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July 13, 2005

Ms. Blanca S. Bayó, Director  
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and Administrative Services  
Florida Public Service Commission  
2540 Shumard Oak Boulevard  
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RE: Petition for Rate Increase by Progress Energy Florida, Inc.  
Docket No. 050078-EI

Dear Ms. Bayó:

Enclosed are an original and twenty-five (25) copies of the Direct Testimony of James A. Rothschild on behalf of the Office of Public Counsel for filing in the above-referenced docket.

Also enclosed is a 3.5 inch diskette containing the Direct Testimony of James A. Rothschild in Microsoft Word format. Please indicate receipt of filing by date-stamping the attached copy of this letter and returning it to this office. Thank you for your assistance in this matter.

Sincerely,

Joseph A. McGlothlin  
Associate Public Counsel

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## CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing Direct Testimony of James A. Rothschild has been furnished by electronic mail and U.S. Mail on this 13<sup>th</sup> day of July, 2005, to the following:

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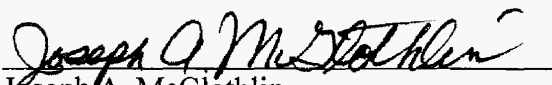
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**BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION**

In re: Petition for rate increase by  
Progress Energy Florida, Inc.  
\_\_\_\_\_ /

Docket No. 050078-EI

Filed: July 13, 2005

**DIRECT TESTIMONY**

**OF**

**JAMES A. ROTHSCILD**

On Behalf of

The Citizens of the State of Florida

DOCUMENT NUMBER-DATE  
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## TABLE OF CONTENTS

	<u>Page</u>
1 I. STATEMENT OF QUALIFICATIONS OF JAMES A. ROTHSCHILD	3
2 II. PURPOSE.....	4
3 III. SUMMARY OF FINDINGS AND RECOMMENDATIONS .....	4
4 V. CAPITAL STRUCTURE.....	9
5 VI. COST OF DEBT .....	27
6 VI. COST OF COMMON EQUITY.....	28
7 A. SUMMARY OF CONCLUSIONS ON COST OF EQUITY.....	28
8 B. OVERVIEW OF COST OF EQUITY .....	30
9 C. DCF METHOD .....	33
10 D. RISK PREMIUM/CAPM METHOD .....	50
11 VIII. EVALUATION OF THE TESTIMONY OF DR. VANDER WEIDE ...	60
12 A. INTRODUCTION .....	60
13 B. MISUSE OF DCF METHOD .....	62
14 C. INCORRECT USE OF FIVE-YEAR GROWTH RATES IN DCF METHOD.....	63
15 D. UPWARD ADJUSTMENT FOR QUARTERLY DIVIDEND PAYMENTS .....	71
16 E. DR. VANDER WEIDE'S RISK PREMIUM METHOD.....	72
17 PAGE 181 OF THE "STOCKS, BONDS, BILLS, AND INFLATION" 2005 YEARBOOK BY IBBOTSON	
18 ASSOCIATES SAYS:.....	84
19 F. UPWARD ADJUSTMENT FOR FINANCING COSTS .....	86
20 G. IMPROPER ADJUSTMENT FOR FINANCIAL RISK .....	87
21 H. USE OF MARKET VALUE CAPITAL STRUCTURE	100

1 IX. COMMENTS ON THE TESTIMONY OF MR. POURTUONDO.....94

2 X. RESPONSE TO DR. CICHETTI'S PROPOSED "BONUS" .....97

3 XI. CONCLUSION .....102

4

5

6

7

1 **I. STATEMENT OF QUALIFICATIONS OF JAMES A. ROTHSCHILD**

2 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

3 A. My name is James A. Rothschild and my address is 115 Scarlet Oak Drive,  
4 Wilton, Connecticut 06897.  
5

6 Q. WHAT IS YOUR OCCUPATION?

7 A. I am a financial consultant specializing in utility regulation. I have experience in  
8 the regulation of electric, gas, telephone, sewer, and gas utilities throughout the  
9 United States.  
10

11 Q. PLEASE SUMMARIZE YOUR UTILITY REGULATORY EXPERIENCE.

12 A. I am President of Rothschild Financial Consulting and have been a consultant  
13 since 1972. From 1979 through January 1985, I was President of Georgetown  
14 Consulting Group, Inc. From 1976 to 1979, I was the President of J. Rothschild  
15 Associates. Both of these firms specialized in utility regulation. From 1972  
16 through 1976, Touche Ross & Co., a major international accounting firm,  
17 employed me as a management consultant. Touche Ross & Co. later merged to  
18 form Deloitte Touche. Much of my consulting at Touche Ross was in the area  
19 of utility regulation. While associated with the above firms, I have worked for  
20 various state utility commissions, attorneys general, utility customers and  
21 public advocates on regulatory matters relating to regulatory and financial

1 issues. These have included rate of return, financial issues, and accounting  
2 issues. (See Appendix A, which has been identified as Exhibit \_\_ (JAR-16).)

3  
4 Q. WHAT IS YOUR EDUCATIONAL BACKGROUND?

5 A. I received an MBA in Banking and Finance from Case Western University  
6 (1971) and a BS in Chemical Engineering from the University of Pittsburgh  
7 (1967).

