric mean in a CAPM analysis.

Q. CAN IT BE DEMONSTRATED THAT THE ARITHMETIC MEAN TAKES INTO ACCOUNT ALL OF THE RETURNS AND THEREFORE, THAT THE ARITHMETIC MEAN IS APPROPRIATE TO USE WHEN ESTIMATING THE OPPORTUNITY COST OF CAPITAL IN CONTRAST TO THE GEOMETRIC MEAN?

A. Yes. Pages 1 through 3 of Schedule PMA-13 graphically demonstrate this. Page 1 charts the returns on large company stocks for each and every year, 1926 through 2012 from SBBI 2013. It is clear from looking at the year-to-year variation of these returns, that stock market returns, and hence, equity risk premiums, vary.

The distribution of each and every one of those returns for the entire period from 1926 through 2012 is shown on page 2. There is a clear bell-shaped pattern to the probability distribution of returns, an indication that they are randomly generated and not serially correlated. The arithmetic mean of this distribution of returns considers each and every return in the distribution. In doing so, the arithmetic mean takes into account the standard deviation or likely variance which may be experienced in the future when estimating the rate of return based upon such historical returns. In contrast, page 3 of Schedule PMA-13 demonstrates that when the geometric mean is calculated, only two of the returns are considered, namely the initial and terminal years, which, in this case, are 1926 and 2012. Based upon only those two years, a constant rate of return is calculated

by the geometric average. That constant return, graphically, is represented by a flat line, showing no year-to-year variation, over the entire 1926 to 2012 time period, which is obviously far different from reality, based upon the probability distribution of returns shown on page 2 and demonstrated on page 1.

Consequently, only the arithmetic mean takes the standard deviation of returns which is critical to risk analysis into account. The geometric mean is appropriate only when measuring historical performance and should not be used to estimate the investors required rate of return.

Q. YOU HAVE ALSO STATED THAT STAFF ERRED IN NOT INCLUDING A FORECASTED MARKET EQUITY RISK PREMIUM IN ITS CAPM ANALYSIS. PLEASE EXPLAIN.

A. Staff relied exclusively upon historical market equity risk premiums which is in direct contrast to Staff's use of both historical and projected growth rates in its application of the DCF model. As stated previously, the cost of capital is prospective and while the arithmetic mean of long-term historical stock market returns can provide insight into investors' expectations of stock market returns because the arithmetic mean of historical returns provides investors with the valuable insight needed to estimate future risk, it is also appropriate to use an estimate of the forecasted or projected stock market return. One indication of the forecasted stock market return can be derived using *Value Line Investment Survey*'s ("*Value Line*") 3-5 year median total market price appreciation projections and dividend yield projections as explained in detail on page 38, line 13 through page 39, line 9 of my direct testimony and derived in note 1 on page 2 of Schedule PMA-7. Based upon *Value Line*, a forecasted total market return of 9.22% is

indicated using the same three months, October, November, and December 2013, used by Staff in developing the dividend yield in its DCF analysis. When the average forecasted yield on 30-year U.S. Treasury bonds of 4.46% is subtracted from *Value Line*'s forecasted total market return of 9.22%, a forecasted market equity risk premium of 4.76% results as derived in Note 1 on Schedule PMA-12. Another indication of a forecasted equity risk premium could be derived by using the PRPM™, which I have discussed at pages 24-25, 29, and pages 38-39 of my direct testimony. The projected equity risk premium derived by the PRPM™ for December 2013 is 10.42%. These prospective risk premiums averaged with the historical market equity risk premium of 6.55% as based upon 2013 SBBI, results in a market equity risk premium of 7.24%[17].

Q. YOU HAVE STATED THAT STAFF ALSO FAILED TO APPLY THE ECAPM TO ACCOUNT FOR THE FACT THAT SECURITY MARKET LINE (SML) AS DESCRIBED BY THE TRADITIONAL CAPM IS NOT AS STEEPLY SLOPED AS THE PREDICTED SML. PLEASE COMMENT.

A. As discussed in my direct testimony at page 53, line 25 through page 34, line 2 of my direct testimony, while numerous tests of the CAPM have confirmed its validity, these tests have determined that "the implied intercept term exceeds the risk-free rate and the slope term is less than predicted by the CAPM."[18] These tests have also indicated that the expected return on a security is related to its risk by the following formula:

$$K = RF + 0.25(RM - RF) + 0.75\beta(RM - RF)$$

[17] 7.24% = ((6.55% + 10.42% + 4.76%)/3)
[18] Morin 175.

Some critics of the ECAPM model claim that using adjusted betas in a traditional CAPM amounts to using an ECAPM but such a claim is not valid. Using adjusted betas in a CAPM analysis is not equivalent to the ECAPM. Betas are adjusted because of the regression tendency of betas to converge toward 1.0 over time, i.e., over successive calculations of beta. As discussed previously, numerous studies have determined that the SML described by the CAPM formula at any given moment in time is not as steeply sloped as the predicted SML. In corroboration, Morin[19] states:

> Some have argued that the use of the ECAPM is inconsistent with the use of adjusted betas, such as those supplied by Value Line and Bloomberg. This is because the reason for using the ECAPM is to allow for the tendency of betas to regress toward the mean value of 1.00 over time, and, since Value Line betas are already adjusted for such trend [sic], an ECAPM analysis results in double-counting. This argument is erroneous. Fundamentally, the ECAPM is not an adjustment, increase or decrease, in beta. This is obvious from the fact that the expected return on high beta securities is actually lower than that produced by the CAPM estimate. The ECAPM is a formal recognition that the observed risk-return tradeoff is flatter than predicted by the CAPM based on myriad empirical evidence. The ECAPM and the use of adjusted betas comprised two separate features of asset pricing. Even if a company's beta is estimated accurately, the CAPM still understates the return for low-beta stocks. Even if the ECAPM is used, the return for low-beta securities is understated if the betas are understated. Referring back to Figure 6-1, the ECAPM is a return (vertical axis) adjustment and not a beta (horizontal axis) adjustment. Both adjustments are necessary.

Moreover, the slope of the SML should not be confused with beta. As noted by Eugene F. Brigham, finance professor emeritus and the author of many financial textbooks states[20] :

> The slope of the SML reflects the degree of risk aversion in the economy – the greater the average investor's aversion to risk, then (1) the steeper is the slope of the line, (2) the greater is the risk premium for any risky asset, and (3) the higher is the required rate of return on risky assets.

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[19] Morin 191.

[20] Brigham, Eugene F., Financial Management – Theory and Practice, 4th Ed. (The Dryden Press, 1985) 203.

> Students sometimes confuse beta with the slope of the SML. This is a mistake. As we saw earlier in connection with Figure 6-8, and as is developed further in Appendix 6A, beta does represent the slope of a line, but not the Security Market Line. This confusion arises partly because the SML equation is generally written, in this book and throughout the finance literature, as ki = RF + bi(kM – RF), and in this form bi looks like the slope coefficient and (kM – RF) the variable. It would perhaps be less confusing if the second term were written (kM – RF)bi, but this is not generally done.

Q. WHAT WOULD STAFF'S CAPM RESULTS HAVE BEEN HAD STAFF RELIED UPON A CORRECTLY-DERIVED HISTORICAL MARKET EQUITY RISK PREMIUM, INCLUDED A FORECASTED MARKET EQUITY RISK PREMIUM, A FORECASTED RISK-FREE RATE AS WELL AS THE ECAPM?

A. In Column 6 on Schedule PMA-12, shows the corrected results of Staff's CAPM analysis. The traditional CAPM result of 9.56% and the ECAPM result of 10.09% result in a indicated common equity cost rate based on the CAPM of 9.83%. Such a cost rate does not corroborate Staff's recommended range of common equity cost rates of 7.90% - 8.90%.

Recommended Common Equity Cost Rate

Q. PLEASE DISCUSS STAFF'S RECOMMENDED COMMON EQUITY COST RATE RANGE OF 7.90% - 8.90%, WITH A MIDPOINT OF 8.40%.

A. Staff's recommended common equity cost rate range of 7.90% - 8.90% is inadequate. Such a cost rate range provides an insufficient achieved return on the book common equity of MGE.

Q. PLEASE RESPOND TO THE COMMENTS MADE BY STAFF REGARDING THE RECENT AUTHORIZED COMMON EQUITY RETURNS OF AMEREN UE AND KANSAS CITY POWER & LIGHT CO. (KCP&L) AND THE APPLICABILITY OF THOSE DECISIONS TO THIS CASE.

A. The standard of the fair rate of return is based on *Hope*,[21] which Staff cited on page 7, lines 6-17 of its Report:

> By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks.

This means that the rate of return set in this proceeding should be set based upon the expected investor return of the proxy group of natural gas distribution companies, plus or minus any relative risk differences between MGE and the proxy group, not based upon prior decisions relative to electric operations. Staff implicitly agrees that Ameren UE and KCP&L are not "enterprises having corresponding risks" because it excluded Ameren and Great Plains Energy from its proxy group.

Q. STAFF ALSO STATES THAT "THE INVESTMENT COMMUNITY GENERALLY VIEWS GAS DISTRIBUTION COMPANIES AS LESS RISKY THAN ELECTRIC UTILITY COMPANIES." PLEASE RESPOND.

A. Referring to the *Hope* fair rate of return standard, as long as the rate of return on common equity for MGE is based upon enterprises with corresponding risks adjusted for relative risk, it satisfies *Hope*. Comparison of the relative risk between natural gas distribution companies and electric companies are not of any relevance in the determination of return on common equity for MGE.

Q. PLEASE RESPOND TO STAFF'S REASONABLENESS TESTS BASED ON THEIR "RULE OF THUMB" METHOD AND AVERAGE AUTHORIZED

[21] Federal Power Commission v. Hope Natural Gas Co., 320 U.S. 591 (1944).

RETURNS DISCUSSED ON PAGE 31, LINE 15 THROUGH PAGE 32, LINE 3 OF THE STAFF REPORT.

A. After analyzing Staff's "rule of thumb" reasonableness test, it is clear that Staff performs an ad-hoc risk premium analysis as a check of their DCF results. In this ad-hoc analysis, Staff does not consider prospective bond yields and relies upon only one source of an equity risk premium which is over ten years old. Schedule PMA-14 shows the results of an appropriate risk premium analysis based upon Staff's proxy group using the same methodology as my RPM analysis from my direct testimony. It indicates that properly applied RPM results in a 11.97% cost rate.

Staff's review of the average authorized returns reinforces the unreasonableness of their recommendation. Staff cites the average authorized return on common equity for a gas distribution case in 2013 as 9.68% on line 20, page 32 of the Staff Report, almost 130 basis points above the midpoint of Staff's range, 8.40%. Conversely, MGE's requested return on common equity is 9.70%, only 2 basis points higher than the average authorized return on common equity for a gas distribution company in 2013. My recommended return on common equity of 10.25% is only 55 basis points above the average authorized return on common equity for 2013. This "check" actually demonstrates the unreasonableness of Staff's position and the reasonableness of MGE's position relative to the return on common equity.

Q. HOW DOES STAFF'S RECOMMENDED RANGE OF COMMON EQUITY COST RATE OF 7.90% - 8.90% WITH A MIDPOINT OF 8.40% COMPARE WITH THE EXPECTED AND CURRENTLY AUTHORIZED RETURNS ON

COMMON EQUITYS OF ITS PROXY GROUP OF SEVEN GAS DISTRIBUTION COMPANIES?

A. It is far below the level of earnings expected by *Value Line* for the companies in its group of seven comparable gas distribution companies for which *Value Line* publishes a projected return on common equity for the years 2016-2018. The latest (December 6, 2013) *Value Line* Ratings & Reports (Standard Edition) are shown on pages 2-8 of in Schedule PMA-15. Page 1 of Schedule PMA-15 indicates that *Value Line* expects the companies in Staff's proxy group to earn between 9.50% and 14.00% on year-end book common equity over the next 3-5 years averaging, 10.57%. While these forecasts are for earnings on book common equity, it must be remembered that the return on common equity authorized in this proceeding will be applied to the book value of the common equity financed portion of MGE's rate base and will therefore become MGE's opportunity for earnings on book value. In addition, the currently authorized returns on common equity for these same seven natural gas distribution companies is 10.28%.

An opportunity to earn a range of return on book common equity of either Staff's recommended range of 7.90% - 8.90%, or Staff's recommended midpoint of 8.40% is woefully inadequate in comparison with these expected and authorized returns on book common equity of comparable gas distribution companies.

Thus, Staff's recommendation is also inconsistent with the comparability of returns standard enunciated in the *Hope* decision mentioned above. Staff's recommended common equity cost rate range should be rejected by the MOPSC in setting rates for MGE in this proceeding.

Q. BASED UPON THE CORRECTED STAFF DCF AND CAPM DISCUSSED PREVIOUSLY, WHAT WOULD STAFF'S RECOMMENDATION BE ONCE FLOTATION COSTS, THE GREATER FINANCIAL RISK INHERENT IN ITS RECOMMENDED CAPITAL STRUCTURE AND MGE'S GREATER BUSINESS RISKS DUE TO ITS UNIQUE RISKS ARE REFLECTED?

A. As shown on Schedule PMA-10, the corrected Staff DCF is 9.71%, the corrected Staff CAPM is 9.85% as shown on Schedule PMA-12, and the properly applied RPM is 11.97% as shown on Schedule PMA-14. These results average 10.51%, 26 basis points higher than my recommended common equity cost rate of 10.25%. Should the Commission decide to rely only upon the corrected DCF and CAPM results, they average 9.78%, only 8 basis points above the Company's requested 9.70% common equity cost rate. These results highlight the inadequacy and unreasonableness of Staff's recommended range of common equity cost rates, 7.90%-8.90%, with a midpoint of 8.40%. Hence, Staff's recommendation should be rejected.

TESTIMONY OF OPC WITNESS MICHAEL P. GORMAN

Common Equity Cost Rate

Capital Structure Issues

Q. OPC RECOMMENDS A CAPITAL STRUCTURE THAT CONSISTS OF 54.98% LONG-TERM DEBT (LTD) AND 45.02% COMMON EQUITY BASED UPON AN ALLOCATION OF GOODWILL FROM THE MGE ACQUISITION TO COMMON EQUITY. PLEASE COMMENT.

A. OPC's rationale for its allocation of goodwill is flawed and its allocation of the entire amount of goodwill to common equity is incorrect. At pages 11-12 of OPC's testimony, OPC excerpts a portion of LG's 10-K which states:

> Effective September 1, 2013, Laclede Group completed the purchase of substantially all of the assets and liabilities of Missouri gas Energy (MGE), a utility engaged in the distribution of natural gas on a regulated basis in western Missouri, from Southern Union Company (SUG), an affiliate of Energy Transfer Equity, L.P. and Energy Transfer Partners, L.P. The purchase was completed pursuant to the purchase agreement dated December 14, 2012. Under the terms of the purchase agreement, Laclede Group acquired MGE for a purchase price of $975 million. The acquisition was supported through a combination of the issuance of 10.0 million shares of Laclede Group common stock, completed on May 29, 2013, the issuance by Laclede Gas of $450.0 million of first mortgage bonds, completed on august 13, 2013, short-term borrowings and available cash. (emphasis added)

LG booked goodwill of approximately $247.078 million in the transaction, which will not be included in Missouri rates. Traditionally, if goodwill is written down, the full impact of the goodwill impairment would hit the equity portion of the balance sheet. In this case, the goodwill has not been written down nor is expected to be written down in the future and is being excluded for ratemaking purposes. I concur with Staff's recommendation that LG's consolidated capital structure as "a market-observable capital structure . . . is fair and reasonable for purposes of setting MGE's rates." Because there is no indication that the goodwill on the books of either LG and Laclede Gas will be written down, or impaired, there is no rationale to eliminate the goodwill from the capital structure.

Since the acquisition of MGE, which is the source of the goodwill, was financed with both long-term debt and common equity, should the Commission choose to remove the premium from MGE's ratemaking capital structure, the premium should be removed

in the same proportion used to finance the transaction. In addition, since the long-term debt should be removed for determining the ratemaking capital structure ratios, the 3.12% cost rate associated with that debt should be removed as well in determining the debt cost rate. As detailed on Schedule PMA-16, the proper allocation of goodwill to both long-term debt and common equity results in goodwill adjusted capital structures for ratemaking purposes of 45.91% long-term debt, 54.09% common equity for LG and 47.13% long-term debt and 52.87% common equity for Laclede Gas. Both of these capital structures are more equity rich than the capital structure requested by MGE in this proceeding, which includes a common equity ratio of 51.55%. Thus, removing the goodwill in the proper proportions of long-term debt and equity from either LG or Laclede Gas's capital structure, results in increasing the ratemaking common equity ratio for LG to 54.09% from its actual September 30, 2013 common equity ratio of 53.41% and Laclede Gas's from 52.32% at September 30, 2013 to 52.87%.

Discounted Cash Flow Model (DCF)

Q. PLEASE COMMENT UPON OPC'S DISCUSSION OF THE RESULTS OF HIS APPLICATION OF THE CONSTANT GROWTH, OR SINGLE STAGE, DCF MODEL.

A. OPC, as shown on Schedule MPG-5, derived an average constant growth DCF model cost rate of 9.04% and a median of 8.80% for its gas distribution proxy group based upon a long-term sustainable growth rate of 4.82%.

OPC asserts that the maximum long-term sustainable growth rate is approximated by the projected growth in gross domestic product (GDP) of 4.8% on page 23, lines 10-12 of OPC's testimony. OPC also notes that its 4.82% average growth for its constant growth

DCF is approximately the same as the 4.8% growth rate. OPC's conclusion is based upon his flawed contention that "Utilities cannot indefinitely sustain a growth rate of the economy in which they sell services." OPC's rationale is not persuasive. As previously discussed and shown in Schedule PMA-11, growth in the Utilities Sector was 5.79% for the years 2004-2012, exceeding nominal U.S. GDP growth of 4.04% by 175 basis points.

Q. AT LINES 4 THROUGH 12 ON PAGE 26 OF ITS DIRECT TESTIMONY, OPC QUOTES EUGENE F. BRIGHAM AND JOEL F. HOUSTON, IN SUPPORT OF ITS CONTENTION THAT "OVER THE LONG TERM, A COMPANY'S EARNINGS AND DIVIDENDS CANNOT GROW AT A RATE GREATER THAN THE GROWTH RATE OF THE U.S. GDP." PLEASE COMMENT.

A. I do not have a copy of the specific text book cited by OPC. However, the quotation also appears on page 164 of Intermediate Financial Management[22]. In Intermediate Financial Management, the quotation does not end at the conclusion of OPC's citation. The entire paragraph reads:

> The constant growth model is often appropriate for mature companies with a stable history of growth. Expected growth rates vary somewhat among companies, but dividend growth for most mature firms is generally expected to continue to the future at about the same rate as nominal gross domestic product (real GDP plus inflation). On this basis, one might expect the dividends of an average, or "normal," company to grow at a rate of 5 to 8 percent a year. (italics added for emphasis)

Continuing, on pages 165 through 167, the authors provide an example of the application of the non-constant DCF, assuming a normal growth rate of 8% which they identify as "the assumed average for the economy." Thus, assuming that this same information appears in the edition of Fundamentals of Financial Management, from

[22] Brigham and Daves 164-167.

which OPC quotes, although it relied upon the Brigham / Houston quotation to support the use of the growth in nominal GDP for use in a non-constant DCF model, OPC ignored the authors' recommendation of an assumed 8% normal growth rate to be used in the non -constant DCF

Q. ON PAGE 25, LINES 21 - 24, OPC STATES THAT "NOMINAL GDP GROWTH IS A CONSERVATIVE PROXY FOR GAS UTILITY SALES GROWTH, RATE BASE GROWTH, AND EARNINGS GROWTH." PLEASE COMMENT.

A. OPC has provided no empirical evidence that in the third stage of a multi-stage DCF analysis any company, especially the relatively stable and mature utility companies, would grow at the average growth rate of the U.S. economy. The average growth in the U.S. economy is just that, an average. Some companies will grow faster and some will grow more slowly. That the growth in nominal GDP is an average was previously demonstrated on Schedule PMA-11 which shows the nominal GDP for the years 2004-2012 as a whole and by industry. From 2011-2012 and 2004-2012, nominal GDP grew 4.04% on average. In contrast, the construction component of nominal GDP declined 5.51% from 2011 to 2012 and grew a meager 0.10% on average for 2004-2012. Likewise, the utilities component of nominal GDP grew 2.15% from 2011 to 2012 and an average 5.79% for 2004-2012. In addition, it is a mismatch to use five- to ten-years growth in GDP as a proxy either for the years eleven through perpetuity. There is no evidence that a five- to ten-years growth rate in GDP accurately represents the in perpetuity growth rate in GDP.

Hence, there is no valid rationale for undertaking a multi-stage DCF analysis.

Risk Premium Model (RPM)

Q. DO YOU HAVE ANY COMMENTS REGARDING OPC'S RISK PREMIUM ANALYSIS?

A. Yes. My comments center on the time period over which he estimates the equity risk premium and his use of authorized returns to do so.

Q. DO YOU AGREE WITH OPC'S USE OF THE TIME PERIOD 1986 – SEPTEMBER 2013 TO DETERMINE AN EQUITY RISK PREMIUM?

A. No. OPC states on page 30, lines 13-15 of his direct testimony that he relied upon the period 1986 through the September 2013, "because public utility stocks have consistently traded at a premium to book value during that period." He concludes, on lines 17 and 18 on page 28, that "[o]ver this time period, regulatory authorized returns were sufficient to support market prices that at least exceeded book value." Use of such a short time period is especially inappropriate and inconsistent in view of his use of a multi-stage growth DCF model and his emphasis upon long-term sustainable growth. The 2013 SBBI makes it clear that the arbitrary selection of short historical periods is highly suspect and unlikely to be representative of long-term trends in market data. Page 9 of Schedule PMA-13 clearly shows that it is inappropriate to estimate a market equity risk premium over a short period of time. For example on page 11 the 2013 SBBI states:

> The estimate of the equity risk premium depends on the length of the data series studied. A proper estimate of the equity risk premium requires a data series long enough to give a reliable average. . . because an average of the realized equity risk premium is quite volatile when calculated using a short history, using a long series makes it less likely that the analyst can justify any number he or she wants. . .

In addition, as discussed in my direct testimony on page 19, lines 10-19, Bonbright, et al make it very clear that the market prices of the common stocks of public utilities are

influenced by factors which are beyond the direct influence of the regulatory process. In addition, Phillips[23] states:

> Many question the assumption that market price should equal book value, believing that 'the earnings of utilities should be sufficiently high to achieve market-to-book ratios which are consistent with those prevailing for stocks of unregulated companies.'

Schedule PMA-17 demonstrates that there is no relationship between the market-to-book ratios and the earned rates of return on book common equity for the S&P Industrial Index and its successor, the S&P 500 Composite Index over a long period of time. On Schedule PMA-17, I have shown the market-to-book ratios, rates of return on book common equity (earnings/book ratios), annual inflation rates, and the earnings/book ratios net of inflation (real rate of earnings) annually for the years 1947 through 2012. In each and every year, the market-to-book ratios of the S&P Industrial Index equaled or exceeded 1.00 times. In 1949, the only year in which the market-to-book ratio was 1.00 (or 100%), the real rate of earnings on book equity, adjusted for deflation, was 18.1% (16.3% + 1.8%). In contrast, in 1961, when the S&P Industrial Index experienced a market-to-book ratio of 2.01 times, the real rate of earnings on book equity for the Index was only 9.1% (9.8% - 0.7%). In 1997, the preliminary market-to-book ratio for the Index was 5.57 times, while the average real rate of earnings on book equity was 21.6% (23.3% - 1.7%).

This analysis clearly demonstrates that competitive, unregulated companies have never sold below book value, on average, and have sold at book value in only one year

[23] Brigham and Daves 395.

since 1947. The data show that there is no relationship between earnings/book ratios and market-to-book ratios.

Because this lack of a relationship between earnings/book ratios and market-to-book ratios covers a 66-year period, 1947 through 2012, it cannot be validly argued that going forward, a relationship would exist between earnings/book ratios and market-to-book ratios. The analysis shown on Schedule PMA-17, coupled with the supportive academic literature, demonstrate the following:

1. that while regulation is a substitute for marketplace competition, it can influence but not directly control market prices, and, hence, market-to-book ratios; and,
2. that the rates of return investors expect to achieve and which influence their willingness to pay market prices well in excess of book values have no meaningful, direct relationship to rates of earnings on book equity.

Because this lack of relationship between earnings/book ratios and market-to-book ratios covers a period of 66 years, it is not reasonable to assume that a direct relationship will exist between rates of earnings on book common equity and market-to-book ratio into the future. Schedule PMA-17 confirms that while regulation is a substitute for marketplace competition, it has but a limited effect on, but no direct control over the market prices and hence market-to-book ratios of regulated utilities. Thus, no valid conclusion of equity risk premiums can be drawn for the period 1986 to September 2013 because of market-to-book ratios in excess of one.

Q. HAVE YOU PERFORMED A CALCULATION OF A RISK PREMIUM METHOD COMMON EQUITY COST RATE USING THE DATA SHOWN BY OPC ON SCHEDULES (MPG-8) AND (MPG-9)?

A. Yes, I have. That information is contained in Schedules PMA-18 and PMA-19.

Q. PLEASE EXPLAIN SCHEDULE A.

A. In Schedule PMA-18, I have used the indicated risk premiums over Treasury Bond yields shown by OPC at Schedule (MPG-8) and those indicated risk premiums over average A rated utility bond yields as shown on Schedule (MPG-9), over the period 1986 through September 2013. Relying upon averages over such a period of time to establish proper equity risk premiums is incorrect for several reasons. First, for the reasons provided by 2013 SBBI and previously referred to; and secondly, because of a wealth of empirical evidence in the financial literature which confirm an inverse relationship between interest rates and equity risk premiums.[24] Because of the inverse relationship between interest rates and equity risk premiums, I use two different regression analyses based on the data in OPC's Schedules (MPG-8) and (MPG-9) which are shown in Schedule PMA-18.

The first type of regression analysis is shown on pages 1, 2, 5 and 6 of Schedule PMA-18. It is based upon regressing the trend of equity risk premium in excess of Treasury Bonds and A rated public utility bonds, respectively, over time. The regression predictions shown on pages 2 and 6 of Schedule PMA-18, show the predicted equity risk premium to be 6.33% over Treasury Bonds and 4.89% over Moody's A rated utility bonds.

[24] Morin 128-129.

The second type of regression analysis performed regressed the relationship between the equity risk premium and interest rate levels shown on Schedules (MPG-8) and (MPG-9), respectively. The results are shown on pages 3, 4, 7 and 8 of Schedule PMA-18. The graphical depictions shown on pages 3 and 7 of Schedule PMA-18 clearly confirm the inverse relationship between interest rate levels and equity risk premium. As can be determined by interpolation from the regressions' predicted results on page 4 of Schedule 18, the indicated risk premium over a Treasury Bond of 4.40% is 5.90%. Similarly, with an estimated yield on A2 rated utility bonds of 4.75%, it can be determined by interpolation that the predicted equity risk premium is 4.89%.

Q. DID YOU THEN RECALCULATE THE INDICATED RISK PREMIUM COST RATES USING OPC'S PROJECTED YIELD ON 30-YEAR TREASURY BONDS OF 4.40% AND THE AVERAGE YIELD ON MOODY'S A RATED UTILITY BONDS OF 4.75% AS SHOWN ON SCHEDULE (MPG-9)?

A. Yes, I did. The information is summarized in Schedule PMA-19. As indicated at the top of Schedule PMA-19, with a projected Treasury Bond yield of 4.40% and expected risk premiums of 6.33% and 5.90%, the indicated common equity cost rates range from 10.36%-10.73%. Also shown, based upon a 4.75% average yield on Moody's A2 rated utility bonds and predicted equity risk premiums of 4.89% and 4.95%, the indicated common equity cost rates are 9.64%-9.70%. Using an average of all four indicates a risk premium cost rate of 10.10%. As discussed previously, I do not agree with OPC's basic risk premium approach, but the foregoing is a far more appropriate indicator of common equity cost rate than his conclusion of a range of 9.49%-9.91%.

Capital Asset Pricing Model

Q. PLEASE COMMENT UPON OPC'S APPLICATION OF THE CAPM.

A. OPC's application of the CAPM is flawed in its derivation of its equity risk premium and failure to include an ECAPM. Although OPC correctly derived an historical market equity risk premium, OPC did not include a forward-looking, or prospective, equity risk premium is not truly a prospective equity risk premium. In addition, OPC failed to employ the ECAPM in addition to the traditional CAPM.

Q. WHY IS IT APPROPRIATE TO INCLUDE A "FORWARD-LOOKING", OR PROSPECTIVE MARKET EQUITY RISK PREMIUM?

A. It is appropriate to include a forward-looking, or prospective, market equity risk premium because both ratemaking and the cost of capital are prospective in nature as discussed previously. In addition, just as the use of a proxy group of companies combined with multiple cost of common equity models adds reliability to the informed expert judgment used in rate of return analysis, the use of multiple market equity risk premiums adds reliability to a CAPM analysis.

One more appropriate method of deriving the prospective equity market return is based upon *Value Line*'s projected 3-5 year market appreciation potential, which when converted to an annual rate plus the market's median expected dividend yield results in a forecasted total annual market return of 8.98% and market equity risk premium of 4.58% for the thirteen weeks ending January 10, 2014 and derived in Note 1 on Schedule PMA-20. This methodology yields a truly prospective market return which is based upon an important investor-influencing publication. Another method is to use the previously-discussed PRPM^{TM} predicted market equity risk premium of 10.42%. These prospective

risk premiums, averaged with the arithmetic monthly mean historical equity risk premium of 6.55%[25] result in a 7.18% market equity risk premium.[26]

Q. WHY SHOULD OPC HAVE INCLUDED AN ECAPM ANALYSIS IN DERIVING HIS CAPM-BASED COMMON EQUITY COST RATE?

A. As discussed previously in this rebuttal testimony and in my direct testimony at page 51, line 14 through page 52, line 4 and again at page 54, line 13 through page 56, line 8, the empirical Security Market Line (SML) described by the traditional CAPM is not as steeply sloped as the predicted SML. As Morin[27] notes:

> . . .low-beta securities earn returns somewhat higher than the CAPM would predict, and high-beta securities earn less than predicted.

Hence, both the traditional CAPM and ECAPM should be used in deriving a CAPM-based common equity cost rate. I have shown the results of applying both the traditional CAPM and ECAPM to OPC's using a correctly derived historical market equity risk premium. As shown on Schedule PMA-20 the average traditional CAPM result is 9.61%, while the ECAPM result is 10.10%. The average of both cost rates is 9.86%.

Q. BASED UPON THE CORRECTED OPC RPM AND CAPM DISCUSSED PREVIOUSLY, WHAT WOULD OPC'S RECOMMENDATION BE?

A. As shown on Table 1 below, the OPC's DCF is 9.00%, the corrected OPC RPM is 10.10% and the corrected OPC CAPM is 9.86%. The range of cost rates is 9.00%-

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[25] Calculated on a monthly basis to be consistent with the derivation of the PRPM™ predicted market equity risk premium using monthly observations.

[26] 7.18% = (6.55% + 10.42% + 4.58%)/3.

[27] Morin 175.

10.10% with a midpoint of 9.65% (only 5 basis points below MGE's requested return of common equity of 9.70%) which would be OPC's corrected recommendation.

Table 1

DCF	9.00%*
Risk Premium	10.10%**
CAPM	9.86%***

* From Table 4 on page 41 of OPC's Direct Testimony.
** From Schedule PMA-19.
*** From Schedule PMA-20.

Q. DOES THAT CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes.

Missouri Gas Energy
Corrected Discounted Cash Flow (DCF) Cost Rate of Common Equity
MOPSC Staff's Seven Comparable Natural Gas Distribution Companies

	(1)	(2)	(3)	(4)
MOPSC Staff's Seven Comparable Natural Gas Distribution Companies	Projected Dividend Yield (1)	Projected 5-Year EPS Growth Reuters (Mean) (2)	Projected 3-5 Year EPS Growth Value Line (3)	Average Projected Growth (4)
AGL Resources, Inc.	4.10%	4.00%	8.00%	6.00%
Atmos Energy Corp.	3.33%	7.75%	7.50%	7.63%
Laclede Group Inc.	3.83%	4.90%	6.00%	5.45%
New Jersey Resources Corp.	3.63%	2.50%	5.50%	4.00%
Northwest Natural Gas Co.	4.40%	4.00%	4.50%	4.25%
Piedmont Natural Gas Co.	3.84%	4.00%	4.00%	4.00%
WGL Holdings, Inc.	4.11%	4.60%	3.50%	4.05%
			Dividend Yield:	3.90%(1)
			Range of Growth:	4.00% - 7.63%
			Range of Proxy Cost of Common Equity:	7.90% - 11.53%
			Midpoint:	9.71%

Notes:
(1) From Schedule ZM-12 of the MOPSC Staff Report.
(2) From Column (3) on Schedule ZM-10-5 of the MOPSC Staff Report.
(3) From Value Line Investment Survey, Ratings & Reports, December 6, 2013.
(4) Average of Columns (2) and (3).