8 **II. PURPOSE**

9  
10 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

11 A. I have been engaged by the Florida Office of Public Counsel to recommend the  
12 appropriate capital structure and a fair cost of capital that the Commission  
13 should employ in this case and to comment on the cost of capital testimony  
14 filed by PEF Witness Dr. Vander Weide.

15  
16 Q. ARE YOU SPONSORING ANY EXHIBITS TO YOUR TESTIMONY?

17 A. Yes. I am sponsoring Exhibit Nos. \_\_\_\_ (JAR-1 – 16), which support and  
18 illustrate the points I develop in my testimony.

19 **III. SUMMARY OF FINDINGS AND RECOMMENDATIONS**

20  
21 Q. PLEASE SUMMARIZE YOUR FINDINGS.

22 A. In my testimony I will develop the following points:

- 1 1. PEF seriously overreaches in its requests in the areas of capital structure and  
2 return on equity. When one corrects for PEF's excesses in these areas alone,  
3 the result is to more than offset the company's entire request for an increase  
4 in base rate revenues. This is without considering any other needed  
5 adjustments.  
6
- 7 2. PEF proposes to employ a capital structure containing 63% equity, ostensibly  
8 to support an upgrade by bond ratings agencies. While I disagree that a  
9 higher rating for PEF either is needed or would benefit customers, the more  
10 important point is that the proposed capital structure would require PEF  
11 customers to subsidize Progress Energy Consolidated without providing any  
12 real assistance in the form of enhanced rating agency review. This is because  
13 Progress Energy's "problem" with rating agencies is—not the regulated  
14 utility—but the weaker financial structure of the parent, which is the focus of  
15 rating agency reviews of both entities.  
16
- 17 3. PEF's request to impute additional equity in the capital structure to offset  
18 "purchased power" improperly singles out one risk factor to the exclusion of  
19 considerations that mitigate risk, while continuing to ignore the importance of  
20 the parent's capital structure in rating agency determinations.  
21
- 22 4. Dr. Van der Weide's proposal of 12.8% ROE is the product of a seriously and  
23 demonstrably flawed application of the DCF and risk premium  
24 methodologies.  
25
- 26 5. To avoid requiring PEF's customers to subsidize PEF's parent, Progress  
27 Energy, and separately to ensure that ratepayers receive at least some of the  
28 benefits associated with fully protecting investors from storm damage risk, I  
29 recommend that the Commission employ the parent's consolidated capital

1 structure for ratemaking purposes. This capital structure currently contains  
2 41.8% common equity, 57.6% debt, and 0.5% preferred stock.  
3

4  
5 6. I recommend that Progress Energy Florida (PEF) be allowed an overall cost  
6 of capital of 6.65%. This is based upon an overall cost of capital using a 9.10%  
7 cost of equity, 5.73% cost of long-term debt, 4.04% cost of short-term debt and  
8 4.58% cost of preferred stock. It is also based upon the actual consolidated  
9 financial capital structure of parent Progress Energy that I have described and a  
10 Florida regulatory basis capital structure as shown on Exhibit \_\_\_\_ (JAR 1), Page  
11 2.

12  
13 **IV. INTRODUCTION**  
14

15 Q. HOW DOES YOUR OVERALL COST OF CAPITAL COMPARE TO THE  
16 COST OF CAPITAL REQUESTED BY THE COMPANY?

17 A. From my experience, it is common for companies to overstate the cost of capital  
18 when computing their overall revenue requirements. In this case, the Company's  
19 requested cost of capital exceeds its true cost of capital significantly more than is  
20 normally encountered. By over-allocating expensive common equity to the  
21 regulated operations of PEF and through a series of inappropriate adjustments  
22 proposed by company witness Mr. Portuondo, the Company has requested that its  
23 cost of capital be computed using a financial capital structure containing 63.08%  
24 common equity (Exhibit \_\_\_\_ (JAR-1)), p. 2) even though on a consolidated basis  
25 (one that includes both regulated and unregulated operations), Progress Energy is



1 actually financed with a capital structure containing approximately 41.8%  
2 common equity. (Exhibit (JAR-1)), page 1. The Company has coupled to this  
3 request for a capital structure that contains an excessive level of common equity  
4 a substantially overstated cost of equity request of 12.8%. The request is based  
5 upon the already excessive 12.3% recommended by Dr. Vander Weide, which  
6 was then increased by an additional 0.50% based on the desire of Dr. Cicchetti to  
7 reward PEF for efficiency. Based upon the capital structure requested by the  
8 Company, this 0.50% "reward" amounts to an additional rate increase of over  
9 \$20 million per year. The "pre-award" value of 12.3 % is itself the subject of an  
10 unwarranted upward adjustment. Dr. Vander Weide starts from a more  
11 "normally" overstated cost of equity request of 11.4%, but then increases it based  
12 upon claimed financial risk considerations -- even though, especially after  
13 considering the benefits of eliminating storm-damage risk exposure, the  
14 requested capital structure of PEF has far less financial risk than the capital  
15 structures of other companies that purportedly serve as the basis for his  
16 adjustment.

17 The combined effect of the very high cost of equity request and the  
18 inappropriate capital structure computation would drive PEF's cost of capital  
19 computation up to a grossly overstated 9.50% instead of the far more reasonable  
20 result of 6.65% that I have recommended.

21  
22 Q. HOW SIGNIFICANT IS THE IMPACT OF THE COMPANY'S OVERLY  
23 AGGRESSIVE COST OF CAPITAL REQUEST?

1 A. As shown on Exhibit \_\_\_ (JAR-1), page 4), the Company's requested cost of  
2 capital is so overstated that if the company had not overreached in the area of cost  
3 of capital it would have been requesting a \$35.4 million *rate decrease* instead of  
4 the completely unnecessary \$205.6 million *rate increase* request. This rate  
5 decrease of \$35.4 million is based on the impact of the requested cost of capital  
6 alone. It does not consider any other adjustments that may be appropriate to the  
7 Company's requested rate base or operating income at present rates.

8

9 Q. HAVE YOU EVER TESTIFIED IN ANOTHER RATE CASE IN WHICH  
10 CHANGES YOU HAVE PROPOSED TO THE COST OF CAPITAL IN AND  
11 OF THEMSELVES CHANGED THE REVENUE REQUIREMENT FROM A  
12 LARGE INCREASE TO A MEANINGFUL RATE DECREASE?

13 A. No, not that I remember. The excessive nature of the cost of capital requested by  
14 the Company in this case cannot be stressed enough.

15

16 Q. DOES OPC'S RECOMMENDATION IN THIS CASE ALLOW PEF TO  
17 MAINTAIN ITS BBB BOND RATING?

18 A. Yes. The capital structure I have recommended is consistent with the actual  
19 capital structure being used by Progress Energy to finance its operations and my  
20 recommended cost of equity is consistent with the 9.0% return on equity Value  
21 Line has projected Progress Energy will earn in 2008-2010. Therefore, even  
22 though OPC's overall recommendation is for a very substantial rate reduction, the

1 returns PEF will earn that are consistent with OPC's recommendation will  
2 provide the capital structure and coverage ratios that are already expected.  
3

#### 4 V. CAPITAL STRUCTURE

5

6 Q. WHAT CAPITAL STRUCTURE HAVE YOU RECOMMENDED IN THIS  
7 CASE?

8 A. I recommend that the overall cost of capital of PEF be computed using the  
9 Florida regulatory basis capital structure shown on Exhibit \_\_ (JAR-1), Page 2.  
10 This is based on a financial basis capital structure consisting of 41.8% common  
11 equity, 0.5% preferred equity, and 57.7% debt, as shown on Schedule JAR 1,  
12 Page 1. I arrived at this recommended capital structure based on the actual  
13 capital structure being used by Progress Energy on a consolidated basis as of  
14 December 31, 2004. I also made the following observations:

15  
16 a) *Industry Average Capital Structure.* The average financial basis  
17 capital structure of the electric companies selected by Dr. Vander  
18 Weide is 44.21% common equity, 1.10% preferred equity, and  
19 54.74% debt (See Schedule JAR 3, Page 2)). This slightly lower debt  
20 percentage being used on average by the group as compared to the  
21 actual capital structure being used by Progress Energy is consistent  
22 with the slightly higher average bond rating that has been awarded to  
23 the group selected by Dr. Vander Weide.  
24

25 b) *Target Capital Structure.* Progress Energy stated in its 2004 Annual  
26 Report to Stockholders that its target financial basis capital structure  
27 is one that contains 55% total debt (Page 7 of the Progress Energy  
28 2004 Annual Report to Stockholders, and response to Citizen's 3<sup>rd</sup> Set  
29 of Interrogatories, Question #112.) as contrasted to 63.08% equity that  
30 it has requested in this rate case if the capital structure is computed on  
31 the same basis as what Progress Energy used for its target. See  
32 Schedule JAR 1, Page 2. This 55% target debt level is a result that is

1 not only close to the actual capital structure it is now using, but is also  
2 virtually identical to the average capital structure of the electric utility  
3 group selected by Dr. Vander Weide.  
4

5 c) *S&P Guidelines for BBB rating.* S&P specifies that its capital  
6 structure guidelines (financial basis) for a BBB rated electric company  
7 in Progress Energy's risk category of "5" is debt as a percentage of  
8 total capital of between 50% and 60% (See page 45 of S&P Corporate  
9 Rating Criteria 2005. The mid-point of this range is exactly equal to  
10 Progress Energy's target capital structure, but is also virtually  
11 identical to the average capital structure being used by the  
12 comparative group of electric companies.  
13

14 The percentage of common equity in the capital structure of Progress Energy  
15 Consolidated is within a reasonable range and therefore could be maintained in  
16 the long-run. If the common equity ratio of Progress Energy consolidated were  
17 actually increased, rather than merely "imputed" at the level of PEF for  
18 ratemaking purposes, within reason such an increase could benefit ratepayers by  
19 having a company with lower financial risk.  
20

21  
22 Q. IS THERE ANY REASON PROGRESS ENERGY FLORIDA REQUIRES  
23 THE 36.33% DEBT LEVEL REQUESTED BY THE COMPANY RATHER  
24 THAN THE 55-57.6% DEBT LEVELS BEING USED SUCCESSFULLY BY  
25 THE COMPARATIVE GROUP OF COMPANIES AND BY THE  
26 CONSOLIDATED PROGRESS ENERGY?