Missouri Gas Energy
Value Added by Industry
[Billions of dollars]
Bureau of Economic Analysis
Release Date: April 25, 2013

Line		2004	2005	2006	2007	2008	2009	2010	2011	2012	2011-2012	2004-2012
1	**Gross domestic product**	11853.3	12623	13377.2	14028.7	14291.5	13973.7	14498.9	15075.7	15684.8	**4.04%**	**4.04%**
2	**Private industries**	10345.6	11037.1	11709.4	12268.8	12437.1	12056.7	12532.3	13081.8	13657.6	4.40%	4.00%
3	**Agriculture, forestry, fishing, and hunting**	142.7	127.1	122.5	144.5	159.4	142.4	157.6	173.5	168.6	-2.82%	2.27%
6	**Mining**	159.3	192.3	229.8	254.5	319.2	221.7	251.9	289.9	285.2	-1.62%	9.88%
10	**Utilities**	208	205.9	236	248.6	257.7	264.7	284.5	297.9	304.3	**2.15%**	**5.79%**
11	**Construction**	554.2	612.5	651	653.8	614.2	542.9	523.3	529.5	558.7	5.51%	0.10%
12	**Manufacturing**	1482.7	1569.3	1648.4	1698	1628.5	1540.1	1630.5	1731.5	1866.7	7.81%	3.24%
25	Nondurable goods	660.6	691	727.1	758.1	724.4	753.2	763.8	821.3	866.5	5.50%	3.90%
34	**Wholesale trade**	684.2	725.5	769.7	816.7	824.1	766.3	799	845.1	897.9	6.25%	3.90%
35	**Retail trade**	795.1	837.6	875.8	887.9	848.6	846.8	876	905.7	949.1	4.79%	2.42%
36	**Transportation and warehousing**	347	369.5	394	404.9	415	396.6	422.6	447.9	469.3	4.78%	4.41%
45	**Information**	558.8	586.5	590.6	635.5	636.8	604.8	612.2	646.6	690.6	6.80%	2.95%
50	**Finance, insurance, real estate, rental, and leasing**	2400.4	2598.8	2765.3	2857	2916.6	2941.8	3021.8	3058.1	3168.6	3.61%	4.00%
51	**Finance and insurance**	919	1019.4	1092.7	1080	1041.5	1093.6	1157.3	1159.3	1242.3	7.16%	4.40%
56	**Real estate and rental and leasing**	1481.4	1579.4	1672.6	1777	1875.2	1848.3	1864.5	1898.8	1926.3	1.45%	3.75%
59	**Professional and business services**	1347.5	1460.2	1567.2	1697.6	1783.2	1693.2	1769.6	1883.9	1952.4	3.64%	5.61%
60	**Professional, scientific, and technical services**	808.7	870.3	947.5	1024.7	1100.2	1045.8	1084	1151.5	1192.3	3.54%	5.93%
64	**Management of companies and enterprises**	203.3	218.4	234.5	257.7	263.2	248.2	262.7	283.6	295.6	4.23%	5.68%
65	**Administrative and waste management services**	335.6	371.4	385.1	415.2	419.8	399.1	423	448.8	464.5	3.50%	4.80%
68	**Educational services, health care, and social assistance**	906.1	953.5	1015.3	1076.9	1153.9	1225.6	1269.2	1311.1	1344.7	2.56%	6.05%
69	**Educational services**	116	120.2	129.1	137.9	147.6	163.1	166.4	174.2	179.9	3.27%	6.89%
70	**Health care and social assistance**	790.1	833.3	886.2	939	1006.3	1062.4	1102.7	1136.9	1164.8	2.45%	5.93%
74	**Arts, entertainment, recreation, accommodation, and food services**	458.7	485.4	512.4	549	537.3	525.4	558	591.1	624.9	5.72%	4.53%
75	**Arts, entertainment, and recreation**	114.7	118.9	127.7	137.2	132.4	130.6	139.4	148	153.3	3.58%	4.21%
78	**Accommodation and food services**	344	366.5	384.7	411.7	404.9	394.8	418.6	443.1	471.6	6.43%	4.64%
81	**Other services, except government**	300.8	313	331.6	343.8	342.7	344.4	356	369.9	376.7	1.84%	3.15%
82	**Government**	1507.7	1585.9	1667.8	1759.9	1854.4	1917	1966.6	1993.8	2026.2	1.63%	4.30%
83	**Federal**	478.4	501.8	526.5	552.3	580.9	613	647.2	658.1	668.3	1.55%	4.96%
86	**State and local**	1029.3	1084.1	1141.3	1207.6	1273.5	1304	1319.5	1335.8	1357.9	1.65%	3.99%
90	Private goods-producing industries [1]	2338.9	2501.2	2651.6	2750.9	2721.2	2447.1	2563.4	2724.4	2879.2	5.68%	2.89%
91	Private services-producing industries [2]	8006.6	8535.8	9057.8	9517.9	9715.9	9609.6	9968.9	10357.4	10778.3	4.06%	4.33%
92	Information-communications-technology-producing industries [3]	494.4	535	560	587.4	599.1	588.9	635.3	647.7	687.1	6.08%	4.87%

Legend / Footnotes:

1. Consists of agriculture, forestry, fishing, and hunting; mining; construction; and manufacturing.
2. Consists of utilities; wholesale trade; retail trade; transportation and warehousing; information; finance, insurance, real estate, rental, and leasing; professional and business services;
3. Consists of computer and electronic products; publishing industries (includes software); information and data processing services; and computer systems design and related services.
Detail may not add to total due to rounding.

Twin Lakes Utilities, Inc.
MOPSC Staff Corrected Indicated Common Equity Cost Rate Through Use
of the Traditional Capital Asset Pricing Model (CAPM) and Empirical Capital Asset Pricing Model (ECAPM)
Employing Arithmetic Mean Risk Premiums, Income Returns, Prospective Risk Premiums and Risk-Free Rates

	1	2	3	4	5	6
MOPSC Staff's Seven Comparabl Natural Gas Distribution Companies	Value Line Adjusted Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate (3)	ECAPM Cost Rate (4)	Indicated Common Equity Cost Rate (5)
AGL Resources, Inc.	0.75	7.25	4.43	9.87	10.32	10.09
Atmos Energy Coproration	0.80	7.25	4.43	10.23	10.59	10.41
New Jersey Resources Corporation	0.65	7.25	4.43	9.14	9.78	9.46
Laclede Group, Inc.	0.70	7.25	4.43	9.51	10.05	9.78
Northwest Natural Gas	0.65	7.25	4.43	9.14	9.78	9.46
Piedmont Natural Gas Co., Inc.	0.75	7.25	4.43	9.87	10.32	10.09
WGL Holdigns, Inc.	0.65	7.25	4.43	9.14	9.78	9.46
Average	0.71			9.56 %	10.09 %	9.83 %

Notes:

(1) Average of Value Line 3-5 year projected total return of the market from 10/13 - 12/13, PRPM™ projected risk premium through December 2013, and Ibbotson Arithmetic monthly risk premium of Large stock minus the income return on long-term government bonds as shown below.

SBBI Large Stocks Total Return 1926-2012	11.83 %
SBBI Long-Term Gov't Bonds Income Return 1926-2012	5.28
SBBI Risk Premium	6.55 %
PRPM™ Risk Premium through December 31, 2013	10.42 %
VL Projected 3-5 year return on the market	
From VL Summary and Index for Oct. - Dec. 2013	7.19 %
Value Line Projected 3-5 year dividend yield	2.03
Value Line Projected 3-5 year total return on the market	9.22 %
Blue Chip Forecasts December 1, 2013 & January 1, 2014 projection of 30 year Treasury Bonds	4.43
Value Line Projected Risk Premium	4.79 %
Average Risk Premium	7.25 %

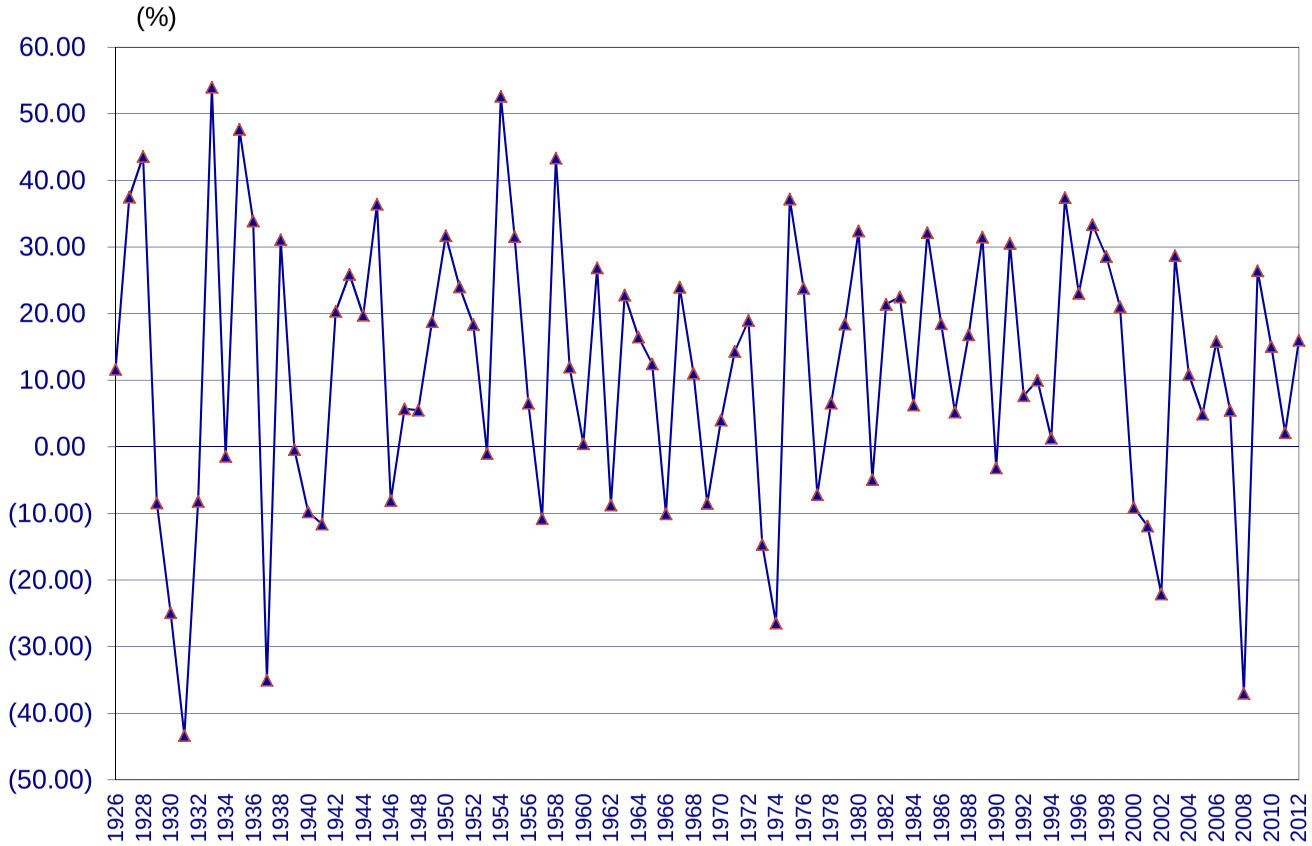
(2) Forecast of 30-yr Treasury Bonds From December 1, 2013 and January 1, 2014 Blue Chip Financial Forecasts as shown below.

First Quarter 2014	3.90 %
Second Quarter 2014	4.00
Third Quarter 2014	4.10
Fourth Quarter 2014	4.20
First Quarter 2015	4.30
Second Quarter 2015	4.40
2015-2019	5.00
2020-2024	5.50
Average	4.43 %

(3) From Note 3 of Schedule PMA-7, page 2 of 2.
(4) From Note 4 of Schedule PMA-7, page 2 of 2.
(5) Average of Columns 4 and 5.

Sources of Information:
Blue Chip Financial Forecasts, December 1, 2013 and January 1, 2014
Value Line Summary and Index, 10/4/13 - 12/27/13
Value Line Standard Edition

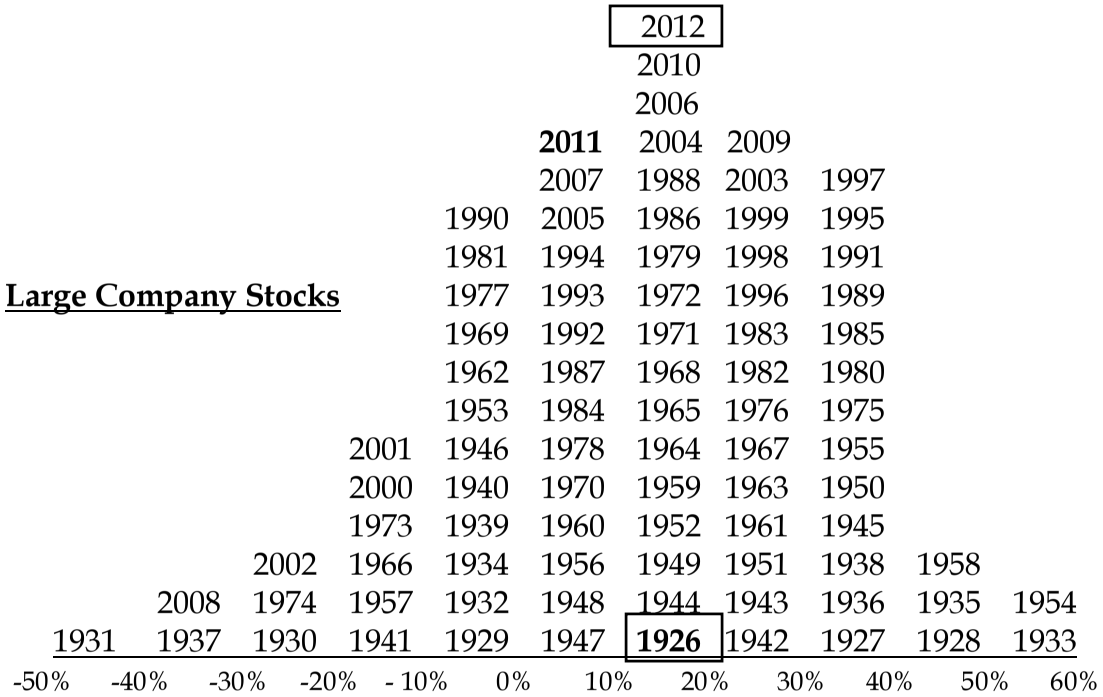
Large Company Stock Returns
From 1926 to 2012



Source of Information:

Ibbotson® SBBI® - 2013 Valuation Yearbook - Market Results for Stocks Bonds Bills and Inflation - 1926-2012, Morningstar, Inc., 2013 Chicago, IL.

Total Returns on Large Company Stocks
1926 to 2012

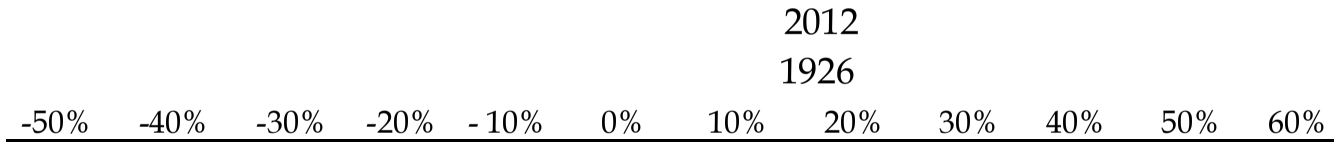


Arithmetic Mean: $r_A = \sum_{t=1}^{n} r_t \; / \; n$

Source : Ibbotson® SBBI ® – 2013 Valuation Yearbook – Market Results for Stocks, Bonds, Bills, and Inflation –1926-2012, p. 183
Morningstar, Inc., 2013 Chicago, IL

Total Returns on Large Company Stocks
1926 to 2012

Large Company Stocks



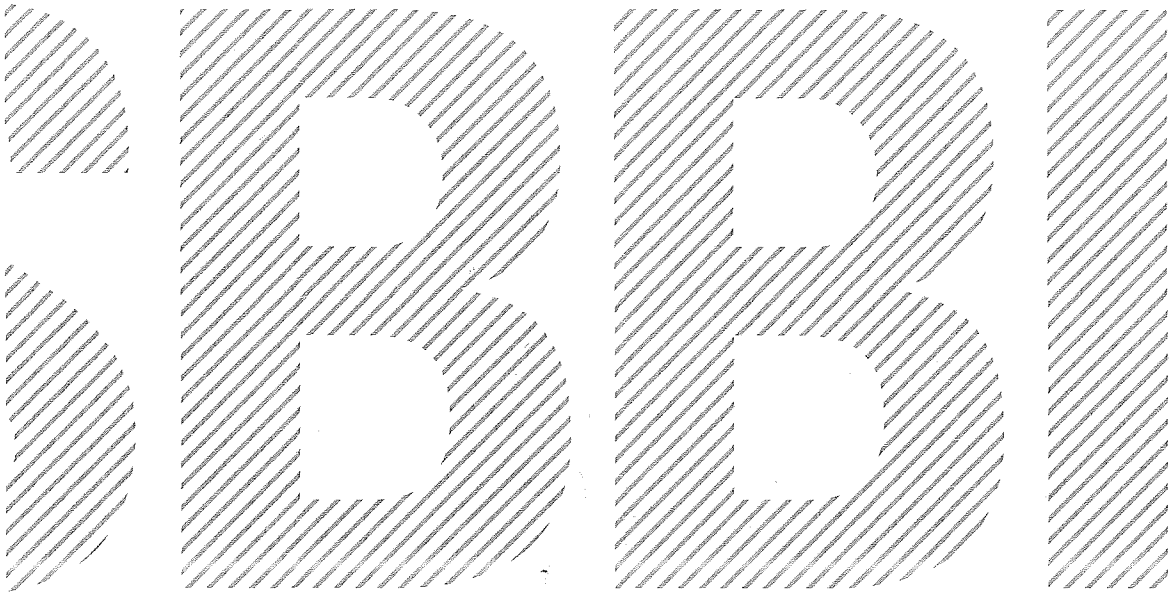
Geometric Mean: $r_G = \left[V_n / V_0 \right]^{1/n} - 1$

Source : Ibbotson® SBBI ® – 2013 Valuation Yearbook – Market Results for Stocks, Bonds, Bills, and Inflation –1926-2012, pp. 182-183 Morningstar, Inc., 2013 Chicago, IL

Ibbotson® SBBI®

2013 Valuation Yearbook

Market Results for
Stocks, Bonds, Bills, and Inflation
1926–2012



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Chapter 5

The Equity Risk Premium

The expected equity risk premium can be defined as the additional return an investor expects to receive to compensate for the additional risk associated with investing in equities as opposed to investing in riskless assets. It is an essential component in several cost of equity estimation models, including the buildup method, the capital asset pricing model (CAPM), and the Fama-French three factor model. It is important to note that the expected equity risk premium, as it is used in discount rates and cost of capital analysis, is a forward-looking concept. That is, the equity risk premium that is used in the discount rate should be reflective of what investors think the risk premium will be going forward.

Unfortunately, the expected equity risk premium is unobservable in the market and therefore must be estimated. Typically, this estimation is arrived at through the use of historical data. The historical equity risk premium can be calculated by subtracting the long-term average of the income return on the riskless asset (Treasuries) from the long-term average stock market return (measured over the same period as that of the riskless asset). In using a historical measure of the equity risk premium, one assumes that what has happened in the past is representative of what might be expected in the future. In other words, the assumption one makes when using historical data to measure the expected equity risk premium is that the relationship between the returns of the risky asset (equities) and the riskless asset (Treasuries) is stable. The stability of this relationship will be examined later in this chapter.

Since the expected equity risk premium must be estimated, there is much controversy regarding how the estimation should be conducted. A variety of different approaches to calculating the equity risk premium have been utilized over the years. Such studies can be categorized into four groups based on the approaches they have taken. The first group of studies tries to derive the equity risk premium from historical returns between stocks and bonds as was mentioned above. The second group, embracing a supply side model, uses fundamental information such as earnings, dividends, or overall economic productivity to measure the expected equity risk premium. A third group adopts demand side models that derive the expected returns of equities through the payoff demanded by investors for bearing the risk of equity investments.[1] The opinions of financial professionals through broad surveys are relied upon by the fourth and final group.

The range of equity risk premium estimates used in practice is surprisingly large. Using a low equity risk premium estimate as opposed to a high estimate can have a significant impact on the estimated value of a stream of cash flows. This chapter addresses many of the controversies surrounding estimation of the equity risk premium and focuses primarily on the historical calculation but also discusses the supply side model.

Calculating the Historical Equity Risk Premium

In measuring the historical equity risk premium one must make a number of decisions that can impact the resulting figure; some decisions have a greater impact than others. These decisions include selecting the stock market benchmark, the risk-free asset, either an arithmetic or a geometric average, and the time period for measurement. Each of these factors has an impact on the resulting equity risk premium estimate.

The Stock Market Benchmark

The stock market benchmark chosen should be a broad index that reflects the behavior of the market as a whole. Two examples of commonly used indexes are the S&P 500® and the New York Stock Exchange Composite Index. Although the Dow Jones Industrial Average is a popular index, it would be inappropriate for calculating the equity risk premium because it is too narrow.

We use the total return of our large company stock index (currently represented by the S&P 500) as our market benchmark when calculating the equity risk premium. The S&P 500 was selected as the appropriate market benchmark because it is representative of a large sample of companies across a large number of industries. The S&P 500 is also one of the most widely accepted market benchmarks. In short, the S&P 500 is a good measure of the equity market as a

whole. Table 5-1 illustrates the equity risk premium calculation using several different market indices and the income return on three government bonds of different horizons.

Table 5-1: Equity Risk Premium with Different Market Indices

	Equity Risk Premia		
	Long-Horizon (%)	Intermediate-Horizon (%)	Short-Horizon (%)
S&P 500	6.70	7.24	8.24
Total Value-Weighted NYSE	6.49	7.03	8.02
NYSE Deciles 1–2	5.96	6.51	7.50

Data from 1926–2012.

The equity risk premium is calculated by subtracting the arithmetic mean of the government bond income return from the arithmetic mean of the stock market total return. Table 5-2 demonstrates this calculation for the long-horizon equity risk premium.

Table 5-2: Long-Horizon Equity Risk Premium Calculation

	Arithmetic Mean				
Long-Horizon	Market Total Return (%)		Risk-Free Rate (%)		Equity Risk Premium (%)
S&P 500	11.82	–	5.12	=	6.70
Total Value-Weighted NYSE	11.60	–	5.12	=	6.48
NYSE Deciles 1–2	11.08	–	5.12	=	5.96

Data from 1926–2012.

Data for the New York Stock Exchange is obtained from Morningstar and the Center for Research in Security Prices (CRSP) at the University of Chicago's Graduate School of Business. The "Total" series is a capitalization-weighted index and includes all stocks traded on the New York Stock Exchange except closed-end mutual funds, real estate investment trusts, foreign stocks, and Americus Trusts. Capitalization-weighted means that the weight of each stock in the index, for a given month, is proportionate to its market capitalization (price times number of shares outstanding) at the beginning of that month. The "Decile 1–2" series includes all stocks with capitalizations that rank within the upper 20 percent of companies traded on the New York Stock Exchange, and it is therefore a large-capitalization index. For more information on the Center for Research in Security Pricing data methodology, see Chapter 7.

The resulting equity risk premia vary somewhat depending on the market index chosen. It is expected that using the "Total" series will result in a higher equity risk premium than using the "Decile 1–2" series, since the "Decile 1–2" series is a large-capitalization series. As of September 30, 2012, deciles 1–2 of the New York Stock Exchange contained the largest 285 companies traded on the exchange. The "Total" series includes smaller companies that have had historically higher returns, resulting in a higher equity risk premium.

The higher equity risk premium arrived at by using the S&P 500 as a market benchmark is more difficult to explain. One possible explanation is that the S&P 500 is not restricted to the largest 500 companies; other considerations such as industry composition are taken into account when determining if a company should be included in the index. Some smaller stocks are thus included, which may result in the higher equity risk premium of the index. Another possible explanation would be what is termed the "S&P inclusion effect." It is thought that simply being included among the stocks listed on the S&P 500 augments a company's returns. This is due to the large quantity of institutional funds that flow into companies that are listed in the index.

Comparing the S&P 500 total returns to those of another large-capitalization stock index may help evaluate the potential impact of the "S&P inclusion effect." Prior to March 1957, the S&P index that is used throughout this publication consisted of 90 of the largest stocks. The index composition was then changed to include 500 large-capitalization stocks that, as stated earlier, are not necessarily the 500 largest. Deciles 1–2 of the NYSE contained just over 200 of the largest companies, ranked by market capitalization, in March of 1957. The number of companies included in the deciles of the NYSE fluctuates from quarter to quarter, and by September of 2012, deciles 1–2 contained 285 companies. Though one cannot draw a causal relationship between the change in construction and the correlation of these two indices, this analysis does indicate that the "S&P inclusion effect" does not appear to be very significant in recent periods.

Another possible explanation could be differences in how survivorship is treated when calculating returns. The Center for Research in Security Prices includes the return for a company in the average decile return for the period following the company's removal from the decile,

whether caused by a shift to a different decile portfolio, bankruptcy, or other such reason. On the other hand, the S&P 500 does not make this adjustment. Once a company is no longer included among the S&P 500, its return is dropped from the index. However, this effect may be lessened by the advance announcement of companies being dropped from or added to the S&P 500. In many instances throughout this publication we will present equity risk premia using both the S&P 500 and the NYSE "Deciles 1–2" portfolio to provide a comparison between these large-capitalization benchmarks.

The Market Benchmark and Firm Size

Although not restricted to include only the 500 largest companies, the S&P 500 is considered a large company index. The returns of the S&P 500 are capitalization weighted, which means that the weight of each stock in the index, for a given month, is proportionate to its market capitalization (price times number of shares outstanding) at the beginning of that month. The larger companies in the index therefore receive the majority of the weight. The use of the NYSE "Deciles 1–2" series results in an even purer large company index. Yet many valuation professionals are faced with valuing small companies, which historically have had different risk and return characteristics than large companies. If using a large stock index to calculate the equity risk premium, an adjustment is usually needed to account for the different risk and return characteristics of small stocks. This will be discussed further in Chapter 7 on the size premium.

The Risk-Free Asset

The equity risk premium can be calculated for a variety of time horizons when given the choice of risk-free asset to be used in the calculation. The *2013 Ibbotson® Stocks, Bonds, Bills, and Inflation® Classic Yearbook* provides equity risk premia calculations for short-, intermediate-, and long-term horizons. The short-, intermediate-, and long-horizon equity risk premia are calculated using the income return from a 30-day Treasury bill, a 5-year Treasury bond, and a 20-year Treasury bond, respectively.

Although the equity risk premia of several horizons are available, the long-horizon equity risk premium is preferable for use in most business-valuation settings, even if an investor has a shorter time horizon. Companies are entities that generally have no defined life span; when determining a company's value, it is important to use a long-term discount rate because the life of the company is assumed to be infinite. For this reason, it is appropriate in most cases to use the long-horizon equity risk premium for business valuation.

20-Year versus 30-Year Treasuries

Our methodology for estimating the long-horizon equity risk premium makes use of the income return on a 20-year Treasury bond; however, the Treasury currently does not issue a 20-year bond. The 30-year bond that the Treasury recently began issuing again is theoretically more correct due to the long-term nature of business valuation, yet Ibbotson Associates instead creates a series of returns using bonds on the market with approximately 20 years to maturity. The reason for the use of a 20-year maturity bond is that 30-year Treasury securities have only been issued over the relatively recent past, starting in February of 1977, and were not issued at all through the early 2000s.

The same reason exists for why we do not use the 10-year Treasury bond—a long history of market data is not available for 10-year bonds. We have persisted in using a 20-year bond to keep the basis of the time series consistent.

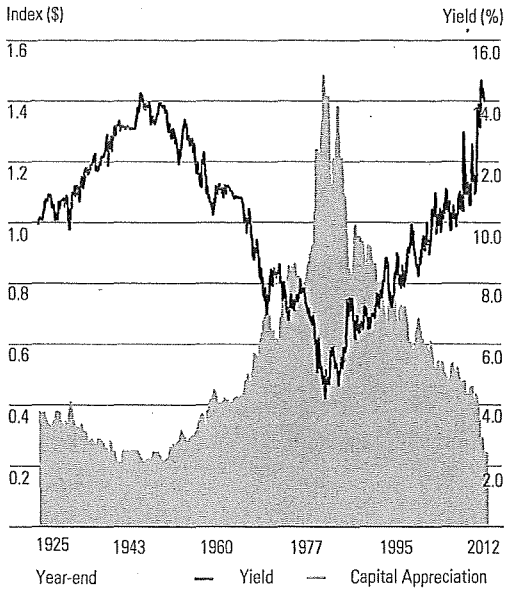
Income Return

Another point to keep in mind when calculating the equity risk premium is that the income return on the appropriate-horizon Treasury security, rather than the total return, is used in the calculation. The total return is comprised of three return components: the income return, the capital appreciation return, and the reinvestment return. The income return is defined as the portion of the total return that results from a periodic cash flow or, in this case, the bond coupon payment. The capital appreciation return results from the price change of a bond over a specific period. Bond prices generally change in reaction to unexpected fluctuations in yields. Reinvestment return is the return on a given month's investment income when reinvested into the same asset class in the subsequent months of the year. The income return is thus used in the estimation of the equity risk premium because it represents the truly riskless portion of the return.[2]

Yields have generally risen on the long-term bond over the 1926–2012 period, so it has experienced negative capital appreciation over much of this time. This trend has turned

around since the 1980s, however. Graph 5-1 illustrates the yields on the long-term government bond series compared to an index of the long-term government bond capital appreciation. In general, as yields rose, the capital appreciation index fell, and vice versa. Had an investor held the long-term bond to maturity, he would have realized the yield on the bond as the total return. However, in a constant maturity portfolio, such as those used to measure bond returns in this publication, bonds are sold before maturity (at a capital loss if the market yield has risen since the time of purchase). This negative return is associated with the risk of unanticipated yield changes.

Graph 5-1: Long-term Government Bond Yields versus Capital Appreciation Index



Data from 1925–2012.

For example, if bond yields rise unexpectedly, investors can receive a higher coupon payment from a newly issued bond than from the purchase of an outstanding bond with the former lower-coupon payment. The outstanding lower-coupon bond will thus fail to attract buyers, and its price will decrease, causing its yield to increase correspondingly, as its coupon payment remains the same. The newly priced outstanding bond will subsequently attract purchasers who will benefit from the shift in price and yield; however, those investors who already held the bond will suffer a capital loss due to the fall in price.

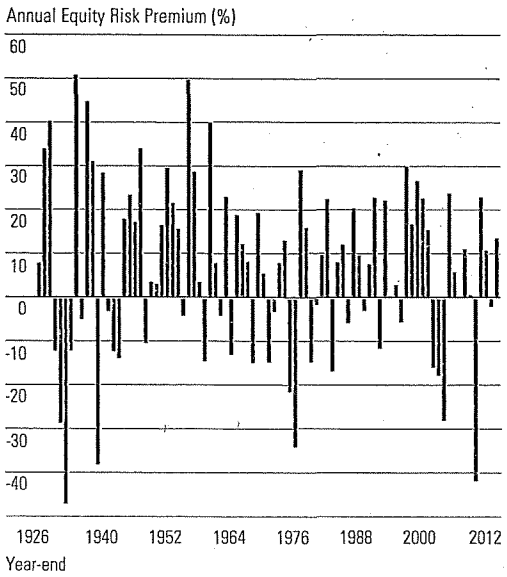
Anticipated changes in yields are assessed by the market and figured into the price of a bond. Future changes in yields that are not anticipated will cause the price of the bond to adjust accordingly. Price changes in bonds due to unanticipated changes in yields introduce price risk into the total return. Therefore, the total return on the bond series does not represent the riskless rate of return. The income return better represents the unbiased estimate of the purely riskless rate of return, since an investor can hold a bond to maturity and be entitled to the income return with no capital loss.