27 A. No. To require a debt level of no more than 36.33%, (financial basis as derived  
28 on Exhibit \_\_\_\_ (JAR-1), Page 2, or on relative terms about 20% less debt used  
29 by either the consolidated Progress Energy or by the comparative group,  
30 Progress Energy Florida would have to be in a significantly higher risk category  
31 than either the consolidated Progress Energy or the average of the comparative

1 groups. S&P's bond rating write-up shows that, if anything, Progress Energy  
2 Florida is in a lower risk category than the consolidated Progress Energy. Even  
3 the Company does not claim that Progress Energy Florida is in a higher risk  
4 category than the consolidated Progress Energy. See Exhibit \_\_\_\_ (JAR-15), the  
5 response to Citizen's 3<sup>rd</sup> Set of Interrogatories, Question # 126.

6  
7 Q. IN HIS DIRECT TESTIMONY, DR. CICHETTI CLAIMS THAT PEF IS  
8 REQUESTING A CAPITAL STRUCTURE CONTAINING 55% EQUITY,  
9 WHILE YOU SAY THE COMPANY HAS REQUESTED A CAPITAL  
10 STRUCTURE CONTAINING 63.08% COMMON EQUITY. PLEASE  
11 EXPLAIN THE DIFFERENCE.

12 A. A. My Schedule JAR 1, Page 2 shows that the capital structure being requested  
13 by PEF is really 63.08% common equity if placed on the same financial basis that  
14 is used by Progress Energy for setting its capital structure target *and* by rating  
15 agencies. As also shown on Exhibit \_\_\_\_ (JAR-1), Page 2, even if the capital  
16 structure is put on a Florida regulatory basis, the PEF requested capital structure  
17 still contains 57.83% equity, not the 55% cited by Dr. Cicchetti. As stated by Mr.  
18 Sullivan on page 10 of his testimony, the 55% common equity ratio is "... before  
19 taking long-term purchased power contracts into account."

20  
21 Q. DOES THE EXISTENCE OF PURCHASED POWER CONTRACTS  
22 INFLUENCE THE COMPARATIVE ANALYSIS?

23 A. First, as explained more fully below, when deciding what capital structure to  
24 target for Progress Energy consolidated, the parent did not make an adjustment for  
25 the effect of PEF's contracts on Progress Energy's rating. Second, if one wants to  
26 compare the capital structure of PEF adjusted for purchased power contracts, any

1 comparisons to other companies should also be done after making purchased power  
2 contract adjustments to the other companies.

3

4 Q. DOES PROGRESS ENERGY FLORIDA HAVE A SIGNIFICANTLY  
5 HIGHER PERCENTAGE OF PURCHASED POWER CONTRACTS THAN  
6 THE PERCENTAGE OF PURCHASED POWER CONTRACTS USED BY  
7 COMPANIES IN THE COMPARATIVE GROUP SELECTED BY DR.  
8 VANDER WEIDE?

9 A. I do not know. In an attempt to test the validity of the Company's claim  
10 regarding the impact of purchased power contracts on the proper capital  
11 structure for Progress Energy Florida, the Company was asked to provide the  
12 purchased power information relative to companies in his comparable group  
13 in a form similar to that presented by Dr. Vander Weide on page 22 of his  
14 testimony. The Company has refused to provide the information. See  
15 Exhibit \_\_\_\_ (JAR-15), the response to Citizen's 3<sup>rd</sup> Set of Interrogatories,  
16 Question # 141. Suffice it to say that, with respect to the companies in his  
17 comparable group, Dr. Van der Weide did not attempt to "follow through"  
18 with his proposed adjustment. The absence of this subject as a consideration  
19 in Dr. Vander Weide's comparison of PEF and other companies is telling, as  
20 it is a measure of the significance—or lack thereof-- he attributes to it.

21

22 Q. EVEN IF IT WERE DETERMINED REASONABLE TO CONSIDER  
23 PURCHASED POWER AS A RELEVANT FACTOR, WOULD THAT  
24 JUSTIFY A LOWER DEBT LEVEL FOR PROGRESS ENERGY FLORIDA?

25 A. No. The Company has failed to present any such justification. If risk  
26 adjustments are made, it is improper to make an adjustment for only one factor

1 without also considering others. S&P notes that, compared to the rest of Progress  
2 Energy, Progress Energy Florida has the relative advantage of stability. In  
3 contrast, S&P finds that Progress Energy's "...merchant generation operations  
4 remain high risk." (See Exhibit \_\_\_ (JAR-15), OPC 2<sup>nd</sup> POD #86). Therefore, in  
5 aggregate, if anything Progress Energy Florida should be able to carry a  
6 percentage of debt higher than that of the consolidated Progress Energy and still  
7 be able to maintain a BBB bond rating.

8  
9 Q. HOW SHOULD THE COMMISSION DETERMINE THE CAPITAL  
10 STRUCTURE TO USE IN THE DETERMINATION OF THE OVERALL  
11 COST OF CAPITAL APPLICABLE TO THE REGULATED ELECTRIC  
12 OPERATIONS OF PEF?

13 A. Ideally the Commission should use the capital structure that will balance safety  
14 and economy. However, the determination of the capital structure that would  
15 produce the lowest overall cost of capital is a controversial undertaking.  
16 Therefore, commissions frequently look to actual capital structures as indicators  
17 of the capital structures that will produce the lowest overall cost of capital.  
18 Utility rate regulation is a substitute for competition. Competition puts continual  
19 pressure on companies to provide services desired by its customers at the lowest  
20 price. To provide services at the lowest price, competitive companies have to  
21 minimize all costs, including the cost of capital. The cost of capital can be highly  
22 influenced by the capital structure a company uses.



1           **It cannot be stressed strongly enough that the reported capital structure**  
2           **of wholly owned subsidiaries such as PEF does not provide insight into what**  
3           **capital structure management believes will produce the lowest overall cost of**  
4           **capital.** Subsidiary capital structures can, and often do, contain equity that was  
5           actually raised by its parent in the form of debt and not equity. Holding  
6           companies with regulated subsidiaries have a special incentive to put extra equity  
7           on the books of such regulated subsidiaries when the only point to such excess  
8           equity is to rationalize a higher than appropriate revenue requirement (and  
9           correspondingly large dividends to be paid to the parent).

10           Significantly, Standard & Poors is specifically aware of the problems  
11           associated with a high common equity ratio reported on the books of regulated  
12           subsidiaries when such extra equity disappears at the consolidated level:

13                               Utilities are often owned by companies that own other, riskier  
14                               businesses or that are saddled with an additional layer of debt  
15                               at the parent level. Corporate rating criteria would rarely view  
16                               the default risk of an unregulated subsidiary as being  
17                               substantially different from the credit quality of the  
18                               consolidated economic entity (which would fully take into  
19                               account parent-company obligations). Regulated subsidiaries  
20                               can be treated as exceptions to this rule – if the specific  
21                               regulators involved are expected to create barriers that insulate  
22                               a subsidiary from its parent.  
23

24           See page 43 of Corporate Rating Criteria from Standard & Poors, a copy  
25           included in Exhibit \_\_ (JAR-14).

26           Based upon the principles in the above statement, in spite of the substantial  
27           extra percentage of common equity in the capital structure of PEF compared to  
28           the consolidated Progress Energy, over time PEF has still received the same BBB

1 bond rating as the consolidated Progress Energy. Without the benefits of the  
2 stronger bond rating to accompany it, the extra equity Progress Energy Florida  
3 has arranged to show on its books only serves to make the overall cost of capital  
4 appear considerably more expensive than it is. A review of documents from  
5 Standard & Poors definitively shows this:

6  
7 a) Page 45 of the 2005 edition of "Corporate Rating Criteria" shows  
8 that a company such as Progress Energy Florida with a risk rating of "5" (See  
9 the response to to interrogatory number 158 from the Citizen's 3<sup>rd</sup> set of  
10 Interrogatories included in Exhibit \_\_ (JAR-14) should have the 50-60% debt  
11 in its capital structure that Progress Energy has in order to obtain the BBB  
12 bond rating. The 44.35% debt ratio being claimed by Progress Energy  
13 Florida for its cost of capital computation is towards the stronger end of the  
14 target range of 42-50% debt sufficient for an A rating and is a far stronger  
15 capital structure than the 50-60% range Standard & Poors finds consistent for  
16 a BBB rating when the risk rating is "5".

17  
18 b) The Standard & Poors research report on Progress Energy Florida  
19 provided in response to OPC 2<sup>nd</sup> POD #86 (Exhibit \_\_\_\_ (JAR-14)) states the  
20 following:

21  
22 The ratings on Florida Power Corp. (d/b/a Progress Energy  
23 Florida) reflect the consolidated credit profile of the parent Progress  
24 Energy Inc. The 'BBB' corporate credit rating on Progress Energy and  
25 its utility subsidiaries reflect weakened utility financial performance  
26 stemming from the economic downturn and rate reduction,  
27 compounded by overcapacity in the Southeast, which has weakened  
28 the financial performance of the unregulated generation portfolio, and  
29 high financial leverage. The company's tax-advantaged synthetic fuel  
30 business also has the effect of reducing the company's cash flow in the  
31 intermediate term.

1           The wholly owned subsidiaries include Carolina Power &  
2           Light Co. (CP&L d/b/a Progress Energy Carolinas), Florida Power,  
3           and Progress Ventures. The Average business position is supported by  
4           the relatively stable regulated utilities, CP&L and Florida Power,  
5           which contribute 80% of the consolidated company's net income.  
6           Long-term growth prospects remain strong in the vibrant Florida  
7           service area while the negative trend in North Carolina's industrial  
8           sales is expected to stabilize in the near term, after four years of  
9           significant declines. The merchant generation operations remain high  
10          risk.