Arithmetic versus Geometric Means

The equity risk premium data presented in this book are arithmetic average risk premia as opposed to geometric average risk premia. The arithmetic average equity risk premium can be demonstrated to be most appropriate when discounting future cash flows. For use as the expected equity risk premium in either the CAPM or the building block approach, the arithmetic mean or the simple difference of the arithmetic means of stock market returns and riskless rates is the relevant number. This is because both the CAPM and the building block approach are additive models, in which the cost of capital is the sum of its parts. The geometric average is more appropriate for reporting past performance, since it represents the compound average return.

The argument for using the arithmetic average is quite straightforward. In looking at projected cash flows, the equity risk premium that should be employed is the equity risk premium that is expected to actually be incurred over the future time periods. Graph 5-2 shows the realized equity risk premium for each year based on the returns of the S&P 500 and the income return on long-term government bonds. (The actual, observed difference between the return on the stock market and the riskless rate is known as the realized equity risk premium.) There is considerable volatility in the year-by-year statistics. At times the realized equity risk premium is even negative.

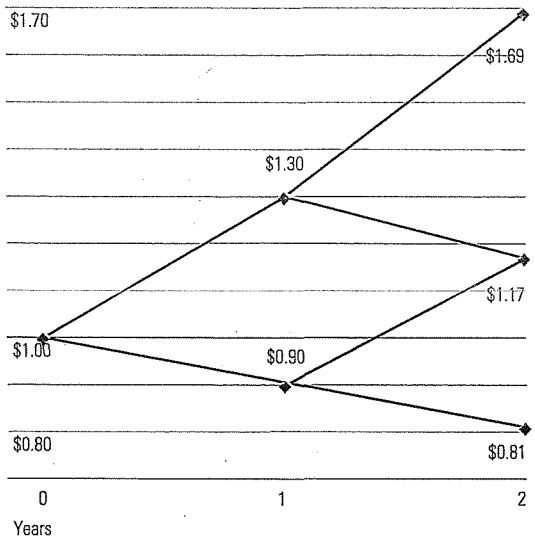
Graph 5-2: Realized Equity Risk Premium Per Year



Data from 1926–2012.

To illustrate how the arithmetic mean is more appropriate than the geometric mean in discounting cash flows, suppose the expected return on a stock is 10 percent per year with a standard deviation of 20 percent. Also assume that only two outcomes are possible each year: +30 percent and –10 percent (i.e., the mean plus or minus one standard deviation). The probability of occurrence for each outcome is equal. The growth of wealth over a two-year period is illustrated in Graph 5-3.

Graph 5-3: Growth of Wealth Example



The most common outcome of $1.17 is given by the geometric mean of 8.2 percent. Compounding the possible outcomes as follows derives the geometric mean:

$$\left[(1+0.30)\times(1-0.10)\right]^{1/2}-1=0.082$$

However, the expected value is predicted by compounding the arithmetic, not the geometric, mean. To illustrate this, we need to look at the probability-weighted average of all possible outcomes:

(0.25 × $1.69)	= $0.4225
+ (0.50 × $1.17)	= $0.5850
+ (0.25 × $0.81)	= $0.2025
Total	$1.2100

Therefore, $1.21 is the probability-weighted expected value. The rate that must be compounded to achieve the terminal value of $1.21 after 2 years is 10 percent, the arithmetic mean:

$$\$1\times(1+0.10)^2=\$1.21$$

The geometric mean, when compounded, results in the median of the distribution:

$$\$1\times(1+0.082)^2=\$1.17$$

The arithmetic mean equates the expected future value with the present value; it is therefore the appropriate discount rate.

Appropriate Historical Time Period

The equity risk premium can be estimated using any historical time period. For the U.S., market data exists at least as far back as the late 1800s. Therefore, it is possible to estimate the equity risk premium using data that covers roughly the past 100 years.

Our equity risk premium covers the time period from 1926 to the present. The original data source for the time series comprising the equity risk premium is the Center for Research in Security Prices. CRSP chose to begin their analysis of market returns with 1926 for two main reasons. CRSP determined that the time period around 1926 was

approximately when quality financial data became available. They also made a conscious effort to include the period of extreme market volatility from the late twenties and early thirties; 1926 was chosen because it includes one full business cycle of data before the market crash of 1929. These are the most basic reasons why our equity risk premium calculation window starts in 1926.

Implicit in using history to forecast the future is the assumption that investors' expectations for future outcomes conform to past results. This method assumes that the price of taking on risk changes only slowly, if at all, over time. This "future equals the past" assumption is most applicable to a random time-series variable. A time-series variable is random if its value in one period is independent of its value in other periods.

Does the Equity Risk Premium Revert to Its Mean Over Time?

Some have argued that the estimate of the equity risk premium is upwardly biased since the stock market is currently priced high. In other words, since there have been several years with extraordinarily high market returns and realized equity risk premia, the expectation is that returns and realized equity risk premia will be lower in the future, bringing the average back to a normalized level. This argument relies on several studies that have tried to determine whether reversion to the mean exists in stock market prices and the equity risk premium.[3] Several academics contradict each other on this topic; moreover, the evidence supporting this argument is neither conclusive nor compelling enough to make such a strong assumption.

Our own empirical evidence suggests that the yearly difference between the stock market total return and the U.S. Treasury bond income return in any particular year is random. Graph 5-2, presented earlier, illustrates the randomness of the realized equity risk premium.

A statistical measure of the randomness of a return series is its serial correlation. Serial correlation (or autocorrelation) is defined as the degree to which the return of a given series is related from period to period. A serial correlation near positive one indicates that returns are predictable from one period to the next period and are positively related. That is, the returns of one period are a good predictor of the returns in the next period. Conversely, a serial correlation near negative one indicates that the returns in one period are inversely related to those of the next period. A serial correlation near zero indicates that the returns are random or unpredictable from one period to the next. Table 5-3 contains the serial correlation of the market total returns, the realized long-horizon equity risk premium, and inflation.

Table 5-3: Interpretation of Annual Serial Correlations

Series	Serial Correlation	Interpretation
Large Company Stock Total Returns	0.01	Random
Equity Risk Premium	0.02	Random
Inflation Rates	0.64	Trend

Data from 1926–2012.

The significance of this evidence is that the realized equity risk premium next year will not be dependent on the realized equity risk premium from this year. That is, there is no discernible pattern in the realized equity risk premium—it is virtually impossible to forecast next year's realized risk premium based on the premium of the previous year. For example, if this year's difference between the riskless rate and the return on the stock market is higher than last year's, that does not imply that next year's will be higher than this year's. It is as likely to be higher as it is lower. The best estimate of the expected value of a variable that has behaved randomly in the past is the average (or arithmetic mean) of its past values.

Table 5-4 also indicates that the equity risk premium varies considerably by decade. The complete decades ranged from a high of 17.9 percent in the 1950s to a low of -3.7 percent in the 2000s. This look at historical equity risk premium reveals no observable pattern.

Table 5-4: Long-Horizon Equity Risk Premium by Decade (%)

1920s*	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s	03-2012
17.6	2.3	8.0	17.9	4.2	0.3	7.9	12.1	-3.7	4.6

Data from 1926–2012.
*Based on the period 1926–1929.

Finnerty and Leistikow perform more econometrically sophisticated tests of mean reversion in the equity risk premium. Their tests demonstrate that—as we suspected from our simpler tests—the equity risk premium that was realized over 1926 to the present was almost perfectly free of mean reversion and had no statistically identifiable time trends.[4] Lo and MacKinlay conclude, "the rejection of the random walk for weekly returns does not support a mean-reverting model of asset prices."

Choosing an Appropriate Historical Period

The estimate of the equity risk premium depends on the length of the data series studied. A proper estimate of the equity risk premium requires a data series long enough to give a reliable average without being unduly influenced by very good and very poor short-term returns. When calculated using a long data series, the historical equity risk premium is relatively stable.[5] Furthermore, because an average of the realized equity risk premium is quite volatile when calculated using a short history, using a long series makes it less likely that the analyst can justify any number he or she wants. The magnitude of how shorter periods can affect the result will be explored later in this chapter.

Some analysts estimate the expected equity risk premium using a shorter, more recent time period on the basis that recent events are more likely to be repeated in the near future; furthermore, they believe that the 1920s, 1930s, and 1940s contain too many unusual events. This view is suspect because all periods contain "unusual" events. Some of the most unusual events of the last hundred years took place quite recently, including the inflation of the late 1970s and early 1980s, the October 1987 stock market crash, the collapse of the high-yield bond market, the major contraction and consolidation of the thrift industry, the collapse of the Soviet Union, the development of the European Economic Community, the attacks of September 11, 2001 and the more recent liquidity crisis of 2008 and 2009.

It is even difficult for economists to predict the economic environment of the future. For example, if one were analyzing the stock market in 1987 before the crash, it would be statistically improbable to predict the impending short-term volatility without considering the stock market crash and market volatility of the 1929–1931 period. Without an appreciation of the 1920s and 1930s, no one would believe that such events could happen. The 87-year period starting with 1926 is representative of what can happen: it includes high and low returns, volatile and quiet markets, war and peace, inflation and deflation, and prosperity and depression. Restricting attention to a shorter historical period underestimates the amount of change that could occur in a long future period. Finally, because historical event-types (not specific events) tend to repeat themselves, long-run capital market return studies can reveal a great deal about the future. Investors probably expect "unusual" events to occur from time to time, and their return expectations reflect this.

A Look at the Historical Results

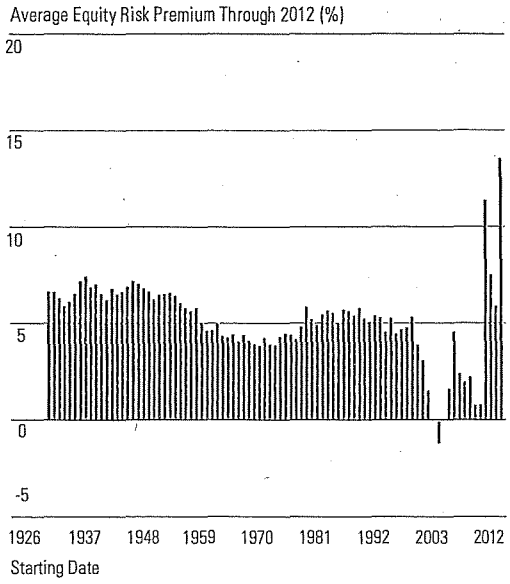
It is interesting to take a look at the realized returns and realized equity risk premium in the context of the above discussion. Table 5-5 shows the average stock market return and the average (arithmetic mean) realized long-horizon equity risk premium over various historical time periods. Similarly, Graph 5-5 shows the average (arithmetic mean) realized equity risk premium calculated through 2012 for different ending dates. The table and the graph both show that using a longer historical period provides a more stable estimate of the equity risk premium. The reason is that any unique period will not be weighted heavily in an average covering a longer historical period. It better represents the probability of these unique events occurring over a long period of time.

Table 5-5: Stock Market Return and Equity Risk Premium Over Time

Length (Yrs.)	Period Dates	Large Company Stock Arithmetic Mean Total Return (%)	Long-Horizon Equity Risk Premium (%)
87	1926–2012	11.8	6.7
80	1933–2012	12.8	7.5
70	1943–2012	12.7	7.1
60	1953–2012	11.9	5.7
50	1963–2012	11.2	4.5
40	1973–2012	11.4	4.2
30	1983–2012	12.3	5.7
20	1993–2012	10.0	4.7
15	1998–2012	6.3	1.6
10	2003–2012	8.8	4.6
5	2008–2012	4.5	0.9

Data from 1926–2012.

Graph 5-4: Equity Risk Premium Using Different Starting Dates



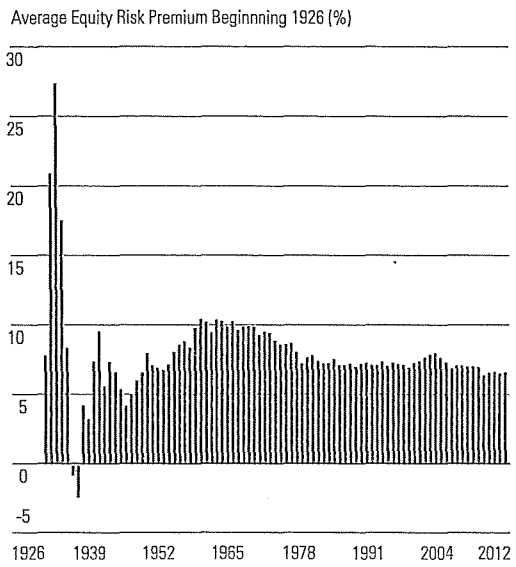
Data from 1926–2012.

Looking carefully at Graph 5-4 will clarify this point. The graph shows the realized equity risk premium for a series of time periods through 2012, starting with 1926. In other words, the first value on the graph represents the average realized equity risk premium over the period 1926–2012. The next value on the graph represents the average realized equity risk premium over the period 1927–2012, and so on, with the last value representing the average over the most recent five years, 2006–2012. Concentrating on the left side of Graph 5-5, one notices that the realized equity risk premium, when measured over long periods of time, is relatively stable. In viewing the graph from left to right, moving from longer to shorter historical periods, one sees that the value of the realized equity risk premium begins to decline significantly. Why does this occur? The reason is that the severe bear market of 1973–1974 is receiving proportionately more weight in the shorter, more recent average. If you continue to follow the line to the right, however, you will also notice that when 1973 and 1974 fall out of the recent average, the realized equity risk premium jumps up by nearly 1.2 percent.

Additionally, use of recent historical periods for estimation purposes can lead to illogical conclusions. As seen in Table 5-5, the bear market in the early 2000's and in 2008 has caused the realized equity risk premium in the shorter historical periods to be lower than the long-term average.

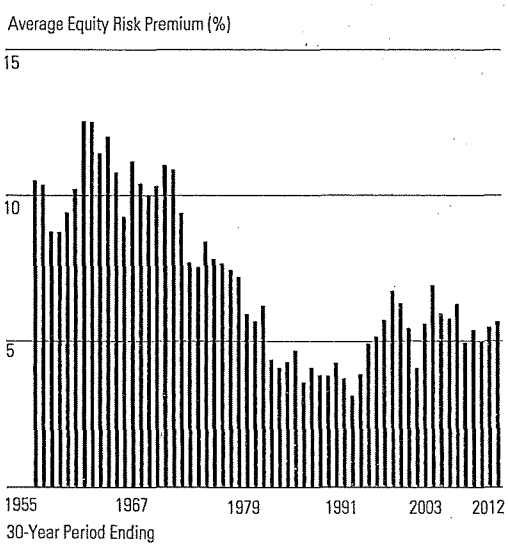
The impact of adding one additional year of data to a historical average is lessened the greater the initial time period of measurement. Short-term averages can be affected considerably by one or more unique observations. On the other hand, long-term averages produce more stable results. A series of graphs looking at the realized equity risk premium will illustrate this effect. Graph 5-5 shows the average (arithmetic mean) realized long-horizon equity risk premium starting in 1926. Each additional point on the graph represents the addition of another year to the average. Although the graph is extremely volatile in the beginning periods, the stability of the long-term average is quite remarkable. Again, the "unique" periods of time will not be weighted heavily in a long-term average, resulting in a more stable estimate.

Graph 5-5: Equity Risk Premium Using Different Ending Dates



Data from 1926–2012.

Graph 5-6: Equity Risk Premium Over 30-Year Periods



Data from 1926–2012.

Some practitioners argue for a shorter historical time period, such as 30 years, as a basis for the equity risk premium estimation. The logic for the use of a shorter period is that historical events and economic scenarios present before this time are unlikely to be repeated. Graph 5-6 shows the equity risk premium measured over 30-year periods, and it appears from the graph that the premium has been trending downwards. The 30-year equity risk premium remained close to 4 percent for several years in the 1980s and 1990s. However, it has fallen and then risen in the most recent 30-year periods.

The key to understanding this result lies again in the years 1973 and 1974. The oil embargo during this period had a tremendous effect on the market. The equity risk premium for these years alone was -21 and -34 percent, respectively. Periods that include the years 1973 and 1974 result in average equity risk premia as low as 3.2 percent. The 2000s have also had an enormous effect on the equity risk premium.

It is difficult to justify such a large divergence in estimates of return over such a short period of time. This does not suggest, however, that the years 1973 and 1974 should be excluded from any estimate of the equity risk premium; rather, it emphasizes the importance of using a long historical period when measuring the equity risk premium in order to obtain a reliable average that is not overly influenced by short-term returns. The same holds true when analyzing the poor performance of the early 2000s and 2008.

Does the Equity Risk Premium Represent Minority or Controlling Interest?

There is quite a bit of confusion among valuation practitioners regarding the use of publicly traded company data to derive the equity risk premium. Is a minority discount implicit in this data? Recall that the equity risk premium is typically derived from the returns of a market index: the S&P 500, the New York Stock Exchange (NYSE), or the NYSE Deciles 1–2. (The size premia that are covered in Chapter 7 are derived from the returns of companies traded on the NYSE, in addition to those on the NYSE Amex and NASDAQ). Both the S&P 500 and the NYSE include a preponderance of companies that are minority held. Does this imply that an equity risk premium (or size premium) derived from these data represents a minority interest premium? This is a critical issue that must be addressed by the valuation professional, since applying a minority discount or a control premium can have a material impact on the ultimate value derived in an appraisal.

Since most companies in the S&P 500 and the NYSE are minority held, some assume that the risk premia derived from these return data represent minority returns and therefore have a minority discount implicit within them. However, this assumption is not correct. The returns that are generated by the S&P 500 and the NYSE represent returns to equity holders. While most of these companies are minority held, there is no evidence that higher rates of return could be earned if these companies were suddenly acquired by majority shareholders. The equity risk premium represents expected premiums that holders of securities of a similar nature can expect to achieve on average into the future. There is no distinction between minority owners and controlling owners.

The discount rate is meant to represent the underlying risk of being in a particular industry or line of business. There are instances when a majority shareholder can acquire a company and improve the cash flows generated by that company. However, this does not necessarily have an impact on the general risk level of the cash flows generated by the company.

When performing discounted cash flow analysis, adjustments for minority or controlling interest value may be more suitably made to the projected cash flows than to the discount rate. Adjusting the expected future cash flows better measures the potential impact a controlling party may have while not overstating or understating the actual risk associated with a particular line of business.

Appraisers need to note the distinction between a publicly traded value and a minority interest value. Most public companies have no majority or controlling owner. There is thus no distinction between owners in this setting. One cannot assume that publicly held companies with no controlling owner have the same characteristics as privately held companies with both a controlling interest owner and a minority interest owner.

Other Equity Risk Premium Issues

There are a number of other issues that are commonly brought up regarding the equity risk premium that, if correct, would reduce its size. These issues include:

1. Survivorship bias in the measurement of the equity risk premium
2. Utility theory models of estimating the equity risk premium
3. Reconciling the discounted cash flow approach to the equity risk premium
4. Over-valuation effects of the market
5. Changes in investor attitudes toward market conditions
6. Supply side models of estimating the equity risk premium

In this section, we will examine each of these issues.

Survivorship

One common problem in working with financial data is properly accounting for survivorship. In working with company-specific historical data, it is important for researchers to include data from companies that failed as well as companies that succeeded before drawing conclusions from elements of that data.

The same argument can be made regarding markets as a whole. The equity risk premium data outlined in this book represent data on the United States stock market. The United States has arguably been the most successful stock market of the twentieth century. That being the case, might equity risk premium statistics based only on U.S. data overstate the returns of equities as a whole because they only focus on one successful market?

In a recent paper, Goetzmann and Jorion study this question by looking at returns from a number of world equity markets over the past century.[6] The Goetzmann-Jorion paper looks at the survivorship bias from several different perspectives. They conclude that once survivorship is taken into consideration the U.S. equity risk premium is overstated by approximately 60 basis points.[7] The non-U.S. equity risk premium was found to contain significantly more survivorship bias.

While the survivorship bias evidence may be compelling on a worldwide basis, one can question its relevance to a purely U.S. analysis. If the entity being valued is a U.S. company, then the relevant data set should be the performance of equities in the U.S. market.

Equity Risk Premium Puzzle

In 1985, Mehra and Prescott published a paper that discussed the equity risk premium from a utility theory perspective. The point that Mehra and Prescott make is that under existing economic theory, economists cannot justify the magnitude of the equity risk premium. The utility theory model employed was incapable of obtaining values consistent with those observed in the market.

This is an interesting point and may be worthy of further study, but it does not do anything to prove that the equity risk premium is too high. It may, on the other hand, indicate that theoretical economic models require further refinement to adequately explain market behavior.

Discounted Cash Flow versus Capital Asset Pricing Model

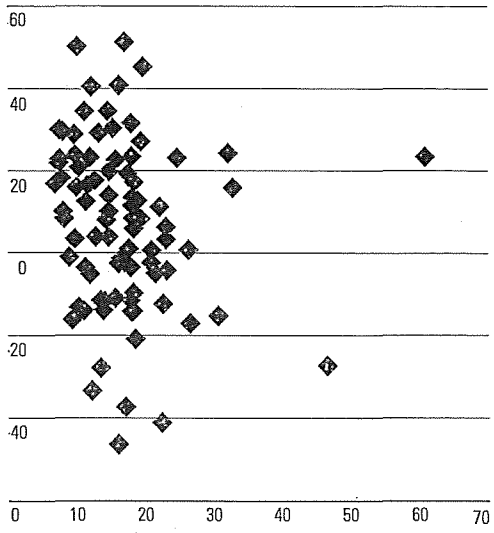
Two of the most commonly used cost of equity models are the discounted cash flow model and the capital asset pricing model. We should be able to reconcile the two models. In its basic form, the discounted cash flow model states that the expected return on equities is the dividend yield plus the expected long-term growth rate. The capital asset pricing model states that the expected return on equities is the risk-free rate plus the equity risk premium.[8]

For the discounted cash flow model we can obtain an estimate of the long-term growth rate for the entire economy by looking at its component parts. Real Gross Domestic Product growth has averaged approximately three percent over long periods of time. Long-term expected inflation is currently in the range of two percent. Combining these two numbers produces an expected long-term growth rate of about five percent. Dividend yields have been between two percent and three percent historically. The discounted cash flow expected equity return is thus between seven percent and eight percent using these assumptions.

If we try to reconcile this expected equity return with that found using the capital asset pricing model, we find a significant discrepancy. The yield on government bonds has averaged around five percent historically. If the two models are to reconcile, the equity risk premium must be in the two to three percent range instead of the seven to eight percent range we have observed historically.

It is not easy to explain why these two models are so difficult to reconcile. While it is possible to modify the assumptions slightly, doing so still does not produce the desired results. One explanation might be that one or both of the models are too simplistic and therefore lack the ability to resolve this inconsistency.

Graph 5-7: Price-Earnings Multiple versus Subsequent Year's Realized Equity Risk Premium



Data from 1926–2012. Source: Historical price/earnings ratios from Standard & Poor's Security Price Index Record and Compustat database.

Market Bubbles

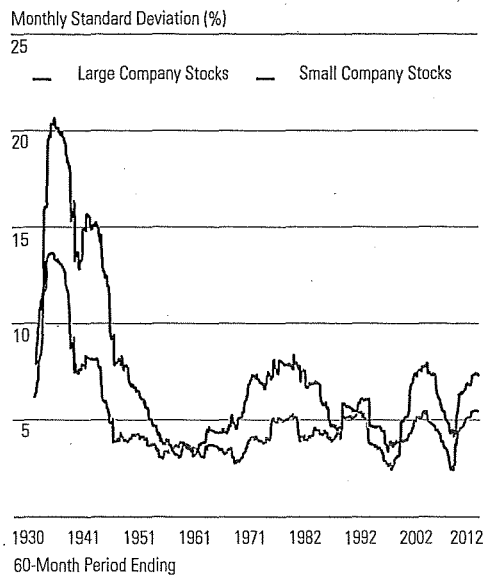
Another criticism of using the historical equity risk premium is that the market is overvalued. This argument is often offered after stock prices have seen a sustained increase. The logic of the argument is that abnormally high market returns drive the historical equity risk premium higher while at the same time driving the expected equity risk premium lower. As evidence of the market being overvalued, one can look at the price/earnings multiple of the market. Graph 5-7 attempts to demonstrate the relationship between the price/earnings multiple and the subsequent period's equity risk premium. If the above argument held, one would expect to find a low equity risk premium associated with a high price/earnings multiple from the prior period. One would also expect a high equity risk premium to be associated with a low price/earnings multiple in the prior period. From the graph there does not seem to be a clear indication of the market being overvalued or undervalued with respect to the next period's realized equity risk premium.

There are yet other problems with this theory. First, the equity risk premium is measured over a long historical time period. Several years of strong market returns have a relatively small impact on the ultimate equity risk premium estimate. Second, we are attempting to forecast a long-term equity risk premium. Even if the market were to underperform over several consecutive time periods, this should not have a significant impact on expected long-term returns. Finally, one ratio does not necessarily tell the whole story. The price/earnings ratio shows the current stock price divided by the historical earnings per share. Stock prices should, on the other hand, incorporate expectations of future earnings growth. A high market price/earnings ratio may indicate that investors expect significant future earnings growth.

Change in Investor Attitudes

There is no law that states that investor attitudes must remain constant over time. With the advent of 401(k) investing and the increase in education of the investing public, the market may have changed. In fact, stock returns have become less volatile over time. Graph 5-8 demonstrates a relative decline in the rolling 60-month standard deviation of both large and small stocks. (Standard deviation is a measure of the returns' volatility or risk.) This may suggest that we have moved into a new market regime in which stocks are less volatile and therefore require a lower risk premium than in the past.[9]

Graph 5-8: Rolling 60-Month Standard Deviation for Large and Small Stocks



Data from January 1926–December 2012.

There are two arguments against this rationale. First, it could easily be argued that we have moved through a series of market regimes during the 87-year history of the equity risk premium calculation window used in this book. Given that markets and investor attitudes have changed over time and the equity risk premium has remained relatively constant, there is no reason to believe that a new market regime will have any greater or lesser impact than any other time period.

A second argument relates to the demand for investments. If investors are more comfortable with the market and with stock investing, they will probably place more money into the market. This influx of funds will increase the demand for stocks, which will ultimately increase, not decrease, the equity risk premium.

Supply Model

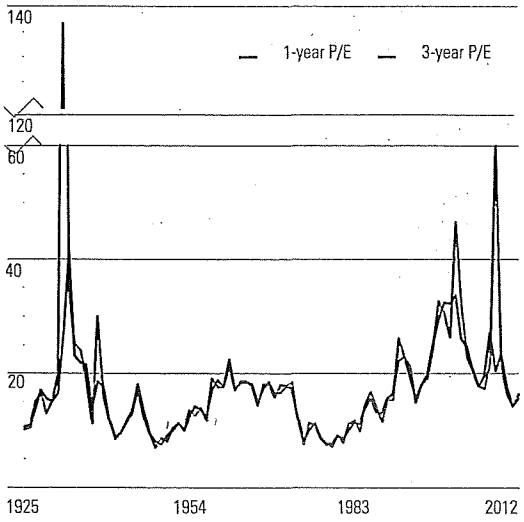
Long-term expected equity returns can be forecasted by the use of supply side models. The supply of stock market returns is generated by the productivity of the corporations in the real economy. Investors should not expect a much higher or lower return than that produced by the companies in the real economy. Thus, over the long run, equity returns should be close to the long-run supply estimate.

Roger G. Ibbotson and Peng Chen forecast the equity risk premium through a supply side model using historical data.[10] They utilized an earnings model as the basis for their supply side estimate; historically, the growth in corporate earnings has been in line with the growth of overall economic productivity. The earnings model breaks historical returns into four pieces, with only three historically being supplied by companies: inflation, income return, and growth in real earnings per share. The growth in the P/E ratio, the fourth piece, is a reflection of investors' changing prediction of future earnings growth. The past supply of corporate growth is forecasted to continue; however, a change in investors' predictions is not. P/E rose dramatically from 1980 through 2001 because people believed that corporate earnings were going to grow faster in the future. This growth of P/E drove a small portion of the rise in equity returns over the same period.

Graph 5-9 illustrates the price-to-earnings ratio calculated using one-year and three-year average earnings from 1926 to 2012. The P/E ratio, using one-year average earnings, was 10.22 at the beginning of 1926 and ended the year 2012 at 16.37—an average increase of 0.54 percent per year. The highest P/E was 136.55 recorded in 1932, while the lowest was 7.07 recorded in 1948.

Ibbotson Associates revised the calculation of the P/E ratio from a one-year to a three-year average earnings for use in equity forecasting. This is because reported earnings are affected not only by the long-term productivity, but also by "one-time" items that do not necessarily have the same consistent impact year after year. The three-year average is more reflective of the long-term trend than the year-by-year numbers. The P/E ratio calculated using the three-year average of earnings had an increase of 0.44 percent per year.

Graph 5-9: Large Company Stocks P/E Ratio



Data from 1926-2012.

The historical P/E growth factor using three-year earnings of 0.44 percent per year is subtracted from the forecast because it is not believed that P/E will continue to increase in the future. The market serves as the cue. The current P/E ratio is the market's best guess for the future of corporate earnings and there is no reason to believe, at this time, that the market will change its mind.

Thus, the supply of equity returns only includes inflation, the growth in real earnings per share, and income return:

$$SR = \left[\left(1+CPI\right)\times\left(1+g_{REPS}\right)-1\right]+Inc+Rinv$$

$$9.39^{*} = \left[\left(1+2.97\%\right)\times\left(1+2.07\%\right)-1\right]+4.06\%+0.21\%$$

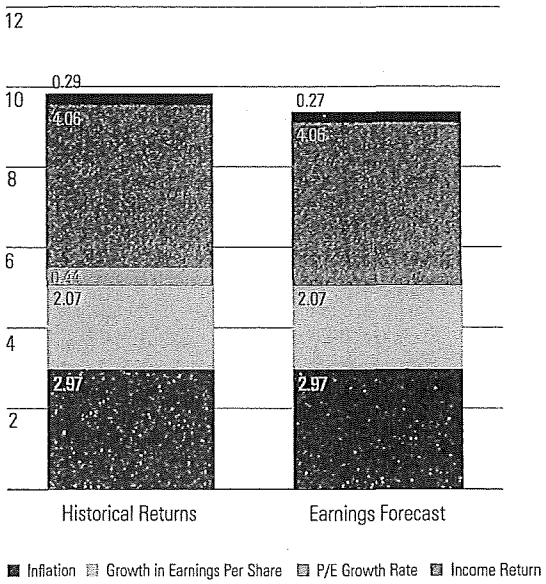
*difference due to rounding

where:

SR = the supply of the equity return;
CPI = Consumer Price Index (inflation);
g_{REPS} = the growth in real earning per share;
Inc = the income return;
Rinv = the reinvestment return.

The forward-looking earnings model calculates the long-term supply of U.S. equity returns to be 9.39 percent.

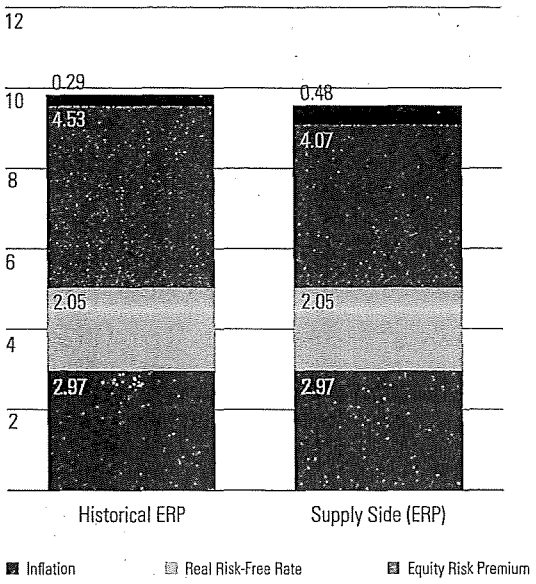
Graph 5-10: Historical and Forecast Equity Returns Based on Earnings Model



Data from 1926–2012. Results add up geometrically, not arithmetically. The darkest shade in the graph represents reinvested returns and an interaction factor between the return components.

Graph 5-10 illustrates the decomposition of historical equity returns from 1926–2012. It also illustrates the historical components that are supplied by companies: inflation, income return, and growth in real earnings per share. Once again the main difference between the historical and forecast equity returns is the exclusion of growth in P/E ratio in the forecasted earnings model.

Graph 5-11: Historical and Supply-Side Equity Risk Premium



Data from 1926–2012. Results add up geometrically, not arithmetically. The darkest shade in the graph represents reinvested returns and an interaction factor between the return components.