11  
12          Based on the above, it can be seen that the bond rating of Progress Energy  
13          Florida is constrained, not only by the total amount of debt in the consolidated  
14          capital structure, but also by the higher risks associated with the unregulated and  
15          non-Florida regulated operations of the consolidated Progress Energy. The above  
16          statements also show that the extra common equity Progress Energy now wants  
17          to create on the books of PEF for ratemaking purposes should not be expected to  
18          help strengthen PEF's bond rating. If the Company wants a higher bond rating  
19          for PEF, it would have to lower the debt ratio and increase the common equity  
20          ratio of the consolidated Progress Energy. Practically speaking, based on the  
21          rating agencies' criteria and practices, only by bringing the common equity ratio  
22          of PEF up to that of the consolidated Progress Energy, would a bond upgrade be  
23          possible.

24  
25          Q. IS THE STANDARD AND POORS REPORT CITED ABOVE CONSISTENT  
26          WITH STANDARD & POORS' NORMAL RATING POLICY?

27          A. Yes. The 2005 "Corporate Rating Criteria" book explains S&P's view of  
28          "Parent/Subsidiary Links" in a chapter beginning on page 86. (See Exhibit \_\_  
29          (JAR-14). This page states the following:

1 A weak entity owned by a stronger parent usually—although not always—  
2 will enjoy a stronger rating than it would on a stand-alone basis.

3  
4 And:

5 A strong subsidiary owned by a weak parent generally is generally  
6 rated no higher than the parent.  
7

8  
9 S&P continues, on the same page, to state that the reason why a strong  
10 subsidiary is generally not rated any higher than the parent is because:

11 ... in most cases, a 'strong' subsidiary is no further from bankruptcy than its  
12 parent, and thus cannot have a higher rating.  
13  
14

15 The above statements show that even though Progress Energy Florida  
16 likely has a lower business risk than the consolidated Progress Energy, it will  
17 not get a bond rating higher than the consolidated Progress Energy. This is true  
18 irrespective of the non-existent common equity Progress Energy asks the  
19 Commission to assume for ratemaking purposes. Progress Energy Florida's  
20 proposed high common equity ratio accomplishes nothing other than to create  
21 the appearance of a higher cost of capital for Progress Energy Florida in its  
22 rate case than is realistic. The sole effect would be to increase PEF's revenue  
23 requirements above that which would be required to earn PEF's true cost of  
24 capital.  
25

26 Q. DOES THE COMPANY CLAIM THAT THE SUBSTANTIAL INCREASE  
27 IN THE COMMON EQUITY RATIO OF PROGRESS ENERGY FLORIDA  
28 WILL INCREASE PROGRESS ENERGY FLORIDA'S BOND RATING?

1 A. No. See the response to Citizens 3<sup>rd</sup> Set of Interrogatories, Question # 135  
2 (Exhibit \_\_\_\_ (JAR-15). Without so much as even a claim by the requesting  
3 utility that the measure will have that effect, it is entirely unfair to ask  
4 ratepayers to pay millions of dollars more to support a capital structure  
5 containing so much more common equity than is actually being employed by  
6 Progress Energy consolidated. It appears to me that the Progress Energy  
7 Florida capital structure's extra equity serves no benefit other than to cause the  
8 computation of the overall cost of capital for regulatory purposes to appear  
9 much higher than it really is, or needs to be.  
10

11 Q. DOES PROGRESS ENERGY HAVE A TARGET CAPITAL STRUCTURE IT  
12 IS TRYING TO ACHIEVE?

13 A. Yes. Page 7 of the 2004 Progress Energy Annual Report to Stockholders that is  
14 contained in Section F of the Minimum Filing Requirements states: "In 2004, we  
15 improved our balance sheet by reducing our debt-to-capitalization ratio to 57.6  
16 percent. We're on track to reach our goal of 55 percent." While I have chosen  
17 not to make this target capital structure my primary recommendation (because we  
18 cannot be sure the Company will actually implement its target), if the target  
19 capital structure were to be used, then my recommended overall cost of capital  
20 would increase from 6.37% to 6.45%. However, it is important to remember that  
21 the appropriate return on equity varies as a function of the level of debt in the  
22 capital structure. If this planned reduction in Progress Energy's level of debt  
23 were to be reflected in the choice of capital structure in this case, my  
24 corresponding recommendation for the cost of equity would change from 9.10%  
25 to 9.00%.  
26

1 Q. WHY DID PROGRESS ENERGY (CONSOLIDATED) SELECT A CAPITAL  
2 STRUCTURE WITH 55% DEBT AS ITS TARGET?

3 A. According to the Company's response to 112c in the Citizen's Third Set of  
4 Interrogatories in this proceeding (Exhibit \_\_\_\_ (JAR-15)), the Company chose  
5 the 55% debt target for the capital structure of the consolidated Progress Energy  
6 "... based primarily on leverage guidelines and median ranges for BBB rated  
7 electric utility holding companies."  
8

9 Q. WHEN MAKING ITS DECISION TO TARGET THE 55% DEBT RATIO, DID  
10 PROGRESS ENERGY MAKE THE SAME ADJUSTMENT FOR  
11 PURCHASED POWER THAT IS PROPOSED BY DR. VANDER WEIDE ON  
12 PAGE 22 OF HIS TESTIMONY IN THIS PROCEEDING?