Table 5-6: Supply-Side and Historical Equity Risk Premium Over Time

Period Length (Yrs.)	Period Dates	g(P/E)	Arithmetic Average Supply Side Equity Risk Premium (%)	Arithmetic Average Historical Equity Risk Premium (%)
87	1926–2012	0.44*	6.11	6.70
86	1926–2011	0.34*	6.08	6.62
85	1926–2010	0.59	5.97	6.72
84	1926–2009	0.94	5.57	6.67
83	1926–2008	0.79	5.53	6.47
82	1926–2007	1.15	5.74	7.06
81	1926–2006	0.75	6.22	7.13
80	1926–2005	0.65	6.29	7.08
79	1926–2004	0.83	6.18	7.17
78	1926–2003	1.09	5.94	7.19
77	1926–2002	1.17	5.65	6.97
76	1926–2001	1.53	5.71	7.43
75	1926–2000	1.49	6.06	7.76
74	1926–1999	1.52	6.32	8.07
73	1926–1998	1.40	6.35	7.97
72	1926–1997	1.20	6.37	7.77
71	1926–1996	0.87	6.46	7.50
70	1926–1995	0.74	6.47	7.37
69	1926–1994	0.59	6.32	7.04
68	1926–1993	0.90	6.17	7.22
67	1926–1992	1.15	5.98	7.29
66	1926–1991	1.12	6.12	7.39
65	1926–1990	0.67	6.36	7.16
64	1926–1989	0.60	6.72	7.45
63	1926–1988	0.32	6.78	7.21

Data from 1926–2012. *Contains earnings estimate(s).

The supply-side equity risk premium is calculated to be 4.09 percent on a geometric basis.

$$SERP = \frac{(1+SR)}{(1+CPI)\times(1+RRf)} - 1$$

$$4.09\%^{*} = \frac{1+9.39\%}{(1+2.97\%)\times(1+2.05\%)} - 1$$

*difference due to rounding

where:

SERP = the supply-side equity risk premium;
SR = the supply of the equity return;
CPI = Consumer Price Index (inflation); and,
RRf = the real risk-free rate.

Graph 5-11 compares the historical equity risk premium, which includes the P/E ratio, to the supply-side equity risk premium calculated from 1926 to 2012 on a geometric basis. Contrary to several recent studies on equity risk premium that declare the forward-looking equity risk premium to be close to zero, or even negative, Ibbotson and Chen have found the long-term supply of equity risk premium to be only slightly lower than the straight historical estimate.

The supply-side equity risk premium calculated earlier is a geometric calculation. An arithmetic calculation, as mentioned earlier in the chapter, is most appropriate when discounting future cash flows. For use as the expected equity risk premium in either the CAPM or the buildup approach, the arithmetic calculation is the relevant number. There are several ways to convert the geometric average into an arithmetic average. One method is to assume the returns are independently lognormally distributed over time, where the arithmetic and geometric averages roughly follow the following relationship:

$$R_A = R_G + \frac{\sigma^2}{2}$$

$$6.13\%^{*} = 4.09\% + \frac{20.18\%^{2}}{2}$$

where:

R_A = the arithmetic average;
R_G = the geometric average;
σ = the standard deviation of equity returns.

As stated in IRS Ruling 59-60, although valuation is a forward-looking process, it must be based on facts available as of the required date of appraisal. Therefore, Ibbotson provides data critical to the valuation process as far back as 1926, such as the historical equity risk premium and size premium presented in Appendix A of this book. Similarly, Table 5-6 presents the supply side equity risk premium, on an arithmetic basis, beginning in 1926 and ending in each of the last 25 years.

As mentioned earlier, one of the key findings of the Ibbotson and Chen study is that P/E increases account for only a small portion of the total return of equity. The reason we present supply side equity risk premium going back only 25 years is because the P/E ratio rose dramatically over this time period, which caused the growth rate in the P/E ratio calculated from 1926 to be relatively high. The subtraction of the P/E growth factor from equity returns has been responsible for the downward adjustment in the supply side equity risk premium compared to the historical estimate. Beyond the last 25 years, the growth factor in the P/E ratio has not been dramatic enough to require an adjustment.

This section has briefly reviewed some of the more common arguments that seek to reduce the equity risk premium. While some of these theories are compelling in an academic framework, most do little to prove that the equity risk premium is too high. When examining these theories, it is important to remember that the equity risk premium data outlined in this book (both the historical and supply side estimates) are from actual market statistics over a long historical time period.

Considerations in Application

The supply-side equity risk premium has gained in popularity since its mainstream publication in 2003, but there have been many questions surrounding the model and its proper application. Any forward-looking model makes assumptions, and the supply model is no different. This section will draw from a more-exhaustive article by Magdalena Mroczek to help address some of the issues that commonly arise.[11]

The Meaning of "Supply Side"

Contrary to popular belief, the supply model does not refer to the economic supply and demand equilibrium of the market. In fact, it is termed the supply-side because it only takes into account company-generated, or company-supplied, returns. While the words "supply" and "demand" might portray images of economic equilibrium, they are really referring to a buildup of total-return components.

Stability of the Supply Model

As stated on Page 67, the supply-side equity risk premium uses a three-year average of earnings in calculating the P/E ratio as opposed to one-year earnings. In order to keep the three-year average earnings consistent with the current year's S&P 500 price, the earnings should be anchored around the same year as price. The average is composed of the prior year (t_{-1}), current year (t_0), and future year (t_{+1}) earnings, creating a price to three-year average earnings (P/3E) ratio.

Since both the current- and future-year earnings are estimates in each initial supply-side calculation, it takes two years of publications for the two earnings to actualize (all estimates are provided by Standard & Poors). For example, when calculating the 2012 supply-side equity risk premium, the earnings for 2012 (t_0) and 2013 (t_{+1}) are estimates. The 2012 supply-side equity risk premium will permanently stabilize in the 2015 Valuation Yearbook when actual earnings will be available for both 2012 and 2013. Therefore, the supply-side equity risk premium should change every year for two years and remain constant going forward.

Size Premium and Industry Risk Premium

The supply-side equity risk premium can be used alongside the size premium and industry risk premium calculated using the traditional historical equity risk premium as an input.

Some may think that the size premium needs to be recalculated as a supply model in order to use it with the supply-side equity risk premium. One way to arrive at this size premium would be to replace the historical equity risk premium with a supply-side equity risk premium when computing the expected returns for each decile. As explained in Chapter 7, size premium is calculated as the difference between a decile's actual return and its CAPM expected return. If the decile's actual return is measured using total returns and the CAPM expected return, as calculated using a supply-side equity risk premium, is in terms of supplied equity returns, then the resulting size premium would overcompensate for this mismatch. These different types of returns can cause high and unreasonable size premia.

One way to overcome the mismatch in return types and overstatement of size premium would be to remove historical P/E growth from each decile size category before computing excess returns based on size. Unfortunately, this, too, has its problems. One of the limitations to the supply model is that it relies on P/E growth measured over a defined starting and ending point. Subtracting P/E growth from each decile would be much more problematic, however, since the deciles are at their smallest membership and thinnest industry composition in 1926, the date when the P/E would be initialized. P/E growth simply cannot be removed from the individual deciles with the same confidence than it can from the overall market.

Computing industry risk premia with a supply-side equity risk premium input suffers from the same return mismatch issue as the size premium; the full information beta is calculated using total returns and the supply-side equity risk premium uses company-supplied returns. The full information beta is a 60-month beta and therefore uses too short of a time span to adjust for growth of P/E in the returns.[12] The supply-side equity risk premium calls for an annual P/E growth adjustment that incorporates three-year average earnings to normalize volatility, but this would not be appropriate to integrate into an industry risk premia calculation.

While it is internally inconsistent to apply a supply-side equity risk premium in a buildup model alongside a traditional size premium and industry premium, it is still the most practical way to apply this forward-looking adjustment to the cost of equity. The adjustment reflects the assumption that the historical P/E growth beginning in the 1980s was unsustainable and is not expected to repeat.

Supply-Side Relative to Historical Equity Risk Premium

A common belief in the industry is that the supply-side model always creates an equity risk premium lower than the historical model, but this is not the case. If investors foresee a future decline in earnings, price would drop in anticipation with no current change in earnings. The P/3E would need to drop below the 1926 P/3E level of 10.65 in order for the supply-side equity risk premium to be greater than the historical model. Looking back at the 87-year history, we can see this occurred 16 times. The supply-side equity risk premium was consistently greater than the historical model between 1977 and 1982 as well as throughout almost half of the 1940s and 1950s. In 1949, the difference between the two peaked when supply-side equity risk premium was 1.52 percent greater than the historical.

This unsustainable P/E growth, which began in the 1980s, is expected to return to historic levels in the future. Therefore, the historical and supply-side equity risk premiums are expected to converge over time.

Taxes and Equity Risk Premium Calculations

All of the risk premium statistics included in this publication are derived from market returns earned by an investor. The investor receives dividends and realizes price appreciation after the corporation has paid its taxes. Therefore, it is implicit that the market return data represents returns after corporate taxes but before personal taxes.

When performing a discounted cash flow analysis, both the discount rate and the cash flows should be on the same tax basis. Most valuation settings rely on after-tax cash flows; the use of an after-tax discount rate would thus be appropriate in most cases. However, there are some instances (usually because of regulatory or legal statute reasons) in which it is necessary to calculate a pre-tax value. In these cases, a pre-tax cost of capital or discount rate should be employed. There is no easy way, however, to accurately modify the return on a market index to a pre-tax basis. This modification would require estimating pre-tax returns for all of the publicly traded companies that comprise the market benchmark.

This presents a problem when a pre-tax discounted cash flow analysis is required. Although not completely correct, the easiest way to convert an after-tax discount rate to a pre-tax discount rate is to divide the after-tax rate by (1 minus the tax rate). This adjustment should be made to the entire discount rate and not to its component parts (i.e., the equity risk premium). Take note that this is a "quick and dirty" way to approximate pre-tax discount rates.

The tax rate to use in this "quick and dirty" method presents yet another problem. As seen in the discussion of the weighted average cost of capital in Chapter 1, companies do not always pay the top marginal tax rate. New research has shown some progress in quantifying the expected future tax rates. See Chapter 1 for more detail.

Endnotes

[1] Ibbotson, Roger G., Jeffrey J. Diermeier, and Laurence B. Siegel. "The Demand for Capital Market Returns: A New Equilibrium Theory," *Financial Analysts Journal*, January/February, vol. 40, no. 1, 1984, pp. 22-33.

Mehra, Rajnish and Edward Prescott. "The Equity Premium: A Puzzle," *Journal of Monetary Economics*, vol. 15, no. 2, 1985, pp. 145–161.

[2] Please note that the appropriate forward-looking measure of the riskless rate is the yield to maturity on the appropriate-horizon government bond. This differs from the riskless rate used to measure the realized equity risk premium historically. Chapter 4 includes a thorough discussion of riskless rate selection in this context.

[3] Fama, Eugene F., and Kenneth R. French."Permanent and Temporary Components of Stock Prices,"*Journal of Political Economy*, April 1988, pp. 246–273.

Poterba, James M., and Lawrence H. Summers. "Mean Reversion in Stock Prices," *Journal of Financial Economics*, October 1988, pp. 27–59.

Lo, Andrew W., and A. Craig MacKinlay. "Stock Market Prices Do Not Follow Random Walks: Evidence from a Simple Specification Test," *The Review of Financial Studies*, Spring 1988, pp. 41–66.

Finnerty, John D., and Dean Leistikow. "The Behavior of Equity and Debt Risk Premiums: Are They Mean Reverting and Downward-Trending?" *The Journal of Portfolio Management*, Summer 1993, pp. 73–84.

Ibbotson, Roger G., and Scott L. Lummer. "The Behavior of Equity and Debt Risk Premiums: Comment," *The Journal of Portfolio Management*, Summer 1994, pp. 98–100.

Finnerty, John D., and Dean Leistikow. "The Behavior of Equity and Debt Risk Premiums: Reply to Comment," *The Journal of Portfolio Management*, Summer 1994, pp. 101–102.

[4] Though the study performed by Finnerty and Leistikow demonstrates that the traditional equity risk premium exhibits no mean reversion or drift, they conclude that, "the processes generating these risk premiums are generally mean-reverting."This conclusion is completely unrelated to their statistical findings and has received some criticism. In addition to examining the traditional equity risk premia, Finnerty and Leistikow include analyses on "real" risk premia as well as separate risk premia for income and capital gains. In their comments on the study, Ibbotson and Lummer show that these "real" risk premia adjust for inflation twice,"creating variables with no economic content." In addition, separating income and capital gains does not shed light on the behavior of the risk premia as a whole.

[5] This assertion is further corroborated by data presented in *Global Investing: The Professional's Guide to the World of Capital Markets* (by Roger G. Ibbotson and Gary P. Brinson and published by McGraw-Hill, New York). Ibbotson and Brinson constructed a stock market total return series back to 1790. Even with some uncertainty about the accuracy of the data before the mid-nineteenth century, the results are remarkable. The real (adjusted for inflation) returns that investors received during the three 50-year periods and one 51-year period between 1790 and 1990 did not differ greatly from one another (that is, in a statistically significant amount). Nor did the real returns differ greatly from the overall 201-year average. This finding implies that because real stock market returns have been reasonably consistent over time, investors can use these past returns as reasonable bases for forming their expectations of future returns.

[6] Goetzmann, William, and Philippe Jorion. "A Century of Global Stock Markets," Working Paper 5901, National Bureau of Economic Research, 1997.

[7] Note that the equity risk premium referred to in the Goetzmann and Jorion paper is not the same as the equity risk premium covered in this publication. Among other differences, their equity risk premium is based on a longer history of data and does not take dividend income or reinvestment into account.

[8] The discounted cash flow model is a modification of the Gordon Growth model, which states that: where P_0 is the price of the security today, D_1 is the dividend from next period, k is the cost of equity, and g is the expected growth rate in dividends. The capital asset pricing model is stated as $k_i = \beta_i (ERP) + r_f$ where k_i is the cost of equity for company **i**, βi is the beta for company **i**, ERP is the equity risk premium, and r_f is the risk-free rate. For the market as a whole, the capital asset pricing model can be written as $k = ERP + r_f$ because the market beta, by definition, is 1. For more information on these models, see Chapter 4.

[9] Note that the recent increase in market volatility, particularly in 1998, may also place into question the validity of this argument.

[10] Ibbotson, Roger G., and Peng Chen."Long-Run Stock Returns: Participating in the Real Economy," *Financial Analysts Journal*, January/February, vol. 59, no.1, 2003, pp. 88–98.

[11] Mroczek, Magdalena. "Unraveling the Supply-Side Equity Risk Premum," The Value Examiner, The National Association of Certified Valuators and Analysts, January/February 2012, pp. 19-24.

[12] For more information on full information betas, see Chapter 6.

Missouri Gas Energy
Summary of Risk Premium Models for the
Staff's Seven Comparable Natural Gas Distribution Companies

	Staff's Seven Comparable Natural Gas Distribution Companies
Predictive Risk Premium Model ™ (PRPM™) (1)	12.70 %
Risk Premium Using an Adjusted Market Approach (2)	9.77 %
Average	11.97 %

Notes:
(1) From page 2 of this Schedule.
(2) From page 3 of this Schedule.

Missouri Gas Energy
Derivation of Common Equity Cost Rate
Using the Predictive Risk Premium Model ™ (PRPM ™)
MOPSC Staff's Seven Comparable Natural Gas Distribution Companies (1)

	AGL Resources Inc.	Atmos Energy Corporation	Laclede Group, Inc.	New Jersey Resources Corp.	Northwest Natural Gas Co.	Piedmont Natural Gas Co., Inc.	WGL Holdings, Inc.
GARCH Coefficient (2)	2.897293543	1.850725021	0.875522467	1.932432391	1.493077646	2.276043523	1.075521135
Average Variance (2)	0.25%	0.36%	0.75%	0.41%	0.33%	0.34%	0.41%
PRPM™ Derived Risk Premium (2)	9.12%	8.27%	8.21%	9.82%	6.03%	9.72%	5.37%
Risk-Free Rate (3)	4.43%	4.43%	4.43%	4.43%	4.43%	4.43%	4.43%
Indicated Cost of Common Equity	13.55%	12.70%	12.64%	14.25%	10.46%	14.15%	9.80%
						Average	12.51%
						Median	12.70%

Notes:
(1) PRPM™ rum through first available trading month through December 2013.
(2) Based upon data from CRSP(R) Data © 2012, Center For Research in Security Prices (CRSP(R)), The University of Chicago Booth School of Business.
(3) Derived on Schedule PMA-12

Missouri Gas Energy
Indicated Common Equity Cost Rate
Through Use of a Risk Premium Model
Using an Adjusted Total Market Approach

Line No.		Staff's Seven Comparable Natural Gas Distribution
1.	Prospective Yield on Aaa Rated Corporate Bonds (1)	5.20 %
2.	Adjustment to Reflect Yield Spread Between Aaa Rated Corporate Bonds and A Rated Public Utility Bonds	0.17 (2)
3.	Adjusted Prospective Yield on A Rated Public Utility Bonds	5.37 %
6.	Equity Risk Premium (3)	4.40
7.	Risk Premium Derived Common Equity Cost Rate	9.77 %

Notes:
(1) Consensus forecast Moody's Aaa Rated Corporate bonds from Blue Chip Financial Forecasts (see pages 8 and 9 of this Schedule).
(2) The average yield spread of A rated public utility bonds over Aaa rated corporate bonds of 0.17% from page 5 of this Schedule.
(3) From page 6 of this Schedule.

Missouri Gas Energy
Comparison of Bond Ratings, Business Risk and Financial Risk Profiles for the
Staff's Seven Comparable Natural Gas Distribution Companies

	Moody's Bond Rating February 2014		Standard & Poor's Bond Rating February 2014							
	Bond Rating	Numerical Weighting (1)	Bond Rating	Numerical Weighting (1)	Credit Rating	Numerical Weighting (1)	Business Risk Profile (2)	Numerical Weighting (1)	Financial Risk Profile (2)	Numerical Weighting (1)
AGL Resources Inc. (3)	A2	6.0	A-/BBB+	7.5	BBB+	8.0	Strong	2.0	Significant	4.0
Atmos Energy Corporation	Baa1	8.0	A-	7.0	BBB+	8.0	Excellent	1.0	Significant	4.0
Laclede Group, Inc. (4)	A2	6.0	A+	5.0	A-	7.0	Excellent	1.0	Significant	4.0
New Jersey Resources Corp. (5)	Aa3	4.0	A+	5.0	A	6.0	Excellent	1.0	Intermediate	3.0
Northwest Natural Gas Co.	A1	5.0	AA-	4.0	A+	8.0	Excellent	1.0	Intermediate	3.0
Piedmont Natural Gas Co., Inc.	A3	7.0	A	6.0	A	6.0	Excellent	1.0	Intermediate	3.0
WGL Holdings, Inc. (6)	A2	6.0	A+	5.0	A+	5.0	Excellent	1.0	Intermediate	3.0
Average	A2	6.0	A	5.6		6.9	Excellent	1.1	Intermediate	3.4

Notes: (1) From page 5 of Schedule PMA-6 of Ms. Ahern's Direct testimony.
(2) From Standard & Poor's Issuer Ranking: U.S. Regulated Gas and Water Utilities, Strongest to Weakest, October 31, 2013.
(3) Ratings, business risk and financial risk profiles are those of Nicor Gas and Atlanta Gas Light Company.
(4) Ratings, business risk and financial risk profiles are those of Laclede Gas Company.
(5) Ratings, business risk and financial risk profiles are those of New Jersey Natural Gas Company.
(6) Ratings, business risk and financial risk profiles are those of Washington Gas Light Company.

Source Information: Moody's Investors Service
Standard & Poor's Global Utilities Rating Service

Moody's
Comparison of Interest Rate Trends
for the Three Months Ending December 2013 (1)

Months	Corporate Bonds Aaa Rated	Public Utility Bonds Aa Rated	Public Utility Bonds A Rated	Public Utility Bonds Baa Rated	Spread - Corporate v. Public Utility Bonds: Aa (Pub. Util.) over Aaa (Corp.)	Spread - Corporate v. Public Utility Bonds: A (Pub. Util.) over Aaa (Corp.)	Spread - Corporate v. Public Utility Bonds: Baa (Pub. Util.) over Aaa (Corp.)	Spread - Public Utility Bonds: A over Aa	Spread - Public Utility Bonds: Baa over A
December-13	4.62 %	4.59 %	4.81 %	5.25 %					
November-13	4.63	4.56	4.77	5.24					
October-13	4.53	4.48	4.70	5.17					
Average of Last 3 Months	4.59 %	4.54 %	4.76 %	5.22 %	(0.05) %	0.17 %	0.63 %	0.22 %	0.46 %

Notes: (1) All yields are distributed yields.

Source of Information: Mergent Bond Record, February 2014, Vol. 81, No. 2.

Missouri Gas Energy
Judgment of Equity Risk Premium for
the Staff's Seven Comparable Natural Gas Distribution Companies

Line No.		Staff's Seven Comparable Natural Gas Distribution Companies
1.	Calculated equity risk premium based on the total market using the beta approach (1)	4.10 %
2.	Mean equity risk premium based on a study using the holding period returns of public utilities with A rated bonds (2)	4.70
3.	Average equity risk premium	4.40 %

Notes: (1) From page 7 of this Schedule.
(2) From page 10 of this Schedule.

Missouri Gas Energy
Derivation of Equity Risk Premium Based on the Total Market Approach
Using the Beta for
the Staff's Seven Comparable Natural Gas Distribution Companies

Line No.		Staff's Seven Comparable Natural Gas Distribution Companies
	Based on SBBI Valuation Yearbook Data:	
1.	Ibbotson Equity Risk Premium (1)	5.60 %
2.	Ibbotson Equity Risk Premium based on PRPM™ (2)	9.32
	Based on Value Line Summary and Index:	
3.	Equity Risk Premium Based on Value Line Summary and Index (3)	4.02
4.	Conclusion of Equity Risk Premium (4)	6.31 %
5.	Adjusted Value Line Beta (5)	0.65
6	Beta Adjusted Equity Risk Premium	4.10 %

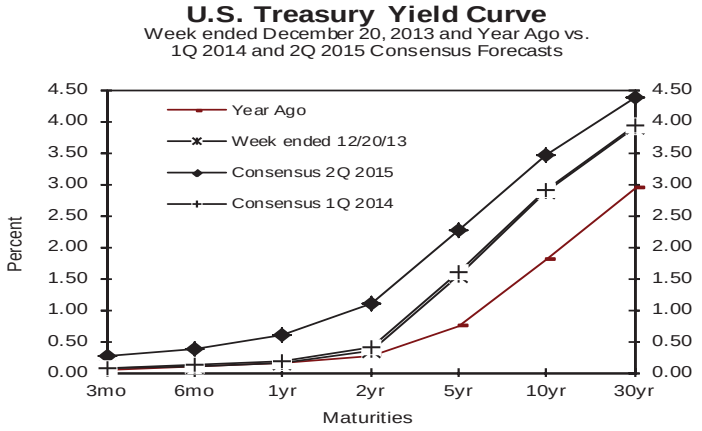
Notes:
(1) Based on the arithmetic mean historical monthly returns on large company common stocks from Ibbotson® SBBI® 2013 Valuation Yearbook - Market Results for Stocks, Bonds, Bills, and Inflation minus the arithmetic mean monthly yield of Moody's Aaa and Aa corporate bonds from 1926 - 2012. (11.83% - 6.23% = 5.60%).
(2) The Predictive Risk Premium Model (PRPM™) is discussed in Ms. Ahern's direct testimony. The Ibbotson equity risk premium based on the PRPM™ is derived by applying the PRPM™ to the monthly risk premiums between Ibbotson large company common stock monthly returns minus the average Aaa and Aa corporate monthly bond yields, from January 1928 through December 2013.
(3) The equity risk premium based on the Value Line Summary and Index is derived from taking the projected 3-5 year total annual market return of 9.22% and subtracting the average consensus forecast of Aaa corporate bonds of 5.20%. (9.22% - 5.20% = 4.02%).
(4) Average of Lines 1, 2, & 3.
(5) Median beta of the Proxy Group of 7 Natural Gas Distribution Companies.

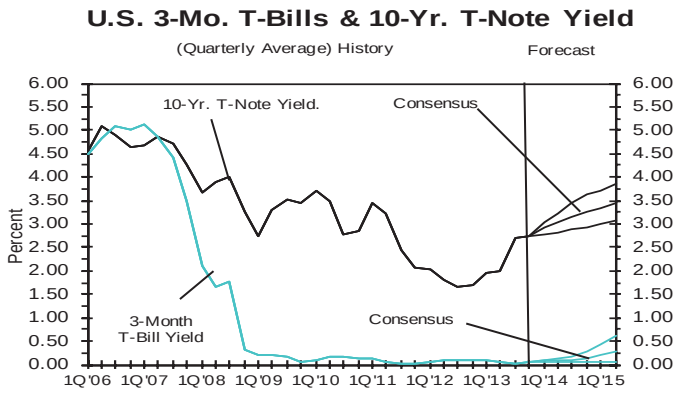
Sources of Information:
Ibbotson® SBBI® 2013 Valuation Yearbook - Market Results for Stocks, Bonds, Bills, and Inflation, Morningstar, Inc., 2013 Chicago, IL.
Industrial Manual and Mergent Bond Record Monthly Update.
Value Line Summary and Index
Blue Chip Financial Forecasts, December 1, 2013 and January 1, 2014

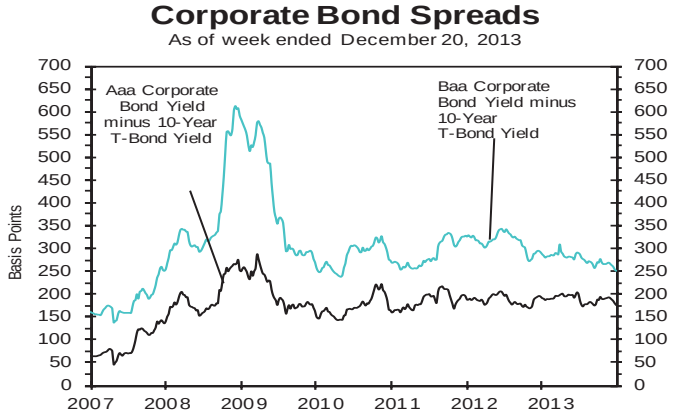
Consensus Forecasts Of U.S. Interest Rates And Key Assumptions[1]

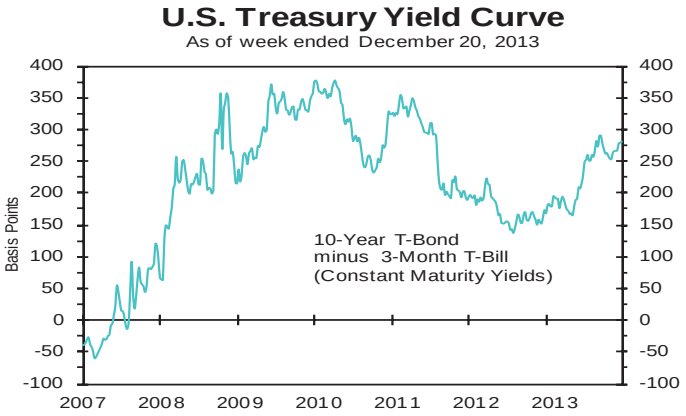
Interest Rates	Dec. 20	Dec. 13	Dec. 6	Nov. 29	Nov.	Oct.	Sep.	*Latest Q** *4Q 2013*	1Q 2014	2Q 2014	3Q 2014	4Q 2014	1Q 2015	2Q 2015
	History: Average For Week Ending				History: Average For Month				Consensus Forecasts-Quarterly Avg.					
Federal Funds Rate	0.09	0.09	0.08	0.09	0.08	0.09	0.08	*0.09*	**0.1**	**0.1**	**0.2**	**0.2**	**0.2**	**0.3**
Prime Rate	3.25	3.25	3.25	3.25	3.25	3.25	3.25	*3.25*	**3.3**	**3.3**	**3.3**	**3.3**	**3.3**	**3.4**
LIBOR, 3-mo.	0.24	0.24	0.24	0.24	0.24	0.24	0.25	*0.24*	**0.3**	**0.3**	**0.3**	**0.4**	**0.4**	**0.5**
Commercial Paper, 1-mo.	0.07	0.08	0.05	0.06	0.05	0.07	0.05	*0.06*	**0.1**	**0.1**	**0.1**	**0.2**	**0.2**	**0.3**
Treasury bill, 3-mo.	0.07	0.07	0.06	0.07	0.07	0.05	0.02	*0.06*	**0.1**	**0.1**	**0.1**	**0.1**	**0.2**	**0.3**
Treasury bill, 6-mo.	0.09	0.10	0.10	0.11	0.10	0.08	0.04	*0.09*	**0.1**	**0.1**	**0.2**	**0.2**	**0.3**	**0.4**
Treasury bill, 1 yr.	0.14	0.14	0.13	0.13	0.12	0.12	0.12	*0.13*	**0.2**	**0.2**	**0.3**	**0.3**	**0.5**	**0.6**
Treasury note, 2 yr.	0.34	0.32	0.30	0.29	0.30	0.34	0.40	*0.32*	**0.4**	**0.5**	**0.6**	**0.8**	**0.9**	**1.1**
Treasury note, 5 yr.	1.54	1.51	1.46	1.36	1.37	1.37	1.60	*1.41*	**1.6**	**1.7**	**1.8**	**2.0**	**2.1**	**2.3**
Treasury note, 10 yr.	2.88	2.86	2.84	2.74	2.72	2.62	2.81	*2.73*	**2.9**	**3.0**	**3.1**	**3.3**	**3.3**	**3.4**
Treasury note, 30 yr.	3.89	3.87	3.88	3.82	3.80	3.68	3.79	*3.79*	**3.9**	**4.0**	**4.1**	**4.2**	**4.3**	**4.4**
Corporate Aaa bond	4.64	4.66	4.69	4.62	4.63	4.53	4.64	*4.61*	**4.7**	**4.8**	**4.9**	**5.0**	**5.1**	**5.2**
Corporate Baa bond	5.39	5.40	5.44	5.37	5.38	5.31	5.47	*5.37*	**5.5**	**5.6**	**5.7**	**5.8**	**5.9**	**6.0**
State & Local bonds	4.73	4.74	4.70	4.61	4.60	4.56	4.79	*4.63*	**4.7**	**4.8**	**4.8**	**4.9**	**4.9**	**5.0**
Home mortgage rate	4.47	4.42	4.46	4.29	4.26	4.19	4.49	*4.30*	**4.6**	**4.7**	**4.8**	**4.9**	**5.0**	**5.1**
	1Q 2012	2Q 2012	3Q 2012	4Q 2012	1Q 2013	2Q 2013	3Q 2013	*4Q** *2013*	1Q 2014	2Q 2014	3Q 2014	4Q 2014	1Q 2015	2Q 2015
Key Assumptions	History								Consensus Forecasts-Quarterly					
Major Currency Index	72.9	73.9	74.0	73.2	74.7	76.4	76.7	*76.4*	**76.4**	**76.8**	**77.1**	**77.4**	**77.5**	**77.5**
Real GDP	3.7	1.2	2.8	0.1	1.1	2.5	4.1	*1.9*	**2.5**	**2.7**	**2.8**	**2.9**	**3.0**	**3.0**
GDP Price Index	2.0	1.8	2.3	1.1	1.3	0.6	2.0	*1.4*	**1.7**	**1.8**	**1.9**	**1.9**	**2.0**	**2.0**
Consumer Price Index	2.3	1.0	2.1	2.2	1.4	0.0	2.6	*0.9*	**1.7**	**1.9**	**2.1**	**2.0**	**2.1**	**2.1**

Forecasts for interest rates and the Federal Reserve's Major Currency Index represent averages for the quarter. Forecasts for Real GDP, GDP Price Index and Consumer Price Index are seasonally-adjusted annual rates of change (saar). Individual panel members' forecasts are on pages 4 through 9. Historical data for interest rates except LIBOR is from Federal Reserve Release (FRSR) H.15. LIBOR quotes available from *The Wall Street Journal*. Interest rate definitions are same as those in FRSR H.15. Treasury yields are reported on a constant maturity basis. Historical data for Fed's Major Currency Index is from FRSR H.10 and G.5. Historical data for Real GDP and GDP Chained Price Index are from the Bureau of Economic Analysis (BEA). Consumer Price Index (CPI) history is from the Department of Labor's Bureau of Labor Statistics (BLS). **Interest rate data for 4Q 2014 based on historical data through the week ended December 20th. *Data for 4Q 2013 Major Currency Index is based on data through week ended December 20th. Figures for 4Q 2013 Real GDP, GDP Chained Price Index and Consumer Price Index are consensus forecasts based on a special question asked of the panelists' this month*









Long-Range Estimates:

The table below contains results of our semi-annual long-range CONSENSUS survey. There are also Top 10 and Bottom 10 averages for each variable. Shown are estimates for the years 2015 through 2019 and averages for the five-year periods 2015-2019 and 2020-2024. Apply these projections cautiously. Few economic, demographic and political forces can be evaluated accurately over such long time spans.

		----------Average For The Year----------					Five-Year Averages	
Interest Rates		**2015**	**2016**	**2017**	**2018**	**2019**	**2015-2019**	**2020-2024**
1. Federal Funds Rate	**CONSENSUS**	**0.4**	**1.7**	**2.9**	**3.6**	**3.9**	**2.5**	**3.7**
	Top 10 Average	0.8	2.6	3.9	4.2	4.5	3.2	4.4
	Bottom 10 Average	0.2	0.8	1.6	2.6	3.1	1.6	2.9
2. Prime Rate	**CONSENSUS**	**3.5**	**4.8**	**6.0**	**6.6**	**6.9**	**5.6**	**6.7**
	Top 10 Average	3.9	5.6	6.9	7.2	7.6	6.2	7.4
	Bottom 10 Average	3.3	4.1	5.0	5.7	6.1	4.8	5.8
3. LIBOR, 3-Mo.	**CONSENSUS**	**0.9**	**2.2**	**3.3**	**4.0**	**4.2**	**2.9**	**4.0**
	Top 10 Average	1.6	3.3	4.6	5.0	5.2	3.9	5.0
	Bottom 10 Average	0.4	1.1	2.0	2.8	3.3	1.9	3.0
4. Commercial Paper, 1-Mo.	**CONSENSUS**	**0.6**	**2.0**	**3.1**	**3.7**	**3.9**	**2.6**	**3.7**
	Top 10 Average	1.0	2.7	3.9	4.3	4.5	3.3	4.3
	Bottom 10 Average	0.3	1.3	2.3	2.9	3.1	2.0	3.0
5. Treasury Bill Yield, 3-Mo.	**CONSENSUS**	**0.5**	**1.7**	**2.9**	**3.5**	**3.7**	**2.5**	**3.6**
	Top 10 Average	1.0	2.7	3.9	4.3	4.5	3.3	4.3
	Bottom 10 Average	0.2	0.8	1.7	2.4	3.0	1.6	2.7
6. Treasury Bill Yield, 6-Mo.	**CONSENSUS**	**0.7**	**2.0**	**3.1**	**3.7**	**3.9**	**2.7**	**3.8**
	Top 10 Average	1.2	2.9	4.1	4.5	4.6	3.5	4.5
	Bottom 10 Average	0.3	1.1	1.9	2.7	3.1	1.8	2.8
7. Treasury Bill Yield, 1-Yr.	**CONSENSUS**	**0.9**	**2.2**	**3.2**	**3.8**	**4.0**	**2.8**	**3.9**
	Top 10 Average	1.5	3.2	4.3	4.7	4.8	3.7	4.6
	Bottom 10 Average	0.4	1.2	2.0	2.8	3.1	1.9	2.9
8. Treasury Note Yield, 2-Yr.	**CONSENSUS**	**1.4**	**2.6**	**3.6**	**4.0**	**4.3**	**3.2**	**4.2**
	Top 10 Average	2.0	3.5	4.5	4.9	5.0	4.0	4.9
	Bottom 10 Average	0.8	1.7	2.4	3.1	3.5	2.3	3.3
10. Treasury Note Yield, 5-Yr.	**CONSENSUS**	**2.3**	**3.3**	**4.1**	**4.4**	**4.6**	**3.7**	**4.4**
	Top 10 Average	2.9	4.0	4.8	5.1	5.3	4.4	5.1
	Bottom 10 Average	1.7	2.6	3.2	3.5	3.7	2.9	3.6
11. Treasury Note Yield, 10-Yr.	**CONSENSUS**	**3.4**	**4.1**	**4.6**	**4.8**	**5.0**	**4.4**	**4.9**
	Top 10 Average	3.9	4.8	5.3	5.6	5.8	5.1	5.6
	Bottom 10 Average	2.8	3.5	3.8	4.0	4.1	3.7	4.0
12. Treasury Bond Yield, 30-Yr.	**CONSENSUS**	**4.3**	**4.7**	**5.2**	**5.5**	**5.6**	**5.0**	**5.5**
	Top 10 Average	4.8	5.5	6.0	6.3	6.5	5.8	6.2
	Bottom 10 Average	3.7	4.0	4.4	4.6	4.7	4.3	4.6
13. Corporate Aaa Bond Yield	**CONSENSUS**	**4.9**	**5.4**	**5.9**	**6.2**	**6.3**	**5.7**	**6.2**
	Top 10 Average	5.6	6.2	6.7	7.0	7.2	6.5	7.0
	Bottom 10 Average	4.2	4.5	4.9	5.2	5.3	4.8	5.3
13. Corporate Baa Bond Yield	**CONSENSUS**	**5.9**	**6.3**	**6.8**	**7.1**	**7.2**	**6.7**	**7.0**
	Top 10 Average	6.5	7.1	7.5	7.9	8.1	7.4	7.9
	Bottom 10 Average	5.1	5.4	5.7	6.1	6.1	5.7	6.0
14. State & Local Bonds Yield	**CONSENSUS**	**4.8**	**5.2**	**5.6**	**5.7**	**5.7**	**5.4**	**5.5**
	Top 10 Average	5.2	5.9	6.3	6.5	6.6	6.1	6.3
	Bottom 10 Average	4.3	4.5	4.8	4.9	4.9	4.7	4.7
15. Home Mortgage Rate	**CONSENSUS**	**5.1**	**5.6**	**6.1**	**6.4**	**6.5**	**5.9**	**6.4**
	Top 10 Average	5.6	6.3	6.9	7.1	7.3	6.6	7.1
	Bottom 10 Average	4.4	5.0	5.3	5.5	5.6	5.2	5.6
A. FRB - Major Currency Index	**CONSENSUS**	**77.8**	**78.4**	**78.8**	**79.1**	**79.2**	**78.7**	**79.7**
	Top 10 Average	81.0	82.3	83.4	84.2	84.4	83.1	84.8
	Bottom 10 Average	74.6	74.3	74.0	73.7	74.0	74.1	74.7
		----------Year-Over-Year, % Change----------					Five-Year Averages	
		2015	**2016**	**2017**	**2018**	**2019**	**2015-2019**	**2020-2024**
B. Real GDP	**CONSENSUS**	**3.0**	**2.9**	**2.7**	**2.6**	**2.5**	**2.7**	**2.4**
	Top 10 Average	3.5	3.3	3.1	2.9	2.9	3.1	2.7
	Bottom 10 Average	2.5	2.5	2.3	2.1	2.2	2.3	2.1
C. GDP Chained Price Index	**CONSENSUS**	**2.0**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**	**2.1**
	Top 10 Average	2.5	2.5	2.6	2.5	2.5	2.5	2.5
	Bottom 10 Average	1.5	1.7	1.7	1.7	1.7	1.7	1.7
D. Consumer Price Index	**CONSENSUS**	**2.2**	**2.3**	**2.3**	**2.3**	**2.3**	**2.3**	**2.3**
	Top 10 Average	2.6	2.8	2.8	2.8	2.8	2.8	2.8
	Bottom 10 Average	1.7	1.9	1.9	1.9	2.0	1.9	1.9

Missouri Gas Energy
Derivation of Mean Equity Risk Premium Based on a Study
Using Holding Period Returns of Public Utilities

		Over A Rated Moody's Public Utility Bonds - AUS Consultants Study (1)
Missouri Gas Energy		
1.	Arithmetic Mean Holding Period Returns on the Standard & Poor's Utility Index 1926-2012 (2):	10.69 %
2.	Arithmetic Mean Yield on Moody's A Rated Public Utility Yields 1926-2012	(6.53)
3.	Historical Equity Risk Premium	4.16 %
4.	Forecasted Equity Risk Premium Based on PRPM™ (3)	5.24
5.	Average of Historical and PRPM™ Equity Risk Premium	4.70 %

Notes: (1) Based on S&P Public Utility Index monthly total returns and Moody's Public Utility Bond average monthly yields from 1928-2012, (AUS Consultants, 2013).

(2) Holding period returns are calculated based upon income received (dividends and interest) plus the relative change in the market value of a security over a one-year holding period.

(3) The Predictive Risk Premium Model (PRPM™) is applied to the risk premium of the monthly total returns of the S&P Utility Index and the monthly yields on Moody's A rated public utility bonds from 1928 - 2012.

Missouri Gas Energy
Return on Common Equity Comparison
for MOPSC Staff's Seven Comparable Natural Gas Distribution Companies

MOPSC Staff's Seven Comparable Natural Gas Distribution Companies	Value Line Projected ROE - 2016-2018	Current Authorized ROE
AGL Resources, Inc.	10.50 %	10.17 %
Atmos Energy Corp.	9.50	11.72
Laclede Group Inc.	10.00	NA (1)
New Jersey Resources Corp.	14.00	10.30
Northwest Natural Gas	10.00	9.50
Piedmont Natural Gas Company, Inc.	10.00	10.40
WGL Holdings, Inc.	10.00	9.58
Average	10.57 %	10.28 %

Sources: Value Line Investment Survey, Ratings & Reports, December 6, 2013

Regulatory Research Associates (an SNL Financial company)

(1) Settlement

AGL RESOURCES NYSE-GAS

RECENT PRICE 47.24 | P/E RATIO 16.1 (Trailing: 16.9 Median: 13.0) | RELATIVE P/E RATIO 0.88 | DIV'D YLD 4.0% | VALUE LINE

TIMELINESS 3 Lowered 9/20/13
SAFETY 1 Raised 9/9/11
TECHNICAL 3 Lowered 10/25/13
BETA .75 (1.00 = Market)

2016-18 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	65	(+40%)	*12%*
Low	55	(+15%)	*8%*

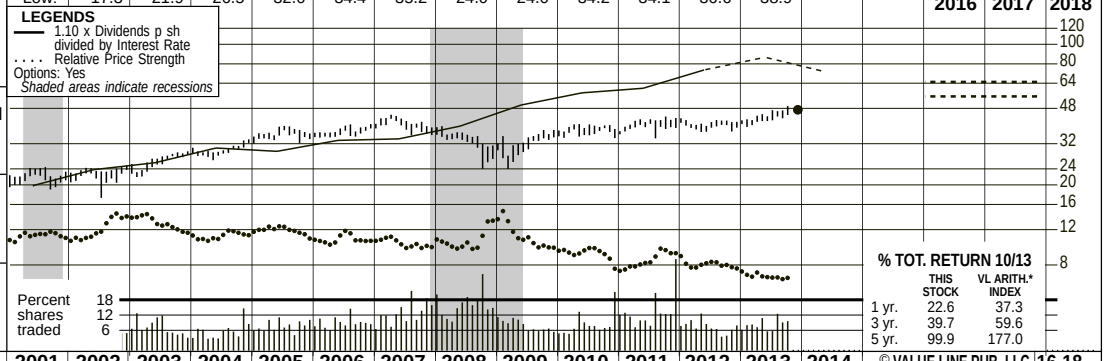
Insider Decisions

	J	F	M	A	M	J	J	A	S
to Buy	0	0	0	0	0	0	0	0	0
Options	0	1	0	0	2	0	0	3	0
to Sell	0	2	0	1	2	0	0	3	1

Institutional Decisions

	1Q2013	2Q2013	3Q2013
to Buy	158	146	190
to Sell	136	154	127
Hld's(000)	73402	74626	76579

High:	25.0	29.3	33.7	39.3	40.1	44.7	39.1	37.5	40.1	43.7	42.9	49.3						
Low:	17.3	21.9	26.5	32.0	34.4	35.2	24.0	24.0	34.2	34.1	36.6	38.9						



Target Price Range 2016 | 2017 | 2018
120 100 80 64 48 32 24 20 16 12 8

% TOT. RETURN 10/13

	THIS STOCK	VL ARITH.* INDEX
1 yr.	22.6	37.3
3 yr.	39.7	59.6
5 yr.	99.9	177.0

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	© VALUE LINE PUB. LLC	16-18
22.75	23.36	18.71	11.25	19.04	15.32	15.25	23.89	34.98	33.73	32.64	36.41	29.88	30.42	19.97	33.27	*38.15*	*39.15*	Revenues per sh A	*42.40*
2.42	2.65	2.29	2.86	3.31	3.39	3.47	3.29	4.20	4.50	4.65	4.68	4.90	5.05	3.06	5.82	*6.50*	*6.85*	"Cash Flow" per sh	*7.95*
1.37	1.41	.91	1.29	1.50	1.82	2.08	2.28	2.48	2.72	2.72	2.71	2.88	3.00	2.12	2.32	*2.70*	*2.95*	Earnings per sh A B	*3.90*
1.08	1.08	1.08	1.08	1.08	1.08	1.11	1.15	1.30	1.48	1.64	1.68	1.72	1.76	1.90	1.74	*1.88*	*1.92*	Div'ds Decl'd per sh CF■	*2.32*
2.59	2.05	2.51	2.92	2.83	3.30	2.46	3.44	3.44	3.26	3.39	4.84	6.14	6.54	3.65	6.63	*6.80*	*7.10*	Cap'l Spending per sh	*7.20*
10.99	11.42	11.59	11.50	12.19	12.52	14.66	18.06	19.29	20.71	21.74	21.48	22.95	23.24	28.33	28.76	*33.75*	*37.60*	Book Value per sh D	*37.20*
56.60	57.30	57.10	54.00	55.10	56.70	64.50	76.70	77.70	77.70	76.40	76.90	77.54	78.00	117.10	117.88	*118.00*	*120.00*	Common Shs Outst'g E	*125.00*
14.7	13.9	21.4	13.6	14.6	12.5	12.5	13.1	14.3	13.5	14.7	12.3	11.2	12.5	18.8	12.6	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*15.0*
.85	.72	1.22	.88	.75	.68	.71	.69	.76	.73	.78	.74	.75	.80	1.18	.82			Relative P/E Ratio	*1.00*
5.4%	5.5%	5.5%	6.2%	4.9%	4.7%	4.3%	3.9%	3.7%	4.0%	4.1%	5.0%	5.4%	4.7%	4.8%	4.8%			Avg Ann'l Div'd Yield	*3.3%*
983.7	1832.0	2718.0	2621.0	2494.0	2800.0	2317.0	2373.0	2338.0	3922.0	*4500*	*4700*	Revenues ($mill) A	*5300*
132.4	153.0	193.0	212.0	211.0	207.6	222.0	234.0	172.0	271.0	*320*	*355*	Net Profit ($mill)	*490*
35.9%	37.0%	37.7%	37.8%	37.6%	40.5%	35.2%	35.9%	40.2%	39.8%	*39.0%*	*37.0%*	Income Tax Rate	*32.5%*
13.5%	8.4%	7.1%	8.1%	8.5%	7.4%	9.6%	9.9%	7.4%	6.9%	*7.1%*	*7.5%*	Net Profit Margin	*9.2%*
50.3%	54.0%	51.9%	50.2%	50.2%	50.3%	52.6%	48.0%	51.8%	49.5%	*53.5%*	*47.0%*	Long-Term Debt Ratio	*51.0%*
49.7%	46.0%	48.1%	49.8%	49.8%	49.7%	47.4%	52.0%	48.2%	50.5%	*46.5%*	*53.0%*	Common Equity Ratio	*49.0%*
1901.4	3008.0	3114.0	3231.0	3335.0	3327.0	3754.0	3486.0	6879.0	6716.0	*7160*	*8560*	Total Capital ($mill)	*9470*
2352.4	3178.0	3271.0	3436.0	3566.0	3816.0	4146.0	4405.0	7900.0	8347.0	*8615*	*9130*	Net Plant ($mill)	*10875*
8.9%	6.3%	7.9%	8.0%	7.7%	7.4%	6.9%	7.6%	3.1%	5.4%	*6.0%*	*5.5%*	Return on Total Cap'l	*6.5%*
14.0%	11.0%	12.9%	13.2%	12.7%	12.6%	12.5%	12.9%	5.2%	8.0%	*9.5%*	*8.0%*	Return on Shr. Equity	*10.5%*
14.0%	11.0%	12.9%	13.2%	12.7%	12.6%	12.5%	12.9%	5.2%	8.0%	*9.5%*	*8.0%*	Return on Com Equity	*10.5%*
6.6%	5.6%	6.2%	6.3%	5.3%	5.1%	5.3%	5.6%	.7%	2.0%	*3.0%*	*2.5%*	Retained to Com Eq	*4.0%*
53%	49%	52%	52%	58%	60%	57%	57%	86%	75%	*70%*	*65%*	All Div'ds to Net Prof	*60%*

CAPITAL STRUCTURE as of 9/30/13
Total Debt $5187 mill. **Due in 5 Yrs** $2370 mill.
LT Debt $3816 mill. **LT Interest** $184 mill.
(Total interest coverage: 4.4x)

Leases, Uncapitalized Annual rentals $214.9 mill.
Pension Assets-12/12 $845.0 mill.
Oblig. $968.0 mill.

Pfd Stock None

Common Stock 118,788,590 shs.
as of 10/23/13

MARKET CAP: $5.6 billion (Large Cap)

CURRENT POSITION ($MILL.)	2011	2012	9/30/13
Cash Assets	69	131	131
Other	2677	2537	1960
Current Assets	2746	2668	2091
Accts Payable	294	334	304
Debt Due	1928	2214	1371
Other	862	790	732
Current Liab.	3084	3338	2407
Fix. Chg. Cov.	325%	330%	347%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '10-'12 to '16-'18
Revenues	5.0%	-3.0%	*7.0%*
"Cash Flow"	4.5%	1.5%	*9.5%*
Earnings	8.0%	1.5%	*8.0%*
Dividends	5.0%	6.5%	*4.5%*
Book Value	8.0%	5.0%	*5.5%*

Calendar	QUARTERLY REVENUES ($ mill.) A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2010	1003	359	346	665	2373
2011	878	375	295	790	2338
2012	1404	686	614	1218	3922
2013	1709	904	675	*1212*	*4500*
2014	*1920*	*745*	*635*	*1400*	*4700*

Calendar	EARNINGS PER SHARE AB Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2010	1.73	.17	.29	.81	3.00
2011	1.59	.23	d.04	.37	2.12
2012	1.12	.28	.08	.84	2.32
2013	1.31	.41	.24	*.74*	*2.70*
2014	*1.70*	*.25*	*.15*	*.85*	*2.95*

Calendar	QUARTERLY DIVIDENDS PAID CF■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2009	.43	.43	.43	.43	1.72
2010	.44	.44	.44	.44	1.76
2011	.45	.45	.45	.55	1.90
2012	.36	.46	.46	.46	1.74
2013	.47	.47	.47	.47	

BUSINESS: AGL Resources Inc. is a public utility holding company. Distribution subsidiaries include Atlanta Gas Light, Chattanooga Gas, Elizabethtown Gas, Virginia Natural Gas, Florida City Gas and Elkton Gas. Acquired Nicor in 2011. The utilities have more than 4.4 million customers in Georgia, Virginia, Tennessee, New Jersey, Florida, and Illinois. Engaged in nonregulated natural gas marketing and other allied services. Deregulated subsidiaries: Georgia Natural Gas markets natural gas at retail. BlackRock Inc. owns 7.0% of common stock; officers/directors, less than 1.0% (3/13 Proxy). President & CEO: John W. Somerhalder II. Inc.: GA. Addr.: Ten Peachtree Place N.E., Atlanta, GA 30309. Telephone: 404-584-4000. Internet: www.aglresources.com.

AGL Resources had solid third-quarter results. Colder temperatures through September helped increase the amount of natural gas usage for heating. Increased regulatory infrastructure programs helped the top line. Earnings of $0.24 a share were helped by good cost controls and a lower interest expense. A loss in the Wholesale segment was lessened by $21 million. We expect the weather to be colder than last year, as those temperatures were unusually warm over AGL's coverage areas. We raised our bottom-line estimate by $0.10, to $2.70.

The company received a positive outcome on its base rate case. The depreciation rate was lowered from 4.10% to 3.07%, retroactively to August 30th. This should help earnings in the fourth quarter, but will have no impact on cash flow. AGL is pursuing an infrastructure investment program, signed into law by the Illinois legislature. However, the company is under a base rate freeze until December, 2014 as part of its Nicor merger agreement, so the expected positive outcome would only factor into longer-term projections. The company received a favorable outcome in its Georgia request to replace approximately 750 miles of plastic pipeline, adding $275 million to the top line. An ongoing case in New Jersey has an anticipated result late in 2013.

The balance sheet remains in good shape. The total debt load remains manageable, but a shift higher in longer-term interest rates could hurt the bottom line. Cash flow looks like it will grow alongside the top line, and should have increased stability going forward. The company usually increases its dividend payment for the first quarter and, given the strong earnings this year, our 2014 estimate has some upside. Acquisitions and buybacks both appear unlikely.

This top-quality issue is ranked 3 (Average) for Timeliness. The yield remains both high and solid. Income-seeking and more-conservative investors would be well served by giving this issue a second glance as it carries our highest Price Stability score of 100, and a strong Financial Strength rating of A. Too, this issue offers modest appreciation potential out to 2016-2018.

John E. Seibert III *December 6, 2013*

(A) Fiscal year ends December 31st. Ended September 30th prior to 2002.
(B) Diluted earnings per share. May not add up due to rounding. Excl. nonrecurring gains (losses):'99, $0.39; '00, $0.13; '01, $0.13; '03, ($0.07); '08, $0.13. Next earnings report due late January. **(C)** Dividends historically paid early March, June, Sept., and Dec. ■ Div'd reinvest. plan available. **(D)** Includes intangibles. In 2012: $1,933 million, $17.91/share. **(E)** In millions. **(F)** Excluding special dividends from the Nicor merger.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	60
Earnings Predictability	65

ATMOS ENERGY CORP. NYSE-ATO

RECENT PRICE **44.80** | P/E RATIO **16.7** (Trailing: 17.8 Median: 14.0) | RELATIVE P/E RATIO **0.91** | DIV'D YLD **3.3%** | **VALUE LINE**

TIMELINESS 3 Lowered 7/12/13
SAFETY 2 Raised 12/16/05
TECHNICAL 4 Lowered 11/22/13
BETA .80 (1.00 = Market)

2016-18 PROJECTIONS

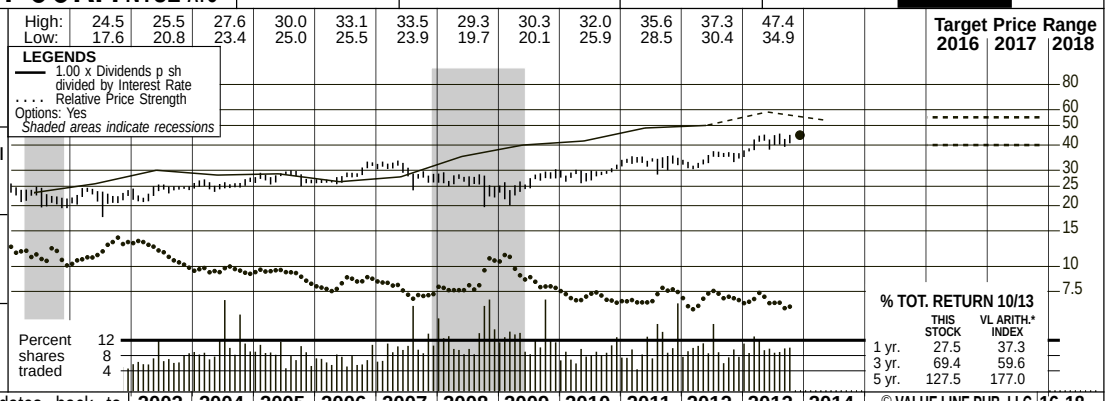
	Price	Gain	Ann'l Total Return
High	55	(+25%)	*8%*
Low	40	(-10%)	*1%*

Insider Decisions

	J	F	M	A	M	J	J	A	S
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	0	5	0	0	0	0
to Sell	0	0	3	0	0	1	0	0	0

Institutional Decisions

	1Q2013	2Q2013	3Q2013
to Buy	125	126	128
to Sell	120	121	123
Hld's(000)	56136	57357	60255



Atmos Energy's history dates back to 1906 in the Texas Panhandle. Over the years, through various mergers, it became part of Pioneer Corporation, and, in 1981, Pioneer named its gas distribution division Energas. In 1983, Pioneer organized Energas as a separate subsidiary and distributed the outstanding shares of Energas to Pioneer shareholders. Energas changed its name to Atmos in 1988. Atmos acquired Trans Louisiana Gas in 1986, Western Kentucky Gas Utility in 1987, Greeley Gas in 1993, United Cities Gas in 1997, and others.

CAPITAL STRUCTURE as of 6/30/13
Total Debt $2597.6 mill. **Due in 5 Yrs** $1320.0 mill.
LT Debt $2455.6 mill. **LT Interest** $110.0 mill.
(LT interest earned: 3.1x; total interest coverage: 3.1x)
Leases, Uncapitalized Annual rentals $17.6 mill.
Pfd Stock None
Pension Assets-9/12 $343.1 mill.
Oblig. $480.0 mill.
Common Stock 90,640,211 shs.
as of 8/2/13
MARKET CAP: $4.1 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2011	2012	6/30/13
Cash Assets	131.4	64.2	32.0
Other	879.6	763.8	650.3
Current Assets	1011.0	828.0	682.3
Accts Payable	291.2	215.2	229.9
Debt Due	208.8	571.1	142.0
Other	367.6	489.7	348.7
Current Liab.	867.6	1276.0	720.6
Fix. Chg. Cov.	432%	448%	445%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '10-'12 to '16-'18
Revenues	5.0%	-7.0%	*3.5%*
"Cash Flow"	4.0%	3.0%	*4.5%*
Earnings	5.0%	3.0%	*7.5%*
Dividends	1.5%	1.5%	*4.0%*
Book Value	6.5%	4.0%	*5.5%*

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) A Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2010	1292.9	1940.3	770.2	786.3	4789.7
2011	1133.3	1581.5	843.6	789.2	4347.6
2012	1084.0	1225.5	576.4	552.6	3438.5
2013	1034.2	1309.0	857.9	685.2	3886.3
2014	*1085*	*1390*	*945*	*780*	*4200*

Fiscal Year Ends	EARNINGS PER SHARE A B E Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2010	1.00	1.17	d.03	.02	2.16
2011	.81	1.40	.04	.01	2.26
2012	.68	1.12	.31	- -	2.10
2013	.85	1.23	.36	.08	2.50
2014	*.88*	*1.32*	*.40*	*.10*	*2.70*

Calendar	QUARTERLY DIVIDENDS PAID C■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2009	.33	.33	.33	.335	1.33
2010	.335	.335	.335	.34	1.35
2011	.34	.34	.34	.345	1.37
2012	.345	.345	.345	.35	1.39
2013	.35	.35	.35	.37	

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	© VALUE LINE PUB. LLC	16-18
	54.39	46.50	61.75	75.27	66.03	79.52	53.69	53.12	48.15	38.10	*42.95*	*45.65*	Revenues per sh A	*56.30*
	3.23	2.91	3.90	4.26	4.14	4.19	4.29	4.64	4.72	4.76	*5.15*	*5.35*	"Cash Flow" per sh	*6.20*
	1.71	1.58	1.72	2.00	1.94	2.00	1.97	2.16	2.26	2.10	2.50	*2.70*	Earnings per sh A B	*3.30*
	1.20	1.22	1.24	1.26	1.28	1.30	1.32	1.34	1.36	1.38	1.40	*1.48*	Div'ds Decl'd per sh C■	*1.70*
	3.10	3.03	4.14	5.20	4.39	5.20	5.51	6.02	6.90	8.12	*9.35*	*9.15*	Cap'l Spending per sh	*10.00*
	16.66	18.05	19.90	20.16	22.01	22.60	23.52	24.16	24.98	26.14	*28.50*	*30.50*	Book Value per sh	*34.65*
	51.48	62.80	80.54	81.74	89.33	90.81	92.55	90.16	90.30	90.24	*90.50*	*92.00*	Common Shs Outst'g D	*103.00*
	13.4	15.9	16.1	13.5	15.9	13.6	12.5	13.2	14.4	15.9	15.9		Avg Ann'l P/E Ratio	*14.5*
	.76	.84	.86	.73	.84	.82	.83	.84	.90	1.01	.91		Relative P/E Ratio	*.95*
	5.2%	4.9%	4.5%	4.7%	4.2%	4.8%	5.3%	4.7%	4.2%	4.1%	3.5%		Avg Ann'l Div'd Yield	*3.6%*
	2799.9	2920.0	4973.3	6152.4	5898.4	7221.3	4969.1	4789.7	4347.6	3438.5	3886.3	*4200*	Revenues ($mill) A	*5800*
	79.5	86.2	135.8	162.3	170.5	180.3	179.7	201.2	199.3	192.2	230.7	*250*	Net Profit ($mill)	*340*
	37.1%	37.4%	37.7%	37.6%	35.8%	38.4%	34.4%	38.5%	36.4%	33.8%	38.2%	*38.0%*	Income Tax Rate	*40.0%*
	2.8%	3.0%	2.7%	2.6%	2.9%	2.5%	3.6%	4.2%	4.6%	5.6%	5.9%	*6.0%*	Net Profit Margin	*5.9%*
	50.2%	43.2%	57.7%	57.0%	52.0%	50.8%	49.9%	45.4%	49.4%	45.3%	*49.0%*	*49.0%*	Long-Term Debt Ratio	*49.0%*
	49.8%	56.8%	42.3%	43.0%	48.0%	49.2%	50.1%	54.6%	50.6%	54.7%	*51.0%*	*51.0%*	Common Equity Ratio	*51.0%*
	1721.4	1994.8	3785.5	3828.5	4092.1	4172.3	4346.2	3987.9	4461.5	4315.5	*5035*	*5500*	Total Capital ($mill)	*7000*
	1516.0	1722.5	3374.4	3629.2	3836.8	4136.9	4439.1	4793.1	5147.9	5475.6	*6030*	*6440*	Net Plant ($mill)	*8000*
	6.2%	5.8%	5.3%	6.1%	5.9%	5.9%	5.9%	6.9%	6.1%	5.8%	*6.0%*	*6.0%*	Return on Total Cap'l	*6.5%*
	9.3%	7.6%	8.5%	9.8%	8.7%	8.8%	8.3%	9.2%	8.8%	8.1%	*9.0%*	*9.0%*	Return on Shr. Equity	*9.5%*
	9.3%	7.6%	8.5%	9.8%	8.7%	8.8%	8.3%	9.2%	8.8%	8.1%	*9.0%*	*9.0%*	Return on Com Equity	*9.5%*
	2.8%	1.7%	2.3%	3.6%	3.0%	3.1%	2.7%	3.5%	3.3%	2.8%	*4.0%*	*4.0%*	Retained to Com Eq	*4.5%*
	70%	77%	73%	63%	65%	65%	68%	62%	62%	65%	*56%*	*55%*	All Div'ds to Net Prof	*52%*

BUSINESS: Atmos Energy Corporation is engaged primarily in the distribution and sale of natural gas to more than three million customers through six regulated natural gas utility operations: Louisiana Division, West Texas Division, Mid-Tex Division, Mississippi Division, Colorado-Kansas Division, and Kentucky/Mid-States Division. Gas sales breakdown for 2012: 65%, residential; 28%, commercial; 3%, industrial; and 4% other. 2012 depreciation rate 3.3%. Has around 4,760 employees. Officers and directors own 1.2% of common stock (12/12 Proxy). President and Chief Executive Officer: Kim R. Cocklin. Incorporated: Texas. Address: Three Lincoln Centre, Suite 1800, 5430 LBJ Freeway, Dallas, Texas 75240. Telephone: 972-934-9227. Internet: www.atmosenergy.com.

Decent operating results appear to be in store for Atmos Energy Corporation in fiscal 2014, which began on October 1st. The bread-and-butter natural gas distribution unit stands to benefit nicely from a rise in throughput, if weather conditions cooperate (leading to a boost in consumption levels). Furthermore, the other divisions, including the regulated transmission and storage segment, ought to perform reasonably well, overall. All things considered, we look for this year's share net to advance about 8%, to $2.70. Assuming additional expansion of operating margins, the bottom line might grow at a similar rate, to $2.90 a share, in fiscal 2015.

We are constructive about the company's 2016-2018 prospects. Atmos is one of the country's largest natural gas-only distributors, boasting more than three million customers across eight states. Moreover, the other businesses, particularly pipelines, possess healthy overall growth potential. Lastly, it seems likely that management will eventually resume its successful strategy of acquiring less efficient utilities and shoring up their profitability via expense-reduction efforts, rate relief, and dogged marketing initiatives. (The last major transaction occurred in October, 2004, when Atmos Energy bought TXU Gas Company.)