13 A. No . See the response to Citizen's 3<sup>rd</sup> Set of Interrogatories, #112 b, included in  
14 Exhibit \_\_\_\_ (JAR-14). This shows that Dr. Vander Weide's approach and Mr.  
15 Portuondo's proposed adjustment to capital structure selection differs from the  
16 method used by the management of Progress Energy. Since Progress Energy has  
17 not made any special adjustments for purchased power when providing the  
18 justification for the capital structure it is actually implementing, it would be  
19 inconsistent to treat purchased power any differently in this rate case.  
20

21 Q. IS THE CAPITAL STRUCTURE REQUESTED BY THE COMPANY THAT  
22 CONTAINS 63.08% COMMON EQUITY AND ONLY 36.33% DEBT A  
23 REASONABLE BASIS FOR DETERMINING THE COST OF CAPITAL IN  
24 THIS PROCEEDING?

25 A. No. Particularly in light of an actual structure that includes debt above 50% at the  
26 consolidated level, it is unreasonable. If used, it would result in the computation  
27 of a rate increase when, in reality, the Company should be ordered to lower rates.

1 The requested capital structure is merely the product of internal bookkeeping, and  
2 inappropriate, unwarranted adjustments, and not one that is reflective of the true  
3 financial risk impacting the bond investors of Progress Energy Florida. To the  
4 extent the percentage of common equity in the capital structure of PEF exceeds  
5 the Progress Energy consolidated level, such excess has little or no impact on the  
6 bond rating of PEF. However, if the level of common equity in the capital  
7 structure of PEF should fall below the level of equity in the capital structure of  
8 Progress Energy consolidated to an extent not justified by the difference in risk  
9 profile, then this could eventually cause PEF to have a bond rating lower than  
10 that of Progress Energy.

11 As is shown later in this testimony, Standard & Poors has effectively rated  
12 the debt of Progress Energy Florida based on the consolidated Progress Energy  
13 capital structure. Because Progress Energy on a consolidated basis carries far  
14 less equity than is proposed for Progress Energy Florida, the extra equity being  
15 requested for Progress Energy Florida fails to provide the financial strength  
16 benefits that would be associated with the proposed increase in the common  
17 equity ratio. The use of the Progress Energy Florida capital structure contributes  
18 to a substantially exaggerated computation of the overall cost of capital at a great,  
19 wasted expense to ratepayers. The use of the Progress Energy Florida capital  
20 structure would also be wrong because it would force ratepayers to subsidize the  
21 unregulated operations of Progress Energy.

22  
23 Q. HOW DO YOU KNOW THAT THE USE OF THE PROGRESS ENERGY  
24 FLORIDA BALANCE SHEET WOULD RESULT IN RATEPAYERS  
25 SUBSIDIZING THE UNREGULATED OPERATIONS OF PROGRESS  
26 ENERGY?



1 A. As shown on Exhibit \_\_\_\_ (JAR- 1), Page 3, if the capital structure of Progress  
2 Energy Florida and Progress Energy Carolina are subtracted from the  
3 consolidated capital structure, what is left is an entity with over \$7 billion of total  
4 capital, only about 31.9% of which is common equity. Since the unregulated  
5 operations are the most risky portion of the business of Progress Energy  
6 consolidated, it is impossible to believe that the common equity ratios for the  
7 regulated operations would be economically chosen to contain so much more  
8 common equity than the effective amount left over for regulated operations.  
9 Furthermore, the numbers I have presented are actual as of December 31, 2004.  
10 In this rate case, the Company has proposed to increase the common equity ratio  
11 of Progress Energy Florida over the approximately 48.5% as of December 31,  
12 2004 up to 63.08% (See Exhibit \_\_\_\_ (JAR-1), P. 2)). Such an increase in the  
13 common equity ratio of Progress Energy Florida is proposed by the Company to  
14 occur merely because of an increase in the allocation of total common equity to  
15 Florida operations (see the response to Citizen's 3<sup>rd</sup> Set of Interrogatories,  
16 Question # 136 in Exhibit \_\_\_\_ (JAR-15)). If Progress Energy Florida actually  
17 does what it has proposed to do, the effect would be for the effective common  
18 equity ratio for the unregulated operations of Progress Energy to drop even  
19 further.

20  
21 Q. HOW DOES USING THE HIGHER COMMON EQUITY RATIO OF  
22 PROGRESS ENERGY FLORIDA IMPACT THE INCENTIVE FOR THE  
23 COMPANY TO IMPLEMENT A PROPER CAPITAL STRUCTURE?

24 A. If the Commission were to make the mistake of using the capital structure  
25 requested by the Company for ratemaking purposes, in addition to overcharging  
26 of ratepayers it would provide the Company with an incentive to maintain a

1 consolidated common equity ratio at a lower level than if the Commission were  
2 to instead compute the overall cost of capital based on the consolidated capital  
3 structure. The more that the level of common equity in the capital structure used  
4 to compute the overall cost of capital exceeds the real, consolidated, common  
5 equity level, the higher the extent to which the real return on equity earned by  
6 Progress Energy on its regulated operations in Florida exceeds the cost of equity  
7 allowed by the Commission.