The quarterly common stock dividend was recently increased almost 6%, to $0.37 a share. Our 2016-2018 projections indicate that further, steady hikes in the distribution probably will take place. The payout ratio over that period ought to be within a manageable range (i.e., 50% to 55%).

Atmos stock recently traded at its highest level ever. We believe that movement reflects the market's anticipation of decent operating results for the energy company during the new fiscal year. Other positives include a 2 (Above Average) Safety rating and excellent grade for Price Stability.

But 3- to 5-year total return potential is not attractive. That's partly because the recent quotation is already within our Target Price Range. Meanwhile, the shares are ranked 3 (Average) for Timeliness.

Frederick L. Harris, III December 6, 2013

(A) Fiscal year ends Sept. 30th. **(B)** Diluted shrs. Excl. nonrec. items: '03, d17¢; '06, d18¢; '07, d2¢; '09, 12¢; '10, 5¢; '11, (1¢). Excludes discontinued operations: '11, 10¢; '12, 27¢; '13, 14¢. Next egs. rpt. due early Feb. **(C)** Dividends historically paid in early March, June, Sept., and Dec. ■ Div. reinvestment plan. Direct stock purchase plan avail. **(D)** In millions. **(E)** Qtrs may not add due to change in shrs outstanding.

Company's Financial Strength	B++
Stock's Price Stability	100
Price Growth Persistence	65
Earnings Predictability	90

LACLEDE GROUP NYSE-LG

RECENT PRICE **46.61** | P/E RATIO **16.9** (Trailing: 16.6 Median: 14.0) | RELATIVE P/E RATIO **0.92** | DIV'D YLD **3.8%** | **VALUE LINE**

TIMELINESS 4 Lowered 8/16/13
SAFETY 2 Raised 6/20/03
TECHNICAL 3 Lowered 10/25/13
BETA .65 (1.00 = Market)

2016-18 PROJECTIONS

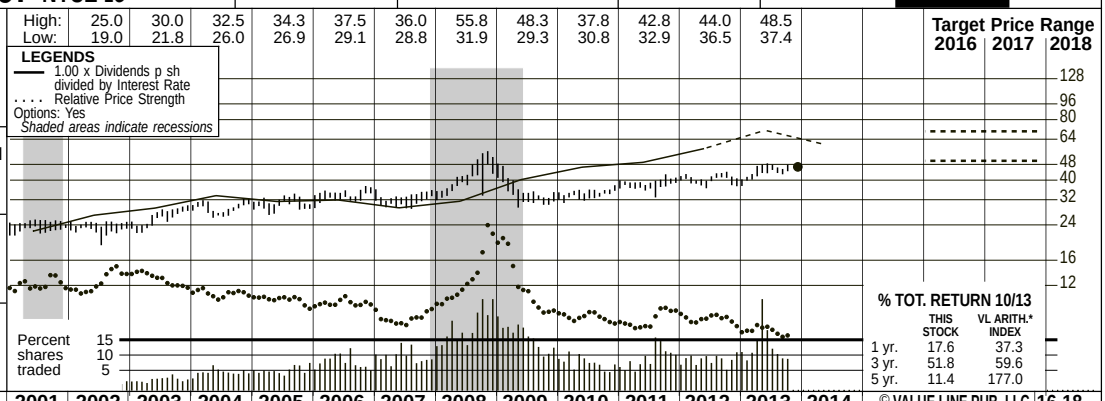
	Price	Gain	Ann'l Total Return
High	70	(+50%)	*13%*
Low	50	(+5%)	*5%*

Insider Decisions

	J	F	M	A	M	J	J	A	S
to Buy	0	0	0	0	0	0	0	0	0
Options	0	1	2	0	0	0	0	0	0
to Sell	0	1	2	0	0	0	0	0	0

Institutional Decisions

	1Q2013	2Q2013	3Q2013
to Buy	83	103	86
to Sell	55	60	68
Hld's(000)	13119	20780	21047



1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	© VALUE LINE PUB. LLC	16-18
34.33	31.04	26.04	29.99	53.08	39.84	54.95	59.59	75.43	93.51	93.40	100.44	85.49	77.83	71.48	49.76	39.19	*50.00*	Revenues per sh [A]	*56.05*
3.32	3.02	2.56	2.68	3.00	2.56	3.15	2.79	2.98	3.81	3.87	4.22	4.56	4.11	4.62	4.58	3.93	*4.75*	"Cash Flow" per sh	*5.85*
1.84	1.58	1.47	1.37	1.61	1.18	1.82	1.82	1.90	2.37	2.31	2.64	2.92	2.43	2.86	2.79	2.02	*2.95*	Earnings per sh [A B]	*3.85*
1.30	1.32	1.34	1.34	1.34	1.34	1.34	1.35	1.37	1.40	1.45	1.49	1.53	1.57	1.61	1.65	1.69	*1.76*	Div'ds Decl'd per sh [C■]	*2.00*
2.44	2.68	2.58	2.77	2.51	2.80	2.67	2.45	2.84	2.97	2.72	2.57	2.36	2.56	3.02	4.71	*4.50*	*5.80*	Cap'l Spending per sh	*5.60*
14.26	14.57	14.96	14.99	15.26	15.07	15.65	16.96	17.31	18.85	19.79	22.12	23.32	24.02	25.56	26.60	*40.32*	*34.70*	Book Value per sh [D]	*38.95*
17.56	17.63	18.88	18.88	18.88	18.96	19.11	20.98	21.17	21.36	21.65	21.99	22.17	22.29	22.43	22.62	*25.95*	*32.00*	Common Shs Outst'g [E]	*33.00*
12.5	15.5	15.8	14.9	14.5	20.0	13.6	15.7	16.2	13.6	14.2	14.3	13.4	13.7	13.0	14.5	*21.3*		Avg Ann'l P/E Ratio	*15.5*
.72	.81	.90	.97	.74	1.09	.78	.83	.86	.73	.75	.86	.89	.87	.82	.97	*1.22*		Relative P/E Ratio	*1.05*
5.6%	5.4%	5.8%	6.6%	5.7%	5.7%	5.4%	4.7%	4.4%	4.3%	4.4%	3.9%	3.9%	4.7%	4.3%	4.1%	3.9%		Avg Ann'l Div'd Yield	*3.8%*
1050.3	1250.3	1597.0	1997.6	2021.6	2209.0	1895.2	1735.0	1603.3	1125.5	1017.0	*1600*	Revenues ($mill) [A]	*1850*
34.6	36.1	40.1	50.5	49.8	57.6	64.3	54.0	63.8	63.1	52.8	*95.0*	Net Profit ($mill)	*127.0*
35.0%	34.8%	34.1%	32.5%	33.4%	31.3%	33.6%	33.4%	31.4%	32.0%	*25.0%*	*30.0%*	Income Tax Rate	*27.0%*
3.3%	2.9%	2.5%	2.5%	2.5%	2.6%	3.4%	3.1%	4.0%	5.6%	*5.2%*	*5.9%*	Net Profit Margin	*6.9%*
50.4%	51.6%	48.1%	49.5%	45.3%	44.4%	42.9%	40.5%	38.9%	36.0%	*46.6%*	*46.0%*	Long-Term Debt Ratio	*46.5%*
49.4%	48.3%	51.8%	50.4%	54.6%	55.5%	57.1%	59.5%	61.1%	64.0%	*53.4%*	*54.0%*	Common Equity Ratio	*53.5%*
605.0	737.4	707.9	798.9	784.5	876.1	906.3	899.9	937.7	941.0	*1960*	*2070*	Total Capital ($mill)	*2395*
621.2	646.9	679.5	763.8	793.8	823.2	855.9	884.1	928.7	1019.3	*1775*	*1865*	Net Plant ($mill)	*2160*
7.4%	6.6%	7.6%	8.4%	8.5%	8.1%	8.7%	7.4%	8.1%	6.5%	*3.5%*	*6.0%*	Return on Total Cap'l	*6.0%*
11.5%	10.1%	10.9%	12.5%	11.6%	11.8%	12.4%	10.1%	11.1%	10.6%	*5.0%*	*9.5%*	Return on Shr. Equity	*10.0%*
11.6%	10.1%	10.9%	12.5%	11.6%	11.8%	12.4%	10.1%	11.1%	10.6%	*5.0%*	*9.5%*	Return on Com Equity	*10.0%*
3.1%	2.7%	3.1%	5.1%	4.3%	5.2%	5.9%	3.6%	4.9%	4.3%	*1.0%*	*3.5%*	Retained to Com Eq	*4.5%*
74%	73%	72%	59%	63%	56%	53%	64%	56%	60%	*85%*	*60%*	All Div'ds to Net Prof	*52%*

CAPITAL STRUCTURE as of 9/30/13
Total Debt $912.7 mill. **Due in 5 Yrs** $100.0 mill.
LT Debt $912.7 mill. **LT Interest** $40.0 mill.
(Total interest coverage: 6.1x)

Leases, Uncapitalized Annual rentals $3.7 mill.
Pension Assets-9/11 $274.1 mill.
Oblig. $503.8 mill.
Pfd Stock None
Common Stock 32,709,763 shs.
as of 11/21/13

MARKET CAP: $1.5 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2011	2012	9/30/13
Cash Assets	43.3	27.5	53.0
Other	325.8	315.5	422.9
Current Assets	369.1	343.0	475.9
Accts Payable	96.6	89.5	140.2
Debt Due	46.0	25.0	- -
Other	89.3	137.6	213.0
Current Liab.	231.9	252.1	353.2
Fix. Chg. Cov.	463%	442%	337%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '10-'12 to '16-'18
Revenues	5.0%	-5.5%	*-3.0%*
"Cash Flow"	5.0%	4.5%	*4.5%*
Earnings	7.0%	4.0%	*6.0%*
Dividends	2.0%	3.0%	*3.5%*
Book Value	5.5%	6.5%	*-3.0%*

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.)[A] Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2010	491.2	635.3	324.5	284.0	1735.0
2011	444.2	543.8	344.3	271.0	1603.3
2012	410.9	358.2	186.9	169.5	1125.5
2013	307.0	397.6	165.3	147.1	1017.0
2014	*510*	*550*	*290*	*250*	*1600*

Fiscal Year Ends	EARNINGS PER SHARE [A B F] Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2010	1.03	1.26	.21	d.07	2.43
2011	1.05	1.25	.69	d.13	2.86
2012	1.12	1.32	.38	d.03	2.79
2013	1.14	1.34	.25	d.30	2.02
2014	*1.25*	*1.40*	*.40*	*d.10*	*2.95*

Cal-endar	QUARTERLY DIVIDENDS PAID [C■] Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2010	.395	.395	.395	.395	1.58
2011	.405	.405	.405	.405	1.62
2012	.415	.415	.415	.415	1.66
2013	.425	.425	.425	.425	
2014	.44				

BUSINESS: Laclede Group, Inc., is a holding company for Laclede Gas, which distributes natural gas in eastern Missouri, including the city of St. Louis, St. Louis County, and parts of 10 other counties. Has roughly 628,000 customers. Purchased SM&P Utility Resources, 1/02; divested, 3/08. Utility therms sold and transported in fiscal 2013: .86 bill. Revenue mix for regulated operations: residential, 65%; commercial and industrial, 21%; transportation, 2%; other, 12%. Has around 2,326 employees. Officers and directors own approximately 7% of common shares (1/13 proxy). Chairman: William E. Nasser; CEO: Suzanne Sitherwood. Incorporated: Missouri. Address: 720 Olive Street, St. Louis, Missouri 63101. Telephone: 314-342-0500. Internet: www.thelacledegroup.com.

Laclede reported lower-than-expected fiscal fourth-quarter earnings (years end September 30th). Indeed, costs related to the merger, and a lower than expected top line, caused the bottom-line loss to exceed our estimate. Still, the company is in a solid position heading into 2014, and income growth should be robust. The Missouri Gas Energy acquisition should start to pay off in the new fiscal year, and the company is nearing completion of its natural gas vehicle fueling station. Too, Laclede should look to achieve synergies of between $25 million and $34 million over the next 18 months. Missouri Gas also filed an infrastructure rate case, which could help in the latter half of the fiscal year. *Note: Due to share count changes, quarterly earnings per share will not add up.*

The purchase of Missouri Gas Energy has been completed for an aggregate price of approximately $975 million. Southern waived the requirement that Laclede purchase the NeGasCo assets at the same time, but Laclede could still be on the hook for purchasing the assets should Algonquin Power not receive regulatory approval, though we think this is unlikely.

The balance sheet has been greatly altered over the fiscal year. The sale of around 10 million shares and the raising of $430 million in new debt lifted total assets by $1 billion. The debt outstanding has an average interest rate of $4.35%, which boost earnings during a rising rate environment. Our 2013 book value per share will appear somewhat inflated due to the share dilution that occurred midyear.

Laclede raised its quarterly dividend to $0.44 a share. This increase of 3.5% is well covered by earnings, and has the potential to be further raised out to 2016-2018. This 11th consecutive raise is a top attribute of this issue.

The Timeliness rank of Laclede Group stock is 4 (Below Average). This equity currently is trading at an above-historical-average price-to-earnings ratio. It has high Price Stability, and a yield that is average for the sector. Still, most investors would be best served waiting for a better price entry point.

John E. Seibert III *December 6, 2013*

(A) Fiscal year ends Sept. 30th.
(B) Based on average shares outstanding in '97, then diluted. Excludes nonrecurring loss: '06, 7¢. Excludes gain from discontinued operations: '08, 94¢. Next earnings report due late January. **(C)** Dividends historically paid in early January, April, July, and October. ■ Dividend reinvestment plan available. **(D)** Incl. deferred charges. In '12: $456.0 mill., $20.41/sh. **(E)** In millions. **(F)** Qtly. egs. may not sum due to rounding or change in shares outstanding.

Company's Financial Strength	B++
Stock's Price Stability	100
Price Growth Persistence	50
Earnings Predictability	85

NEW JERSEY RES. NYSE-NJR

RECENT PRICE **45.78** | P/E RATIO **16.5** (Trailing: 16.9 Median: 16.0) | RELATIVE P/E RATIO **0.90** | DIV'D YLD **3.7%** | **VALUE LINE**

TIMELINESS 3 Lowered 9/20/13
SAFETY 1 Raised 9/15/06
TECHNICAL 4 Lowered 12/6/13
BETA .70 (1.00 = Market)

2016-18 PROJECTIONS

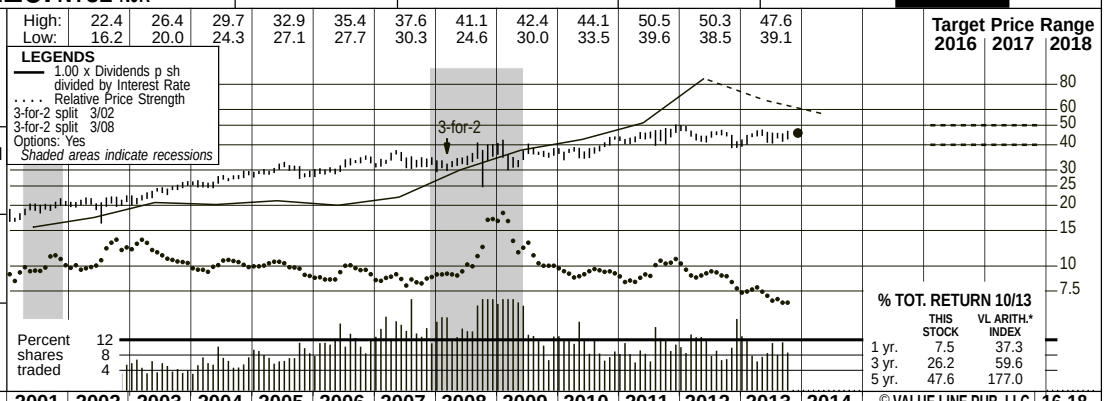
	Price	Gain	Ann'l Total Return
High	55	(+20%)	8%
Low	45	(Nil)	3%

Insider Decisions

	J	F	M	A	M	J	J	A	S
to Buy	0	0	0	0	0	0	0	1	0
Options	0	0	0	0	0	1	0	0	0
to Sell	0	3	0	0	0	1	0	0	0

Institutional Decisions

	1Q2013	2Q2013	3Q2013
to Buy	72	75	91
to Sell	68	64	58
Hld's(000)	24522	23432	23011



Target Price Range

2016	2017	2018

% TOT. RETURN 10/13

	THIS STOCK	VL ARITH.* INDEX
1 yr.	7.5	37.3
3 yr.	26.2	59.6
5 yr.	47.6	177.0

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	© VALUE LINE PUB. LLC	16-18
17.31	17.73	22.65	29.42	51.22	44.11	62.29	60.89	76.19	79.63	72.62	90.74	62.34	64.10	72.60	54.16	76.77	*82.35*	Revenues per sh [A]	*90.00*
1.63	1.74	1.86	1.99	2.12	2.14	2.38	2.50	2.62	2.73	2.44	3.62	3.16	3.26	3.40	3.74	***3.90***	***3.85***	"Cash Flow" per sh	*4.60*
.99	1.04	1.11	1.20	1.30	1.39	1.59	1.70	1.77	1.87	1.55	2.70	2.40	2.46	2.58	2.71	2.73	***2.80***	Earnings per sh [B]	*3.55*
.71	.73	.75	.76	.78	.80	.83	.87	.91	.96	1.01	1.11	1.24	1.36	1.44	1.54	1.60	***1.64***	Div'ds Decl'd per sh [C]■	*1.72*
1.15	1.07	1.21	1.23	1.10	1.02	1.14	1.45	1.28	1.28	1.46	1.72	1.81	2.10	2.26	2.00	***2.00***	***2.00***	Cap'l Spending per sh	*2.00*
6.92	7.26	7.57	8.29	8.80	8.71	10.26	11.25	10.60	15.00	15.50	17.28	16.59	17.62	18.73	18.15	***20.00***	***20.15***	Book Value per sh [D]	*25.55*
40.23	40.07	39.92	39.59	40.00	41.50	40.85	41.61	41.32	41.44	41.61	42.06	41.59	41.17	41.45	41.53	41.66	***40.00***	Common Shs Outst'g [E]	*40.00*
13.5	15.3	15.2	14.7	14.2	14.7	14.0	15.3	16.8	16.1	21.6	12.3	14.9	15.0	16.8	16.8	16.0		Avg Ann'l P/E Ratio	*14.0*
.78	.80	.87	.96	.73	.80	.80	.81	.89	.87	1.15	.74	.99	.95	1.05	1.08	.89		Relative P/E Ratio	*.95*
5.3%	4.6%	4.5%	4.4%	4.2%	3.9%	3.7%	3.3%	3.1%	3.2%	3.0%	3.3%	3.5%	3.7%	3.3%	3.3%	3.7%		Avg Ann'l Div'd Yield	*3.4%*
2544.4	2533.6	3148.3	3299.6	3021.8	3816.2	2592.5	2639.3	3009.2	2248.9	3198.1	***3295***	Revenues ($mill) [A]	*3600*
65.4	71.6	74.4	78.5	65.3	113.9	101.0	101.8	106.5	112.8	***115***	***115***	Net Profit ($mill)	*145*
39.4%	39.1%	39.1%	38.9%	38.8%	37.8%	27.1%	41.4%	30.2%	8.6%	***35.0%***	***35.0%***	Income Tax Rate	*35.0%*
2.6%	2.8%	2.4%	2.4%	2.2%	3.0%	3.9%	3.9%	3.5%	5.0%	***3.6%***	***3.4%***	Net Profit Margin	*4.0%*
38.1%	40.3%	42.0%	34.8%	37.3%	38.5%	39.8%	37.2%	35.5%	39.2%	***37.5%***	***38.5%***	Long-Term Debt Ratio	*33.0%*
61.9%	59.7%	58.0%	65.2%	62.7%	61.5%	60.2%	62.8%	64.5%	60.8%	***62.5%***	***61.5%***	Common Equity Ratio	*67.0%*
676.8	783.8	755.3	954.0	1028.0	1182.1	1144.8	1154.4	1203.1	1339.0	***1330***	***1305***	Total Capital ($mill)	*1520*
852.6	880.4	905.1	934.9	970.9	1017.3	1064.4	1135.7	1295.9	1484.9	***1515***	***1545***	Net Plant ($mill)	*1640*
10.7%	10.1%	11.2%	9.6%	7.7%	10.7%	9.7%	9.7%	9.7%	9.4%	***9.5%***	***9.5%***	Return on Total Cap'l	*10.5%*
15.6%	15.3%	17.0%	12.6%	10.1%	15.7%	14.6%	14.0%	13.7%	13.9%	***13.5%***	***14.0%***	Return on Shr. Equity	*14.0%*
15.6%	15.3%	17.0%	12.6%	10.1%	15.7%	14.6%	14.0%	13.7%	13.9%	***13.5%***	***14.0%***	Return on Com Equity	*14.0%*
7.7%	7.8%	8.5%	6.3%	3.6%	9.5%	7.2%	6.7%	6.2%	6.2%	***5.5%***	***6.0%***	Retained to Com Eq	*7.5%*
51%	49%	50%	50%	64%	40%	50%	52%	55%	56%	58%	***58%***	All Div'ds to Net Prof	*48%*

CAPITAL STRUCTURE as of 6/30/13
Total Debt $881.6 mill. **Due in 5 Yrs** $214.3 mill.
LT Debt $516.2 mill. **LT Interest** $19.6 mill.
Incl. $65.8 mill. capitalized leases.
(LT interest earned: 7.5x; total interest coverage: 7.5x)
Pension Assets-9/12 $207.8 mill.
Oblig. $332.2 mill.
Pfd Stock None

Common Stock 41,380,558 shs.
as of 8/5/13
MARKET CAP: $1.9 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2011	2012	6/30/13
Cash Assets	7.4	4.5	1.9
Other	725.0	642.8	748.4
Current Assets	732.4	647.3	750.3
Accts Payable	66.0	265.8	336.3
Debt Due	166.9	287.6	365.4
Other	470.5	99.7	93.8
Current Liab.	703.4	653.1	795.5
Fix. Chg. Cov.	700%	700%	700%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '10-'12 to '16-'18
Revenues	4.5%	-3.5%	*6.0%*
"Cash Flow"	5.0%	6.0%	*5.0%*
Earnings	7.0%	8.5%	*5.5%*
Dividends	6.5%	8.5%	*3.0%*
Book Value	8.0%	6.5%	*5.5%*

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) [A] Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2010	609.6	918.4	479.8	631.5	2639.3
2011	713.2	977.0	648.1	670.9	3009.2
2012	642.4	612.9	425.1	568.5	2248.9
2013	736.0	960.9	767.5	733.7	3198.1
2014	***760***	***985***	***790***	***760***	***3295***

Fiscal Year Ends	EARNINGS PER SHARE [A B] Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2010	.66	1.55	.28	d.03	2.46
2011	.71	1.62	.23	.02	2.58
2012	1.09	1.79	.10	d.27	2.71
2013	.85	1.64	.23	d.01	2.73
2014	***.87***	***1.66***	***.25***	***.02***	***2.80***

Cal-endar	QUARTERLY DIVIDENDS PAID [C] ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2010	.34	.34	.34	.34	1.36
2011	.36	.36	.36	.36	1.44
2012	.38	.38	.38	.80	1.94
2013	- -	.40	.40	.40	
2014	.42				

BUSINESS: New Jersey Resources Corp. is a holding company providing retail/wholesale energy svcs. to customers in New Jersey, and in states from the Gulf Coast to New England, and Canada. New Jersey Natural Gas had about 500,070 customers at 9/30/12 in Monmouth and Ocean Counties, and other N.J. Counties. Fiscal 2012 volume: 161 bill. cu. ft. (6% interruptible, 31% residential and commercial and electric utility, 63% incentive programs). N.J. Natural Energy subsidiary provides unregulated retail/wholesale natural gas and related energy svcs. 2012 dep. rate: 2.3%. Has 927 empls. Off./dir. own about 1.1% of common (12/12 Proxy). Chrmn., CEO & Pres. : Laurence M. Downes. Inc.: NJ Addr.: 1415 Wyckoff Road, Wall, NJ 07719. Tel.: 732-938-1480. Web: www.njresources.com.

New Jersey Resources recently posted solid fourth-quarter and fiscal-year financial results (ended September 30th). Indeed, revenues increased more than 40% to about $3.2 billion. This stemmed from double-digit gains at both the utility and nonutility segments, which reflected a more than 15% rise in system throughput volumes, to 844.1 bcf. New Jersey Natural Gas (NJNG), the regulated utility subsidiary, posted steady growth from customer additions, the continued benefits of its accelerated infrastructure investments, and regulatory initiatives. The NJNG unit added 7,456 new customers last year, which contributed nicely to overall operations. Additional gains stemmed from the NJR Energy Services, NJR Midstream, and NJR Home Services divisions. These positive factors were partially offset by declining contributions from the Clean Energy Ventures segment. On balance, NJR's bottom line ticked modestly higher, to $2.73 for the year. This was in line with our expectations.

We look for low- to mid-single-digit top- and bottom-line gains in fiscal 2014, to $3.295 billion and $2.80 a share, respectively. This ought to be supported by 14,000-16,000 new customers at the regulated utility division for fiscal 2014 and 2015, combined. The company has many capital projects in the works to help boost system capacity and reliability. At this point, the bulk of the damages related to Hurricane Sandy have been fixed. Those costs were lower than previously expected, but will still be about $35 million to $40 million. The remaining $9 million-$14 million will be deployed over the next two years. The company plans to file a rate case somewhere over that time frame, to cover the bulk of those expenses.

The company's first wind project adds to its alternative energy portfolio. NJR bought the wind farm for $22 million from OwnEnergy. It consists of six GE wind turbines with a total capacity of 9.72 megawatts. The farm is located in Montana and should be operational by the third quarter of this fiscal year. It helps to diversify NJR's clean energy investments and offsets its reliance on solar power.

These high-quality shares have modest appeal as an income vehicle.

Bryan J. Fong *December 6, 2013*

(A) Fiscal year ends Sept. 30th.
(B) Diluted earnings. Qtly egs may not sum to total due to change in shares outstanding. Next earnings report due late Jan.
(C) Dividends historically paid in early Jan., April, July, and October. 1Q '13 div'd paid in 4Q '12. ■ Dividend reinvestment plan available.
(D) Includes regulatory assets in 2012: $441.3 million, $10.63/share.
(E) In millions, adjusted for splits.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	60
Earnings Predictability	55

N.W. NAT'L GAS NYSE-NWN

RECENT PRICE **42.80** | P/E RATIO **19.3** (Trailing: 19.3 Median: 17.0) | RELATIVE P/E RATIO **1.05** | DIV'D YLD **4.3%** | **VALUE LINE**

TIMELINESS 3 Raised 7/5/13
SAFETY 1 Raised 3/18/05
TECHNICAL 3 Lowered 11/8/13
BETA .65 (1.00 = Market)

2016-18 PROJECTIONS

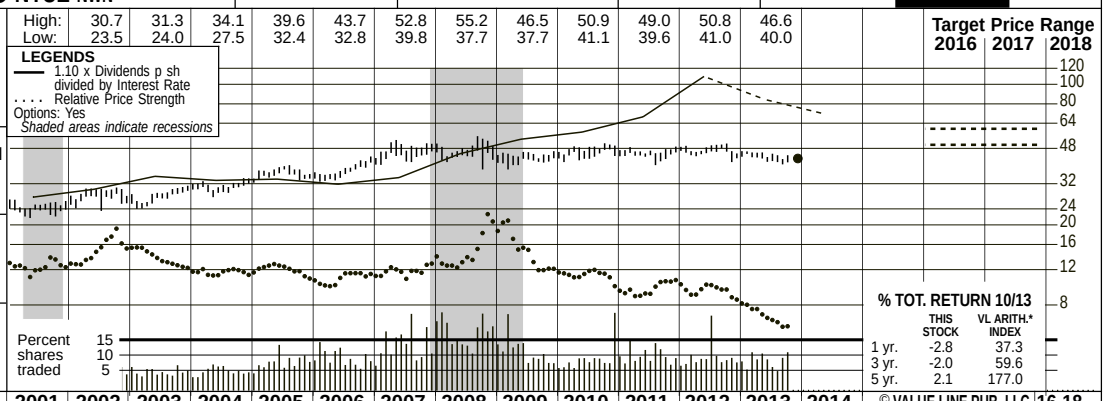
	Price	Gain	Ann'l Total Return
High	60	(+40%)	*12%*
Low	50	(+15%)	*8%*

Insider Decisions

	J	F	M	A	M	J	J	A	S
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	3	0	0	0	0	0	0	0	0

Institutional Decisions

	1Q2013	2Q2013	3Q2013
to Buy	75	79	74
to Sell	53	63	53
Hld's(000)	16036	15076	15196



1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	© VALUE LINE PUB. LLC	16-18
15.82	16.77	18.17	21.09	25.78	25.07	23.57	25.69	33.01	37.20	39.13	39.16	38.17	30.56	31.72	27.14	***26.50***	***27.40***	Revenues per sh	*28.95*
3.72	3.24	3.72	3.68	3.86	3.65	3.85	3.92	4.34	4.76	5.41	5.31	5.20	5.18	5.00	4.94	***4.05***	***4.25***	"Cash Flow" per sh	*5.30*
1.76	1.02	1.70	1.79	1.88	1.62	1.76	1.86	2.11	2.35	2.76	2.57	2.83	2.73	2.39	2.22	***2.15***	***2.30***	Earnings per sh A	*3.20*
1.21	1.22	1.23	1.24	1.25	1.26	1.27	1.30	1.32	1.39	1.44	1.52	1.60	1.68	1.75	1.79	***1.83***	***1.87***	Div'ds Decl'd per sh B■	*2.00*
5.07	4.02	4.78	3.46	3.23	3.11	4.90	5.52	3.48	3.56	4.48	3.92	5.09	9.35	3.76	4.91	***6.10***	***6.35***	Cap'l Spending per sh	*6.95*
16.02	16.59	17.12	17.93	18.56	18.88	19.52	20.64	21.28	22.01	22.52	23.71	24.88	26.08	26.70	27.23	***27.90***	***29.10***	Book Value per sh D	*31.65*
22.86	24.85	25.09	25.23	25.23	25.59	25.94	27.55	27.58	27.24	26.41	26.50	26.53	26.58	26.76	26.92	***27.00***	***27.00***	Common Shs Outst'g C	*28.00*
14.4	26.7	14.5	12.4	12.9	17.2	15.8	16.7	17.0	15.9	16.7	18.1	15.2	17.0	19.0	21.1	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*17.0*
.83	1.39	.83	.81	.66	.94	.90	.88	.91	.86	.89	1.09	1.01	1.08	1.19	1.35			Relative P/E Ratio	*1.15*
4.8%	4.5%	5.0%	5.6%	5.1%	4.5%	4.6%	4.2%	3.7%	3.7%	3.1%	3.3%	3.7%	3.6%	3.9%	3.8%			Avg Ann'l Div'd Yield	*3.3%*
611.3	707.6	910.5	1013.2	1033.2	1037.9	1012.7	812.1	848.8	730.6	***715***	***740***	Revenues ($mill)	*810*
46.0	50.6	58.1	65.2	74.5	68.5	75.1	72.7	63.9	59.9	***58.0***	***62.0***	Net Profit ($mill)	*90.0*
33.7%	34.4%	36.0%	36.3%	37.2%	36.9%	38.3%	40.5%	40.4%	42.4%	***38.0%***	***37.5%***	Income Tax Rate	*31.0%*
7.5%	7.1%	6.4%	6.4%	7.2%	6.6%	7.4%	8.9%	7.5%	8.2%	***8.1%***	***8.4%***	Net Profit Margin	*11.1%*
49.7%	46.0%	47.0%	46.3%	46.3%	44.9%	47.7%	46.1%	47.3%	48.5%	***48.5%***	***48.5%***	Long-Term Debt Ratio	*48.0%*
50.3%	54.0%	53.0%	53.7%	53.7%	55.1%	52.3%	53.9%	52.7%	51.5%	***51.5%***	***51.5%***	Common Equity Ratio	*52.0%*
1006.6	1052.5	1108.4	1116.5	1106.8	1140.4	1261.8	1284.8	1356.2	1424.7	***1470***	***1525***	Total Capital ($mill)	*1705*
1205.9	1318.4	1373.4	1425.1	1495.9	1549.1	1670.1	1854.2	1893.9	1973.6	***2055***	***2135***	Net Plant ($mill)	*2400*
5.7%	5.9%	6.5%	7.1%	8.5%	7.7%	7.3%	7.0%	6.2%	5.7%	***5.0%***	***5.0%***	Return on Total Cap'l	*6.5%*
9.1%	8.9%	9.9%	10.9%	12.5%	10.9%	11.4%	10.5%	8.9%	8.2%	***7.5%***	***8.0%***	Return on Shr. Equity	*10.0%*
9.0%	8.9%	9.9%	10.9%	12.5%	10.9%	11.4%	10.5%	8.9%	8.2%	***7.5%***	***8.0%***	Return on Com Equity	*10.0%*
2.6%	2.7%	3.7%	4.5%	6.0%	4.5%	5.0%	4.0%	2.4%	1.6%	***1.0%***	***1.5%***	Retained to Com Eq	*4.0%*
72%	69%	63%	59%	52%	59%	56%	61%	73%	80%	***85%***	***81%***	All Div'ds to Net Prof	*63%*

CAPITAL STRUCTURE as of 9/30/13
Total Debt $741.7 mill. **Due in 5 Yrs** $200 mill.
LT Debt $681.7 mill. **LT Interest** $45.0 mill.

(Total interest coverage: 3.3x)

Pension Assets-12/12 $249.6 mill.
Oblig. $435.9 mill.

Pfd Stock None

Common Stock 27,002,556 shares as of 10/25/13

MARKET CAP $1.2 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2011	2012	9/30/13
Cash Assets	5.8	8.9	16.1
Other	342.9	274.8	179.6
Current Assets	348.7	283.7	195.7
Accts Payable	86.3	85.6	67.7
Debt Due	181.6	190.3	60.0
Other	146.6	92.5	214.8
Current Liab.	414.5	368.4	342.5
Fix. Chg. Cov.	334%	329%	249%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '10-'12 to '16-'18
Revenues	2.0%	-4.0%	*-.5%*
"Cash Flow"	3.0%	1.0%	*1.0%*
Earnings	3.5%	0.5%	*4.5%*
Dividends	3.5%	4.5%	*2.5%*
Book Value	4.0%	4.0%	*3.0%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2010	286.5	162.4	95.1	268.1	812.1
2011	323.1	161.2	93.3	271.2	848.8
2012	309.6	104.0	87.5	229.5	730.6
2013	277.9	131.7	88.2	***267.2***	***715***
2014	***240***	***140***	***90***	***270***	***740***

Calendar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2010	1.64	.26	d.28	1.11	2.73
2011	1.53	.08	d.31	1.09	2.39
2012	1.51	.05	d.39	1.05	2.22
2013	1.40	.08	d.31	***.98***	***2.15***
2014	***1.45***	***.10***	***d.30***	***1.05***	***2.30***

Calendar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2009	.395	.395	.395	.415	1.60
2010	.415	.415	.415	.435	1.68
2011	.435	.435	.435	.445	1.75
2012	.445	.445	.445	.455	1.79
2013	.455	.455	.455	.460	

BUSINESS: Northwest Natural Gas Co. distributes natural gas to 90 communities, 681,000 customers, in Oregon (90% of customers) and in southwest Washington state. Principal cities served: Portland and Eugene, OR; Vancouver, WA. Service area population: 2.5 mill. (77% in OR). Company buys gas supply from Canadian and U.S. producers; has transportation rights on Northwest Pipeline system. Owns local underground storage. Rev. breakdown: residential, 59%; commercial, 29%; industrial, gas transportation, and other, 12%. Employs 1,092. BlackRock Inc. owns 8.2% of shares; officers and directors, 1.8% (4/13 proxy). CEO: Gregg S. Kantor. Inc.: Oregon. Address: 220 NW 2nd Ave., Portland, OR 97209. Telephone: 503-226-4211. Internet: www.nwnatural.com.

Northwest Natural Gas reported decent third-quarter results. Though the top line was lower than expected, the bottom-line loss of $0.31 a share was better than expected. Margins expanded, allowing for the smaller loss, and the top line benefited from a recovering Portland area. The company received small increases in residential rates, which should benefit margins heading forward. The company has some outstanding rates cases concerning the pensions and incentive sharing percentages, which will likely be decided in 2014, leaving further upside to 2014 estimates. A $7 million disallowance from recovery was ruled to be too low, and will take until 2014 for a decision, potentially hurting next year's bottom line. We lowered our top line estimate by $20 million, to $715 million.

Compressed natural gas vehicles may be able to provide Northwest Natural Gas with some growth opportunities. The company filed a tariff, that if approved, would establish rates for vehicles. We think this could be decided in early 2014, but would take some time to be implemented.

The board raised the dividend by 1%, to $0.46 quarterly. This dividend aristocrat has raised its payout for 58 consecutive years. That said, this increase is one of the smallest that it has had in a decade. The yield remains one of the highest in the industry, and will likely continue to be the main attraction here. Further out, we expect dividend increases to remain small, as the company historically has kept a payout ratio between 60% and 70% (Its projected to pay out 85% in 2013).

The balance sheet is in good shape. The company sold some bonds worth $50 million during the third quarter, and cash flow remains solid. We think that capital projects will accelerate after decisions are given in the aforementioned cases.

Northwest Natural Gas shares have a Timeliness rank of 3 (Average). They are ranked 1 (Highest) for Safety and offer a good yield and 3- to 5-year total return potential. This issue carries a high Financial Strength rating of A, and has our highest Price Stability score. This issue is a solid choice for investors with a low risk tolerance.

John E. Seibert III *December 6, 2013*

(A) Diluted earnings per share. Excludes nonrecurring items: '98, $0.15; '00, $0.11; '06, ($0.06); '08, ($0.03); '09, 6¢; Next earnings report due in early February.
(B) Dividends historically paid in mid-February, May, August, and November.
■ Dividend reinvestment plan available.
(C) In millions.
(D) Includes intangibles. In 2012: $387.9 million, $14.41/share.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	55
Earnings Predictability	95

N.W. NAT'L GAS NYSE-NWN

RECENT PRICE **42.80** | P/E RATIO **19.3** (Trailing: 19.3 Median: 17.0) | RELATIVE P/E RATIO **1.05** | DIV'D YLD **4.3%** | **VALUE LINE**

TIMELINESS 3 Raised 7/5/13
SAFETY 1 Raised 3/18/05
TECHNICAL 3 Lowered 11/8/13
BETA .65 (1.00 = Market)

2016-18 PROJECTIONS

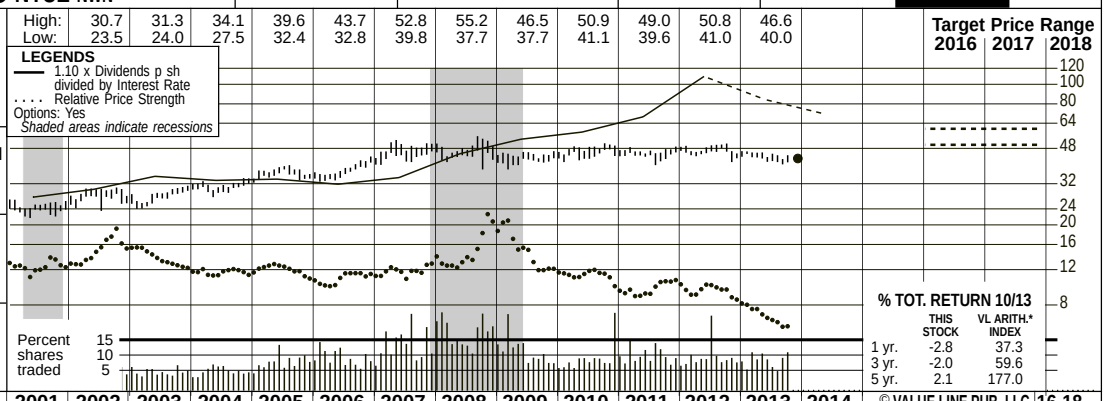
	Price	Gain	Ann'l Total Return
High	60	(+40%)	*12%*
Low	50	(+15%)	*8%*

Insider Decisions

	J	F	M	A	M	J	J	A	S
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	3	0	0	0	0	0	0	0	0

Institutional Decisions

	1Q2013	2Q2013	3Q2013
to Buy	75	79	74
to Sell	53	63	53
Hld's(000)	16036	15076	15196



1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	© VALUE LINE PUB. LLC	16-18
15.82	16.77	18.17	21.09	25.78	25.07	23.57	25.69	33.01	37.20	39.13	39.16	38.17	30.56	31.72	27.14	***26.50***	***27.40***	Revenues per sh	*28.95*
3.72	3.24	3.72	3.68	3.86	3.65	3.85	3.92	4.34	4.76	5.41	5.31	5.20	5.18	5.00	4.94	***4.05***	***4.25***	"Cash Flow" per sh	*5.30*
1.76	1.02	1.70	1.79	1.88	1.62	1.76	1.86	2.11	2.35	2.76	2.57	2.83	2.73	2.39	2.22	***2.15***	***2.30***	Earnings per sh A	*3.20*
1.21	1.22	1.23	1.24	1.25	1.26	1.27	1.30	1.32	1.39	1.44	1.52	1.60	1.68	1.75	1.79	***1.83***	***1.87***	Div'ds Decl'd per sh B■	*2.00*
5.07	4.02	4.78	3.46	3.23	3.11	4.90	5.52	3.48	3.56	4.48	3.92	5.09	9.35	3.76	4.91	***6.10***	***6.35***	Cap'l Spending per sh	*6.95*
16.02	16.59	17.12	17.93	18.56	18.88	19.52	20.64	21.28	22.01	22.52	23.71	24.88	26.08	26.70	27.23	***27.90***	***29.10***	Book Value per sh D	*31.65*
22.86	24.85	25.09	25.23	25.23	25.59	25.94	27.55	27.58	27.24	26.41	26.50	26.53	26.58	26.76	26.92	***27.00***	***27.00***	Common Shs Outst'g C	*28.00*
14.4	26.7	14.5	12.4	12.9	17.2	15.8	16.7	17.0	15.9	16.7	18.1	15.2	17.0	19.0	21.1	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*17.0*
.83	1.39	.83	.81	.66	.94	.90	.88	.91	.86	.89	1.09	1.01	1.08	1.19	1.35			Relative P/E Ratio	*1.15*
4.8%	4.5%	5.0%	5.6%	5.1%	4.5%	4.6%	4.2%	3.7%	3.7%	3.1%	3.3%	3.7%	3.6%	3.9%	3.8%			Avg Ann'l Div'd Yield	*3.3%*
611.3	707.6	910.5	1013.2	1033.2	1037.9	1012.7	812.1	848.8	730.6	***715***	***740***	Revenues ($mill)	*810*
46.0	50.6	58.1	65.2	74.5	68.5	75.1	72.7	63.9	59.9	***58.0***	***62.0***	Net Profit ($mill)	*90.0*
33.7%	34.4%	36.0%	36.3%	37.2%	36.9%	38.3%	40.5%	40.4%	42.4%	***38.0%***	***37.5%***	Income Tax Rate	*31.0%*
7.5%	7.1%	6.4%	6.4%	7.2%	6.6%	7.4%	8.9%	7.5%	8.2%	***8.1%***	***8.4%***	Net Profit Margin	*11.1%*
49.7%	46.0%	47.0%	46.3%	46.3%	44.9%	47.7%	46.1%	47.3%	48.5%	***48.5%***	***48.5%***	Long-Term Debt Ratio	*48.0%*
50.3%	54.0%	53.0%	53.7%	53.7%	55.1%	52.3%	53.9%	52.7%	51.5%	***51.5%***	***51.5%***	Common Equity Ratio	*52.0%*
1006.6	1052.5	1108.4	1116.5	1106.8	1140.4	1261.8	1284.8	1356.2	1424.7	***1470***	***1525***	Total Capital ($mill)	*1705*
1205.9	1318.4	1373.4	1425.1	1495.9	1549.1	1670.1	1854.2	1893.9	1973.6	***2055***	***2135***	Net Plant ($mill)	*2400*
5.7%	5.9%	6.5%	7.1%	8.5%	7.7%	7.3%	7.0%	6.2%	5.7%	***5.0%***	***5.0%***	Return on Total Cap'l	*6.5%*
9.1%	8.9%	9.9%	10.9%	12.5%	10.9%	11.4%	10.5%	8.9%	8.2%	***7.5%***	***8.0%***	Return on Shr. Equity	*10.0%*
9.0%	8.9%	9.9%	10.9%	12.5%	10.9%	11.4%	10.5%	8.9%	8.2%	***7.5%***	***8.0%***	Return on Com Equity	*10.0%*
2.6%	2.7%	3.7%	4.5%	6.0%	4.5%	5.0%	4.0%	2.4%	1.6%	***1.0%***	***1.5%***	Retained to Com Eq	*4.0%*
72%	69%	63%	59%	52%	59%	56%	61%	73%	80%	***85%***	***81%***	All Div'ds to Net Prof	*63%*

CAPITAL STRUCTURE as of 9/30/13
Total Debt $741.7 mill. **Due in 5 Yrs** $200 mill.
LT Debt $681.7 mill. **LT Interest** $45.0 mill.

(Total interest coverage: 3.3x)

Pension Assets-12/12 $249.6 mill.
Oblig. $435.9 mill.

Pfd Stock None

Common Stock 27,002,556 shares as of 10/25/13

MARKET CAP $1.2 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2011	2012	9/30/13
Cash Assets	5.8	8.9	16.1
Other	342.9	274.8	179.6
Current Assets	348.7	283.7	195.7
Accts Payable	86.3	85.6	67.7
Debt Due	181.6	190.3	60.0
Other	146.6	92.5	214.8
Current Liab.	414.5	368.4	342.5
Fix. Chg. Cov.	334%	329%	249%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '10-'12 to '16-'18
Revenues	2.0%	-4.0%	*-.5%*
"Cash Flow"	3.0%	1.0%	*1.0%*
Earnings	3.5%	0.5%	*4.5%*
Dividends	3.5%	4.5%	*2.5%*
Book Value	4.0%	4.0%	*3.0%*

Calendar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2010	286.5	162.4	95.1	268.1	812.1
2011	323.1	161.2	93.3	271.2	848.8
2012	309.6	104.0	87.5	229.5	730.6
2013	277.9	131.7	88.2	***267.2***	***715***
2014	***240***	***140***	***90***	***270***	***740***

Calendar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2010	1.64	.26	d.28	1.11	2.73
2011	1.53	.08	d.31	1.09	2.39
2012	1.51	.05	d.39	1.05	2.22
2013	1.40	.08	d.31	***.98***	***2.15***
2014	***1.45***	***.10***	***d.30***	***1.05***	***2.30***

Calendar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2009	.395	.395	.395	.415	1.60
2010	.415	.415	.415	.435	1.68
2011	.435	.435	.435	.445	1.75
2012	.445	.445	.445	.455	1.79
2013	.455	.455	.455	.460	

BUSINESS: Northwest Natural Gas Co. distributes natural gas to 90 communities, 681,000 customers, in Oregon (90% of customers) and in southwest Washington state. Principal cities served: Portland and Eugene, OR; Vancouver, WA. Service area population: 2.5 mill. (77% in OR). Company buys gas supply from Canadian and U.S. producers; has transportation rights on Northwest Pipeline system. Owns local underground storage. Rev. breakdown: residential, 59%; commercial, 29%; industrial, gas transportation, and other, 12%. Employs 1,092. BlackRock Inc. owns 8.2% of shares; officers and directors, 1.8% (4/13 proxy). CEO: Gregg S. Kantor. Inc.: Oregon. Address: 220 NW 2nd Ave., Portland, OR 97209. Telephone: 503-226-4211. Internet: www.nwnatural.com.

Northwest Natural Gas reported decent third-quarter results. Though the top line was lower than expected, the bottom-line loss of $0.31 a share was better than expected. Margins expanded, allowing for the smaller loss, and the top line benefited from a recovering Portland area. The company received small increases in residential rates, which should benefit margins heading forward. The company has some outstanding rates cases concerning the pensions and incentive sharing percentages, which will likely be decided in 2014, leaving further upside to 2014 estimates. A $7 million disallowance from recovery was ruled to be too low, and will take until 2014 for a decision, potentially hurting next year's bottom line. We lowered our top line estimate by $20 million, to $715 million.

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John E. Seibert III *December 6, 2013*

(A) Diluted earnings per share. Excludes nonrecurring items: '98, $0.15; '00, $0.11; '06, ($0.06); '08, ($0.03); '09, 6¢; Next earnings report due in early February.
(B) Dividends historically paid in mid-February, May, August, and November.
■ Dividend reinvestment plan available.
(C) In millions.
(D) Includes intangibles. In 2012: $387.9 million, $14.41/share.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	55
Earnings Predictability	95

WGL HOLDINGS NYSE-WGL

RECENT PRICE 40.00 | P/E RATIO 17.1 (Trailing: 21.5 Median: 15.0) | RELATIVE P/E RATIO 0.93 | DIV'D YLD 4.2% | VALUE LINE

TIMELINESS 4 Lowered 9/20/13
SAFETY 1 Raised 4/2/93
TECHNICAL 4 Lowered 12/6/13
BETA .65 (1.00 = Market)

2016-18 PROJECTIONS

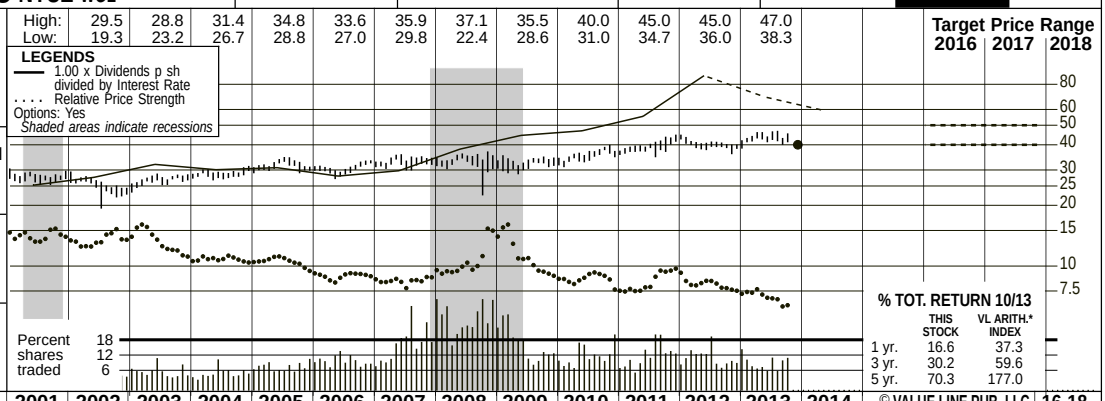
	Price	Gain	Ann'l Total Return
High	50	(+25%)	*10%*
Low	40	(Nil)	*4%*

Insider Decisions

	J	F	M	A	M	J	J	A	S
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	0	2	0	0	0	0	0	0	0

Institutional Decisions

	1Q2013	2Q2013	3Q2013
to Buy	79	86	105
to Sell	89	87	83
Hld's(000)	31484	31428	31721



1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	© VALUE LINE PUB. LLC	16-18
24.16	23.74	20.92	22.19	29.80	32.63	42.45	42.93	44.94	53.96	53.51	52.65	53.98	53.60	53.75	47.09	47.70	*49.05*	Revenues per sh [A]	*53.60*
3.02	2.79	2.74	3.20	3.24	2.63	4.00	3.87	3.97	3.84	3.89	4.34	4.44	4.11	4.01	4.60	*4.30*	*4.35*	"Cash Flow" per sh	*5.15*
1.85	1.54	1.47	1.79	1.88	1.14	2.30	1.98	2.13	1.94	2.09	2.44	2.53	2.27	2.25	2.68	2.31	*2.35*	Earnings per sh [B]	*2.95*
1.17	1.20	1.22	1.24	1.26	1.27	1.28	1.30	1.32	1.35	1.37	1.41	1.47	1.50	1.55	1.59	1.66	*1.71*	Div'ds Decl'd per sh [C] ■	*1.83*
3.20	3.62	3.42	2.67	2.68	3.34	2.65	2.33	2.32	3.27	3.33	2.70	2.77	2.57	3.94	5.85	*4.85*	*4.80*	Cap'l Spending per sh	*4.80*
13.48	13.86	14.72	15.31	16.24	15.78	16.25	16.95	17.80	18.86	19.83	20.99	21.89	22.82	23.49	24.75	24.65	*25.40*	Book Value per sh [D]	*28.80*
43.70	43.84	46.47	46.47	48.54	48.56	48.63	48.67	48.65	48.89	49.45	49.92	50.14	50.54	51.20	51.50	51.90	*52.00*	Common Shs Outst'g [E]	*52.00*
12.7	17.2	17.3	14.6	14.7	23.1	11.1	14.2	14.7	15.5	15.6	13.7	12.6	15.1	17.0	15.3	18.2		Avg Ann'l P/E Ratio	*15.0*
.73	.89	.99	.95	.75	1.26	.63	.75	.78	.84	.83	.82	.84	.96	1.07	.99	1.10		Relative P/E Ratio	*1.00*
5.0%	4.5%	4.8%	4.8%	4.6%	4.8%	5.0%	4.6%	4.2%	4.5%	4.2%	4.2%	4.6%	4.4%	4.1%	4.3%	3.9%		Avg Ann'l Div'd Yield	*4.1%*
2064.2	2089.6	2186.3	2637.9	2646.0	2628.2	2706.9	2708.9	2751.5	2425.3	2466.1	*2550*	Revenues ($mill) [A]	*2785*
112.3	98.0	104.8	96.0	102.9	122.9	128.7	115.0	115.5	138.3	*120*	*140*	Net Profit ($mill)	*155*
38.0%	38.2%	37.4%	39.0%	39.1%	37.1%	39.1%	38.7%	42.4%	39.0%	*39.0%*	*39.0%*	Income Tax Rate	*39.0%*
5.4%	4.7%	4.8%	3.6%	3.9%	4.7%	4.8%	4.2%	4.2%	5.7%	*4.9%*	*5.4%*	Net Profit Margin	*5.5%*
43.8%	40.9%	39.5%	37.8%	37.9%	35.9%	33.3%	33.4%	32.3%	31.0%	28.7%	*30.5%*	Long-Term Debt Ratio	*28.0%*
54.3%	57.2%	58.6%	60.4%	60.3%	62.4%	65.0%	65.0%	66.2%	67.5%	69.8%	*68.0%*	Common Equity Ratio	*70.5%*
1454.9	1443.6	1478.1	1526.1	1625.4	1679.5	1687.7	1774.4	1818.1	1886.9	1826.8	*1965*	Total Capital ($mill)	*2125*
1874.9	1915.6	1969.7	2067.9	2150.4	2208.3	2269.1	2346.2	2489.9	2667.4	2854.5	*3055*	Net Plant ($mill)	*3745*
9.1%	8.2%	8.5%	7.6%	7.6%	8.5%	8.8%	7.6%	7.5%	8.3%	7.5%	*8.0%*	Return on Total Cap'l	*8.0%*
13.7%	11.5%	11.7%	10.1%	10.2%	11.4%	11.4%	9.7%	9.4%	10.9%	*9.4%*	*10.4%*	Return on Shr. Equity	*10.0%*
14.0%	11.7%	12.0%	10.3%	10.4%	11.6%	11.6%	9.9%	9.5%	11.0%	9.4%	*10.5%*	Return on Com Equity	*10.0%*
6.2%	4.1%	4.6%	3.2%	3.5%	5.0%	5.0%	3.3%	3.4%	4.3%	2.6%	*3.5%*	Retained to Com Eq	*4.0%*
56%	65%	62%	69%	66%	57%	57%	67%	64%	59%	72%	*64%*	All Div'ds to Net Prof	*62%*

CAPITAL STRUCTURE as of 9/30/13
Total Debt $964.2 mill. **Due in 5 Yrs** $112.0 mill.
LT Debt $524.1 mill. **LT Interest** $36.4 mill.
(LT interest earned: 6.2x; total interest coverage: 5.7x)
Pension Assets-9/13 $1,126.1 mill.
Oblig. $1,267.2 mill.
Preferred Stock $28.2 mill. **Pfd. Div'd** $1.3 mill.

Common Stock 51,809,755 shs.
as of 10/31/13

MARKET CAP: $2.1 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2011	2012	9/30/13
Cash Assets	4.3	10.3	3.5
Other	720.4	822.5	816.5
Current Assets	724.7	832.8	820.0
Accts Payable	279.4	270.4	270.7
Debt Due	116.5	247.7	440.1
Other	180.8	238.9	239.3
Current Liab.	576.7	757.0	950.1
Fix. Chg. Cov.	535%	535%	535%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '10-'12 to '16-'18
Revenues	6.0%	0.5%	*1.5%*
"Cash Flow"	3.5%	1.5%	*3.0%*
Earnings	4.0%	3.0%	*3.5%*
Dividends	2.0%	3.0%	*2.5%*
Book Value	4.0%	4.5%	*3.0%*

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) [A] Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2010	727.4	1056	459.7	465.1	2708.9
2011	795.9	1017	490.3	448.1	2751.5
2012	727.7	839.5	438.3	419.8	2425.3
2013	686.7	891.4	478.1	409.9	2466.1
2014	*705*	*910*	*500*	*435*	*2550*

Fiscal Year Ends	EARNINGS PER SHARE [A] [B] Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2010	1.01	1.64	d.07	d.29	2.27
2011	1.02	1.53	d.03	d.27	2.25
2012	1.13	1.58	.08	d.11	2.68
2013	1.14	1.75	d.03	d.55	2.31
2014	*1.15*	*1.76*	*d.02*	*d.54*	*2.35*

Calendar	QUARTERLY DIVIDENDS PAID [C] ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2009	.36	.37	.37	.37	1.47
2010	.37	.378	.378	.378	1.50
2011	.378	.39	.39	.39	1.55
2012	.39	.40	.40	.40	1.59
2013	.40	.42	.42	.42	1.66

BUSINESS: WGL Holdings, Inc. is the parent of Washington Gas Light, a natural gas distributor in Washington, D.C. and adjacent areas of VA and MD to resident'l and comm'l users (1,094,109 meters). Hampshire Gas, a federally regulated sub., operates an underground gas-storage facility in WV. Non-regulated subs.: Wash. Gas Energy Svcs. sells and delivers natural gas and provides energy related products in the D.C. metro area; Wash. Gas Energy Sys. designs/installs comm'l heating, ventilating, and air cond. systems. State Street Global owns 9.3% of common stock; Off./dir. less than 1% (1/13 proxy). Chrmn. & CEO: Terry D. McCallister. Inc.: D.C. and VA. Addr.: 101 Const. Ave., N.W., Washington, D.C. 20080. Tel.: 202-624-6410. Internet: www.wglholdings.com.

WGL Holdings posted lower-than-expected financial results for fiscal 2013 (ended September 30th). Indeed, the company's top line registered a modest advance of approximately 2% for the year. This stemmed from a 6% rise in utility volumes offset by a 2% decline in non-utility revenues. Meanwhile, on the profitability front, overall operating expenses increased 430 basis points as a percentage of the top line. A large portion of that can be attributed to rising utility cost of gas. On balance, these factors caused the bottom line to decline approximately 14%, to $2.31 a share. This was a fair amount lower than what we had anticipated.

As a result, we have reduced our fiscal 2014 annual estimate by $0.30, to $2.35 a share. This represents a modest, low single-digit annual advance, which should be supported by a revenue increase of about 3.5%, largely due to gains at the regulated utility segment. However, challenges at the retail energy marketing segment and midstream energy services division will likely limit this year's profit gains. Still, our figure is at the top end of management's recent guidance range of $2.15-$2.35.

The balance sheet weakened a bit last year. Indeed, the cash reserves declined approximately 65% over that time frame. That financial cushion now sits at about $3.5 million. Meanwhile, the company's total debt load increased about 15%, despite a moderate decline in the long-term portion of that form of financing.

Alternative energy projects are beginning to pick up steam. Washington Gas Energy Services (WGES) has multiple solar projects in the works. Those projects amount to almost 10 megawatts worth of solar facilities across the nation. Also, as a result of its steady business in this arena, WGES is now qualified to compete for a portion of the Department of Defense's $7.0 billion Renewable Alternative Energy Power Production plans.

All told, these high-quality shares have appeal as an income vehicle. Steady dividend increases leave WGL with a healthy dividend yield. However, they are ranked to underperform the broader market averages in the year ahead (Timeliness: 4).

Bryan J. Fong *December 6, 2013*

(A) Fiscal years end Sept. 30th.
(B) Based on diluted shares. Excludes nonrecurring losses: '01, (13¢); '02, (34¢); '07, (4¢); '08, (14¢) discontinued operations: '06, (15¢). Qtly egs. may not sum to total, due to change in shares outstanding. Next earnings report due late Jan. **(C)** Dividends historically paid early February, May, August, and November. ■ Dividend reinvestment plan available. **(D)** Includes deferred charges and intangibles. '12: $610.8 million, $11.93/sh. **(E)** In millions.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	60
Earnings Predictability	95

Missouri Gas Energy

Capital Structure - Regulatory with Correct Allocation of Goodwill
($000)

Laclede Group[1]

	Description	Financial (9/30/2013) (1)	Weight (2)	Remove Goodwill (3)	Regulatory Balance (4)	Weight (5)
1	Common Equity	$ 1,046,282	53.41%	$(120,302)	$ 925,981	54.09%
2	Long-Term Debt (including current portion)	912,712	46.59%	(126,776)	785,936	45.91%
3	Capitalization	$ 1,958,994	100.00%	$(247,078)	$1,711,917	100.00%

Laclede Gas Company[2]

	Description	Financial (9/30/2013)	Weight	Remove Goodwill	Regulatory Balance	Weight
4	Common Equity	$ 973,930	52.32%	$(120,302)	$ 853,629	52.87%
5	Long-Term Debt (including current portion)	887,712	47.68%	(126,776)	760,936	47.13%
6	Capitalization	$ 1,861,642	100.00%	$(247,078)	$1,614,565	100.00%

Financing for Missouri Gas Energy Acquisition			Proper Allocation of Goodwill
Common Equity	$ 427,000 *	48.69%	$(120,302)
Long-Term Debt	450,000	51.31%	(126,776)
Total	$ 877,000	100.00%	$(247,078)

* Net proceeds to the Company

Sources:
[1] Laclede Group, Inc., SEC 10-K, downloaded on January 17, 2014.
[2] Laclede Gas Co., SEC 10-K, downloaded on January 17, 2014.

Market-to-Book Ratios, Earnings / Book Ratios and
Inflation for Standard & Poor's Industrial Index and
the Standard & Poor's 500 Composite Index
from 1947 through 2012

Year	Market-to-Book Ratio (1)		Earnings/ Book Ratio (2)				
	S&P Industrial Index (3)	S&P 500 Composite Index (3)	S&P Industrial Index (3)	S&P 500 Composite Index (3)	Inflation (4)	Earnings / Book Ratio - Net of Inflation	
1947	1.23	NA	13.0 %	NA	9.0 %	4.0 %	NA
1948	1.13	NA	17.3	NA	2.7	14.6	NA
1949	1.00	NA	16.3	NA	(1.8)	18.1	NA
1950	1.16	NA	18.3	NA	5.8	12.5	NA
1951	1.27	NA	14.4	NA	5.9	8.5	NA
1952	1.29	NA	12.7	NA	0.9	11.8	NA
1953	1.21	NA	12.7	NA	0.6	12.1	NA
1954	1.45	NA	13.5	NA	(0.5)	14.0	NA
1955	1.81	NA	16.0	NA	0.4	15.6	NA
1956	1.92	NA	13.7	NA	2.9	10.8	NA
1957	1.71	NA	12.5	NA	3.0	9.5	NA
1958	1.70	NA	9.8	NA	1.8	8.0	NA
1959	1.94	NA	11.2	NA	1.5	9.7	NA
1960	1.82	NA	10.3	NA	1.5	8.8	NA
1961	2.01	NA	9.8	NA	0.7	9.1	NA
1962	1.83	NA	10.9	NA	1.2	9.7	NA
1963	1.94	NA	11.4	NA	1.7	9.7	NA
1964	2.18	NA	12.3	NA	1.2	11.1	NA
1965	2.21	NA	13.2	NA	1.9	11.3	NA
1966	2.00	NA	13.2	NA	3.4	9.8	NA
1967	2.05	NA	12.1	NA	3.0	9.1	NA
1968	2.17	NA	12.6	NA	4.7	7.9	NA
1969	2.10	NA	12.1	NA	6.1	6.0	NA
1970	1.71	NA	10.4	NA	5.5	4.9	NA
1971	1.99	NA	11.2	NA	3.4	7.8	NA
1972	2.16	NA	12.0	NA	3.4	8.6	NA
1973	1.96	NA	14.6	NA	8.8	5.8	NA
1974	1.39	NA	14.8	NA	12.2	2.6	NA
1975	1.34	NA	12.3	NA	7.0	5.3	NA
1976	1.51	NA	14.5	NA	4.8	9.7	NA
1977	1.38	NA	14.6	NA	6.8	7.8	NA
1978	1.25	NA	15.3	NA	9.0	6.3	NA
1979	1.23	NA	17.2	NA	13.3	3.9	NA
1980	1.31	NA	15.6	NA	12.4	3.2	NA
1981	1.24	NA	14.9	NA	8.9	6.0	NA
1982	1.17	NA	11.3	NA	3.9	7.4	NA
1983	1.45	NA	12.2	NA	3.8	8.4	NA
1984	1.46	NA	14.6	NA	4.0	10.6	NA
1985	1.67	NA	12.2	NA	3.8	8.4	NA
1986	2.02	NA	11.5	NA	1.1	10.4	NA
1987	2.50	NA	15.7	NA	4.4	11.3	NA
1988	2.13	NA	19.0	NA	4.4	14.6	NA
1989	2.56	NA	18.5	NA	4.7	13.8	NA
1990	2.63	NA	16.3	NA	6.1	10.2	NA
1991	2.77	NA	10.8	NA	3.1	7.7	NA
1992	3.29	NA	13.0	NA	2.9	10.1	NA
1993	3.72	NA	15.7	NA	2.8	12.9	NA
1994	3.73	NA	23.0	NA	2.7	20.3	NA
1995	4.06	2.64	22.9	16.0 %	2.5	20.4	13.5 %
1996	4.79	3.00	24.8	16.8	3.3	21.5	13.5
1997	5.88	3.53	24.6	16.3	1.7	22.9	14.6
1998	7.13	4.16	21.3	14.5	1.6	19.7	12.9
1999	8.27	4.76	25.2	17.1	2.7	22.5	14.4
2000	7.51	4.51	23.9	16.2	3.4	20.5	12.8
2001	NA	3.50	NA	7.4	1.6	NA	5.8
2002	NA	2.93	NA	8.3	2.4	NA	5.9
2003	NA	2.78	NA	14.1	1.9	NA	12.2
2004	NA	2.91	NA	15.3	3.3	NA	12.0
2005	NA	2.78	NA	16.4	3.4	NA	13.0
2006	NA	2.75 (5)	NA	17.2	2.5	NA	14.7
2007	NA	2.77 (5)	NA	12.8	4.1	NA	8.7
2008	NA	2.02 (5)	NA	2.7	0.1	NA	2.6
2009	NA	1.63 (5)	NA	9.2	2.7	NA	6.5
2010	NA	1.92 (5)	NA	13.0	1.5	NA	11.5
2011	NA	1.89 (5)	NA	13.4	3.0	NA	10.4
2012	NA	1.93 (5)	NA	12.2	1.7	NA	10.5
Average	2.34	2.91	14.9 %	13.3 %	3.7 %	10.9 %	10.9 %

Notes: (1) Market-to-Book Ratio equals average of the high and low market price for the year divided by the average book value.

(2) Earnings/Book equals earnings per share for the year divided by the average book value.

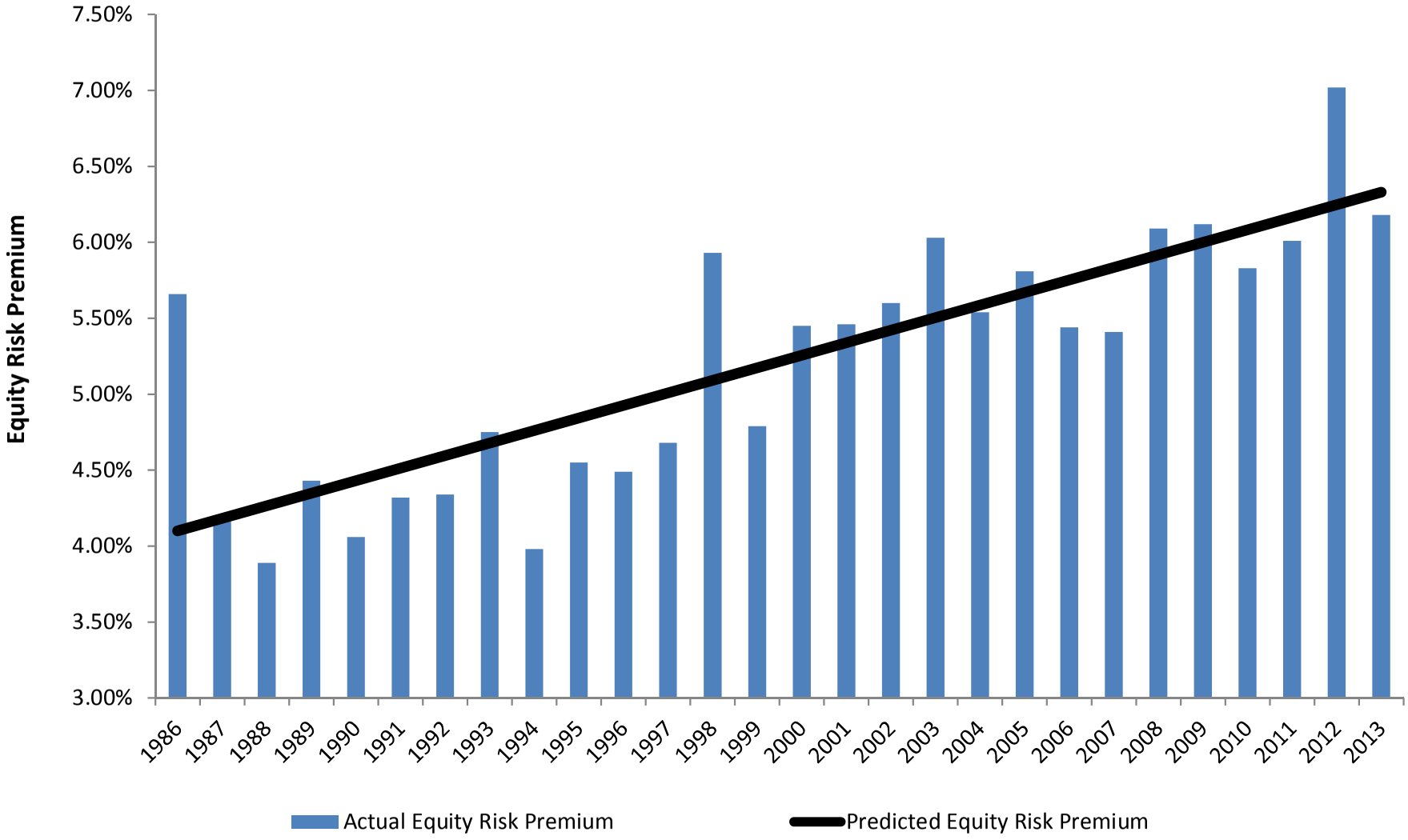
(3) On January 2, 2001 Standard & Poor's released Global Industry Classification Standard (GICS) price indexes for all Standard & Poor's U.S. indexes. As a result, all S&P Indexes have been calculated with a common base of 100 at a start date of December 31, 1994. Also, the GICS industrial sector is not comparable to the former S&P Industrial Index and data for the former S&P Industrial Index was discontinued.

(4) As measured by the Consumer Price Index (CPI).

(5) Ratios are based upon estimated book values using the actual average price and the estimated book value calculated by adding the annual earnings per share to the average book value per share and then subtracting the average dividends per share as provided by Standard & Poor's Statistical Record - Current Statistics.

Source of Information: Standard & Poor's Security Price Index Record, 2000 Edition, p. 40
Standard & Poor's Statistical Service, Current Statistics, March 2013, p. 30
Standard & Poor's Compustat Services, Inc. PC Plus Research Insight Database
Ibbotson SBBI 2013 Valuation Yearbook

Predicted Equity Risk Premium Relative to Treasury Bond Yields Based on Regression Analysis of OPC's Study on Schedule MPG-8



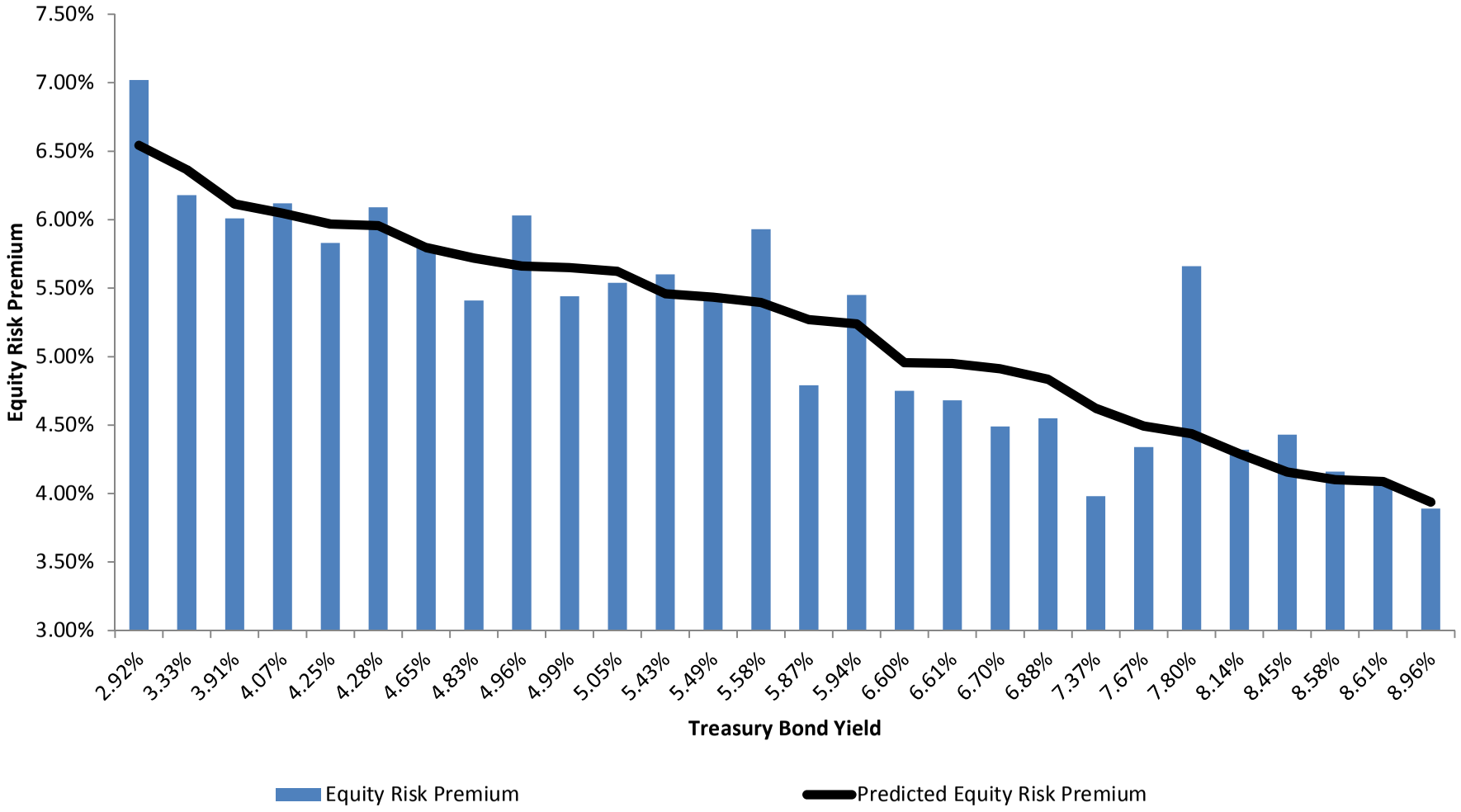
Missouri Gas Energy
Regression Predictions of Observed Equity Risk Premiums Relative to Treasury Bond Yields
1986 - Septmber 2013

OPC's Observations (1)		Regression Predictions			
Year	Equity Risk Premium	*Observation*		*Predicted Y*	*Residuals*
1986	5.66%	1		0.041006404	0.015593596
1987	4.16%	2		0.041831856	-0.000231856
1988	3.89%	3		0.042657307	-0.003757307
1989	4.43%	4		0.043482759	0.000817241
1990	4.06%	5		0.04430821	-0.00370821
1991	4.32%	6		0.045133662	-0.001933662
1992	4.34%	7		0.045959113	-0.002559113
1993	4.75%	8		0.046784565	0.000715435
1994	3.98%	9		0.047610016	-0.007810016
1995	4.55%	10		0.048435468	-0.002935468
1996	4.49%	11		0.04926092	-0.00436092
1997	4.68%	12		0.050086371	-0.003286371
1998	5.93%	13		0.050911823	0.008388177
1999	4.79%	14		0.051737274	-0.003837274
2000	5.45%	15		0.052562726	0.001937274
2001	5.46%	16		0.053388177	0.001211823
2002	5.60%	17		0.054213629	0.001786371
2003	6.03%	18		0.05503908	0.00526092
2004	5.54%	19		0.055864532	-0.000464532
2005	5.81%	20		0.056689984	0.001410016
2006	5.44%	21		0.057515435	-0.003115435
2007	5.41%	22		0.058340887	-0.004240887
2008	6.09%	23		0.059166338	0.001733662
2009	6.12%	24		0.05999179	0.00120821
2010	5.83%	25		0.060817241	-0.002517241
2011	6.01%	26		0.061642693	-0.001542693
2012	7.02%	27		0.062468144	0.007731856
2013	6.18%	28		0.063293596	-0.001493596

Notes:
(1) From Schedule MPG-8.

T-Statistic 7.294704941

Predicted Equity Risk Premium Relative to Treasury Bond Yields
Based on Regression Analysis of OPC's Study on Schedule MPG-8



Missouri Gas Energy
Regression Analysis of Observed Equity Risk Premiums Relative to Treasury Bond Yields
1986 - September 2013

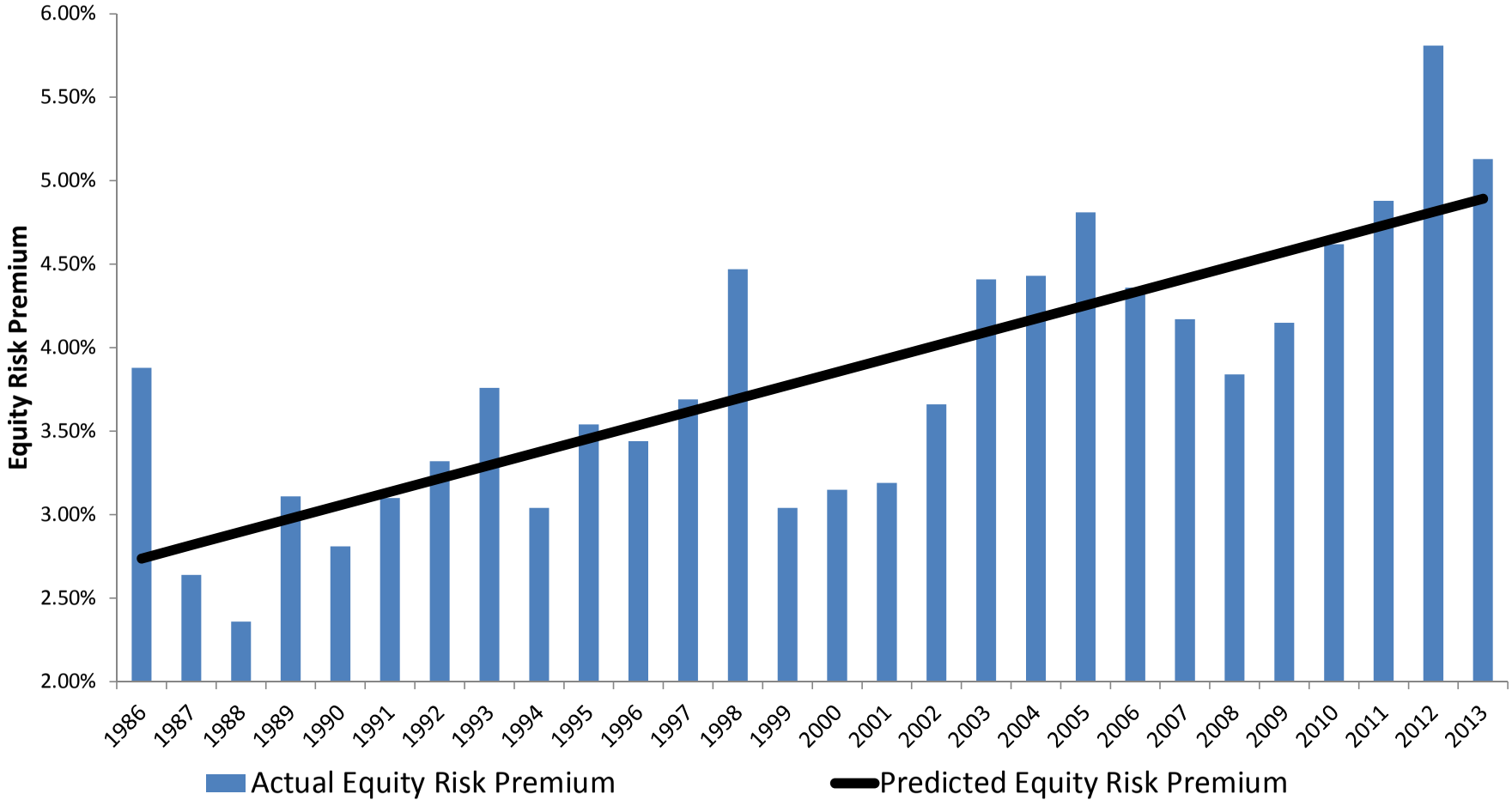
OPC's Observations (1)		
Year	Equity Risk Premium	Treasury Bond Yield
2012	7.02%	2.92%
2013	6.18%	3.33%
2011	6.01%	3.91%
2009	6.12%	4.07%
2010	5.83%	4.25%
2008	6.09%	4.28%
2005	5.81%	4.65%
2007	5.41%	4.83%
2003	6.03%	4.96%
2006	5.44%	4.99%
2004	5.54%	5.05%
2002	5.60%	5.43%
2001	5.46%	5.49%
1998	5.93%	5.58%
1999	4.79%	5.87%
2000	5.45%	5.94%
1993	4.75%	6.60%
1997	4.68%	6.61%
1996	4.49%	6.70%
1995	4.55%	6.88%
1994	3.98%	7.37%
1992	4.34%	7.67%
1986	5.66%	7.80%
1991	4.32%	8.14%
1989	4.43%	8.45%
1987	4.16%	8.58%
1990	4.06%	8.61%
1988	3.89%	8.96%

Regression Predictions		
Observation	*Predicted Y*	*Residuals*
1	0.065423873	0.004776127
2	0.063655256	-0.001855256
3	0.06115331	-0.00105331
4	0.060463117	0.000736883
5	0.059686651	-0.001386651
6	0.05955724	0.00134276
7	0.057961171	0.000138829
8	0.057184705	-0.003084705
9	0.056623924	0.003676076
10	0.056494513	-0.002094513
11	0.056235691	-0.000835691
12	0.054596485	0.001403515
13	0.054337662	0.000262338
14	0.053949429	0.005350571
15	0.052698456	-0.004798456
16	0.052396497	0.002103503
17	0.049549455	-0.002049455
18	0.049506318	-0.002706318
19	0.049118085	-0.004218085
20	0.048341619	-0.002841619
21	0.046227905	-0.006427905
22	0.044933795	-0.001533795
23	0.044373014	0.012226986
24	0.042906356	0.000293644
25	0.041569108	0.002730892
26	0.041008327	0.000591673
27	0.040878916	-0.000278916
28	0.039369121	-0.000469121

Notes:
(1) From Schedule MPG-8.

T-Statistic -10.44501515

Predicted Equity Risk Premium Relative to A Rated Public Utilty Bond Yields Based on Regression Analysis of OPC's Study on Schedule MPG-9



Missouri Gas Energy
Regression Predictions of Observed Equity Risk Premiums Relative to A Rated Utility Bond Yields
1986 - September 2013

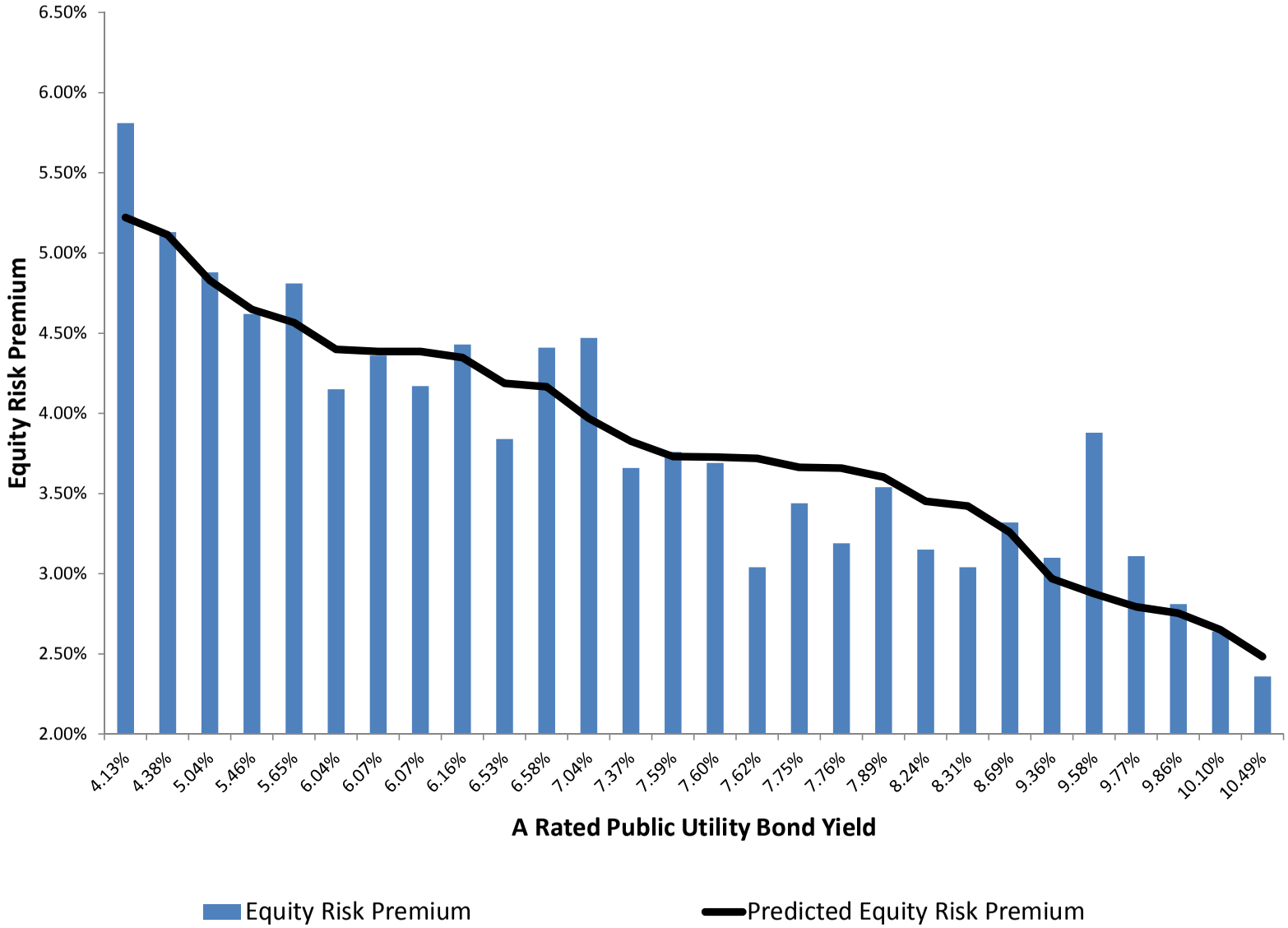
OPC's Observations (1)		Regression Predictions		
Year	Equity Risk Premium	*Observation*	*Predicted Y*	*Residuals*
1986	3.88%	1	0.027371182	0.011428818
1987	2.64%	2	0.028169349	-0.001769349
1988	2.36%	3	0.028967515	-0.005367515
1989	3.11%	4	0.029765681	0.001334319
1990	2.81%	5	0.030563848	-0.002463848
1991	3.10%	6	0.031362014	-0.000362014
1992	3.32%	7	0.032160181	0.001039819
1993	3.76%	8	0.032958347	0.004641653
1994	3.04%	9	0.033756513	-0.003356513
1995	3.54%	10	0.03455468	0.00084532
1996	3.44%	11	0.035352846	-0.000952846
1997	3.69%	12	0.036151013	0.000748987
1998	4.47%	13	0.036949179	0.007750821
1999	3.04%	14	0.037747345	-0.007347345
2000	3.15%	15	0.038545512	-0.007045512
2001	3.19%	16	0.039343678	-0.007443678
2002	3.66%	17	0.040141845	-0.003541845
2003	4.41%	18	0.040940011	0.003159989
2004	4.43%	19	0.041738177	0.002561823
2005	4.81%	20	0.042536344	0.005563656
2006	4.36%	21	0.04333451	0.00026549
2007	4.17%	22	0.044132677	-0.002432677
2008	3.84%	23	0.044930843	-0.006530843
2009	4.15%	24	0.045729009	-0.004229009
2010	4.62%	25	0.046527176	-0.000327176
2011	4.88%	26	0.047325342	0.001474658
2012	5.81%	27	0.048123508	0.009976492
2013	5.13%	28	0.048921675	0.002378325

T-Statistic 6.772597136

Notes:

(1) From Schedule MPG-9.

Predicted Equity Risk Premium Relative to A Rated Utility Bond Yields
Based on Regression Analysis of OPC's Study on Schedule MPG-9



Missouri Gas Energy

Regression Analysis of Observed Equity Risk Premiums Relative to A Rated Utility Bond Yields

1986 - September 2013

OPC's Observations (1)			Regression Predictions		
Year	Equity Risk Premium	Moody's A Rated Bond Yield	*Observation*	*Predicted Y*	*Residuals*
2012	5.81%	4.13%	1	0.052215186	0.005884814
2013	5.13%	4.38%	2	0.05113877	0.00016123
2011	4.88%	5.04%	3	0.048297031	0.000502969
2010	4.62%	5.46%	4	0.046488653	-0.000288653
2005	4.81%	5.65%	5	0.045670576	0.002429424
2009	4.15%	6.04%	6	0.043991367	-0.002491367
2006	4.36%	6.07%	7	0.043862198	-0.000262198
2007	4.17%	6.07%	8	0.043862198	-0.002162198
2004	4.43%	6.16%	9	0.043474688	0.000825312
2008	3.84%	6.53%	10	0.041881592	-0.003481592
2003	4.41%	6.58%	11	0.041666309	0.002433691
1998	4.47%	7.04%	12	0.039685703	0.005014297
2002	3.66%	7.37%	13	0.038264834	-0.001664834
1993	3.76%	7.59%	14	0.037317588	0.000282412
1997	3.69%	7.60%	15	0.037274532	-0.000374532
1999	3.04%	7.62%	16	0.037188418	-0.006788418
1996	3.44%	7.75%	17	0.036628682	-0.002228682
2001	3.19%	7.76%	18	0.036585625	-0.004685625
1995	3.54%	7.89%	19	0.036025889	-0.000625889
2000	3.15%	8.24%	20	0.034518907	-0.003018907
1994	3.04%	8.31%	21	0.03421751	-0.00381751
1992	3.32%	8.69%	22	0.032581358	0.000618642
1991	3.10%	9.36%	23	0.029696563	0.001303437
1986	3.88%	9.58%	24	0.028749317	0.010050683
1989	3.11%	9.77%	25	0.027931241	0.003168759
1990	2.81%	9.86%	26	0.027543731	0.000556269
1987	2.64%	10.10%	27	0.026510372	-0.000110372
1988	2.36%	10.49%	28	0.024831163	-0.001231163

T-Statistic -11.25066022

Notes:

(1) From Schedule MPG-9.

Missouri Gas Energy
Gorman Corrected Risk Premium Method
Reflecting a Forecasted Equity Risk Premium
Relative to an A2 Bond Rating

Based on Treasury Bond Yields

Projected 30 Year Treasury Bond (1)	4.40 %
Expected Risk Premium Over Long-Term Treasury Bonds (2)	6.33
Indicated Common Equity Cost Rate Based on Risk Premium Method	10.73 %
Projected 30 Year Treasury Bond (1)	4.40 %
Expected Equity Risk Premium due to Inverse Relationship between Treasury Bond Yields and Equity Risk Premia (3)	5.90
Indicated Common Equity Cost Rate Based on Risk Premium Method	10.30 %

Based on A2 Rated Public Utility Bond Yields

Moody's A2 Rated Public Utility Bond Yield (4)	4.75 %
Expected Equity Risk Premium Over A Rated Public Utility Bonds (5)	4.89
Indicated Common Equity Cost Rate Based on Risk Premium Method	9.64 %
Moody's A2 Rated Public Utility Bond Yield (4)	4.75 %
Expected Equity Risk Premium due to Inverse Relationship between Treasury Bond Yields and Equity Risk Premia (6)	4.95
Indicated Common Equity Cost Rate Based on Risk Premium Method	9.70 %
Average of Four Methods	10.10 %

Notes:
(1) From Schedule MPG-13.
(2) From Schedule PMA-18, Page 2.
(3) From Schedule PMA-18, Page 4.
(4) From Schedule MPG-11, Page 1.
(5) From Schedule PMA-18, Page 6.
(6) From Schedule PMA-18, Page 8.

Missouri Gas Energy
OPC Corrected Indicated Common Equity Cost Rate Through Use
of the Traditional Capital Asset Pricing Model (CAPM) and Empirical Capital Asset Pricing Model (ECAPM)

	1	2	3	4	5	6
OPC's Proxy Grou[of Eight Natural Gas Distribution Companies	Value Line Adjusted Beta	Market Risk Premium (1)	Risk-Free Rate (2)	Traditional CAPM Cost Rate (3)	ECAPM Cost Rate (4)	Indicated Common Equity Cost Rate (5)
AGL Resources, Inc.	0.75	7.18	4.40	9.79	10.23	10.01
Atmos Energy Coproration	0.80	7.18	4.40	10.14	10.50	10.32
New Jersey Resources Corporation	0.70	7.18	4.40	9.43	9.96	9.70
Northwest Natural Gas Company	0.65	7.18	4.40	9.07	9.70	9.38
Piedmont Natural Gas Co., Inc.	0.75	7.18	4.40	9.79	10.23	10.01
South Jersey Industries, Inc.	0.70	7.18	4.40	9.43	9.96	9.70
Southwest Gas Corporation	0.80	7.18	4.40	10.14	10.50	10.32
WGL Holdigns, Inc.	0.65	7.18	4.40	9.07	9.70	9.38
Average	0.73			9.61 %	10.10 %	9.86 %

Notes:

(1) Average of Value Line 3-5 year projected total return of the market from 10/18/13 - 1/10/14, PRPM™ projected risk premium through December 2013, and Ibbotson Arithmetic monthly risk premium of large stock minus the income return on long-term government bonds as shown below.

SBBI Large Stocks Total Return	11.83 %
SBBI Long-Term Gov't Bonds Income Return	5.28
SBBI Risk Premium	6.55 %
PRPM™ Risk Premium through Decmeber 31, 2013	10.42 %
VL Projected 3-5 year return on the market	
From VL Summary and Index for Oct. 2013 - Jan. 2014	6.98 %
Value Line Projected 3-5 year dividend yield	2.00
Value Line Projected 3-5 year total return on the market	8.98 %
Blue Chip Forecasts December 1, 2013 & January 1, 2014 projection of 30 year Treasury Bonds	4.40
Value Line Projected Risk Premium	4.58 %
Average Risk Premium	7.18 %

(2) From Schedule MPG-13.
(3) From Note 3 of Schedule 7, page 2 of 2.
(4) From Note 4 of Schedule 7, page 2 of 2.
(5) Average of Columns 4 and 5.

Sources of Information:
Blue Chip Financial Forecasts, December 1, 2013 and January 1, 2014
Value Line Summary and Index, 10/18/13 - 1/10/14
Value Line Standard Edition

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Missouri Gas Energy's Filing of Revised Tariffs to Increase its Annual Revenues For Natural Gas Service	)))	Case No. GR-2014-0007

AFFIDAVIT

STATE OF NEW JERSEY	)	
	)	SS.
COUNTY OF BURLINGTON	)	

Pauline M. Ahern, of lawful age, being first duly sworn, deposes and states:

1. My name is Pauline M. Ahern. My business address is 155 Gaither Drive, Suite A, Mt. Laurel, New Jersey 08054.; and I am a Principal of AUS Consultants.

2. Attached hereto and made a part hereof for all purposes is my rebuttal testimony on behalf of Missouri Gas Energy.

3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge and belief.

Pauline M. Ahern

Subscribed and sworn to before me this 27th day of February, 2014.

Notary Public

SHARON M. KEEFE
NOTARY PUBLIC OF NEW JERSEY
MY COMMISSION EXPIRES JULY 9, 2016