8  
9 Q. ON PAGE 33 OF HIS TESTIMONY, DR. CICHETTI SAYS THAT "...AS  
10 THE DEBT TO EQUITY RATIO INCREASES, THE ROD [RETURN ON  
11 DEBT] WILL BEGIN TO INCREASE AS BOND RATINGS ARE LOWERED,  
12 INCREASING OVERALL ROR. SECOND, FINANCIAL RISK OF THE FIRM  
13 IS HIGHER AS DEBT-TO-EQUITY RATIO INCREASES." PLEASE  
14 RESPOND.

15 A. As they relate to a stand-alone entity, those statements are generally correct.  
16 However, whether they are applicable to PEF requires a consideration of PEF's  
17 place in the overall corporate structure. What Dr. Cicchetti has failed to  
18 recognize is that the trade-off between the cost of debt and capital structure for  
19 PEF does not take place at the PEF level, but at the Progress Energy consolidated  
20 level. Standard & Poors recognizes that the higher debt ratio carried by the  
21 consolidated Progress Energy controls the bond rating of not only Progress  
22 Energy, but PEF as well. Therefore, the huge fallacy in what the Company is  
23 proposing is that it wants to receive the extra return for an especially thick

1 common equity ratio without any hope of receiving the lower cost of debt that  
2 would accrue to such an equity rich capital structure -- because Standard & Poors  
3 recognizes that the higher debt ratio carried by the consolidated Progress Energy  
4 controls the bond rating of not only Progress Energy, but PEF as well.

5  
6 Q. DOES THE COMMISSION'S DECISION TO PROTECT INVESTORS FROM  
7 STORM DAMAGE COSTS INFLUENCE THE CHOICE OF CAPITAL  
8 STRUCTURE IN THIS PROCEEDING?

9 A. Yes. The process of passing on all storm damage costs to ratepayers means that  
10 ratepayers are entitled to benefit from any reduction in the cost of capital that  
11 results from this risk reduction treatment. The most direct impact of protecting  
12 the company from storm damage expense exposure is in its capital structure.  
13 Debt is less expensive than equity, and so should be employed prudently to lower  
14 overall revenue requirements. The appropriate level of debt in the capital  
15 structure is directly a function of the company's risk profile. The higher the risk,  
16 the lower the amount of debt that is appropriate, and vice versa. The elimination  
17 of storm damage risk enables the company to prudently use more debt, and  
18 thereby lowers the cost of capital. Since this extra debt will show up on the  
19 consolidated books of Progress Energy, the treatment methodology for storm  
20 damage expense that has been chosen by the Florida Public Service Commission  
21 makes it all the more critical that the common equity ratio for PEF be no higher  
22 than the consolidated common equity ratio. To the extent that the other regulated  
23 operations owned by Progress Energy do not have the same degree of storm

1 damage protection, and the unregulated operations are more risky than the  
2 regulated operations, one could argue reasonably to apply a *lower* percentage of  
3 common equity to PEF for ratemaking purposes than is used by the consolidated  
4 operations. Certainly a decision to shift storm-related risk from the company to  
5 ratepayers constitutes yet another reason why the Commission should reject the  
6 artificially higher amount of equity being requested by PEF. It would be terribly  
7 unfair to ratepayers to make them sustain the full risk of storm damage expenses  
8 without also passing on to them the full benefit of the resulting lower cost of  
9 capital.

10

11 Q. PLEASE CONTINUE.

12 A. By providing certainty to PEF that they will be able to recover future storm  
13 damage costs, the Company can prudently use a higher level of debt than it could  
14 without such certainty. However, the Commission should recognize that the  
15 increase in the debt amount could readily appear on the consolidated books of  
16 Progress Energy and not necessarily PEF. This is especially true if Company  
17 management believes that they can carry more debt on the consolidated books  
18 without having the true benefit of the cost savings associated with the extra debt  
19 reflected in PEF ratemaking treatment. Now that the Commission has decided to  
20 fully pass on these storm damage costs, it is all the more essential that the capital  
21 structure computation be oriented towards the consolidated Progress Energy  
22 capital structure and NOT the PEF reported subsidiary capital structure.

23

1 Q. WOULD THE CAPITAL STRUCTURE YOU HAVE RECOMMENDED PUT  
2 PRESSURE ON THE BOND RATING OF PEF?

3 A. No. The capital structure I have recommended is consistent with the capital  
4 structure that has produced the current bond ratings, and is very similar to the  
5 capital structure Progress Energy proposes to implement based upon what it  
6 determined to be the debt level consistent with the mid-point of its desired bond  
7 rating target of BBB. Page 21 of the Progress Energy Annual Report to  
8 Stockholders says the following:

9 Progress Energy's ratings outlook was changed to "negative" from  
10 "stable" in 2004 by both Moody's and Standard & Poor's (S&P). Both  
11 these ratings agencies cited the uncertainty around the timing of storm  
12 cost recovery, potential delays in the Company's debt-leverage plan,  
13 uncertainty about the upcoming rate case in Florida and uncertainty  
14 about the IRS audit of the Company's synthetic fuel partnerships in  
15 their ratings actions. This change in outlook has not materially affected  
16 Progress Energy's access to liquidity or the cost of its short-term  
17 borrowings. If Standard & Poor's lowers Progress Energy's senior  
18 unsecured rating on ratings category to BB+ from its current rating it  
19 would be a noninvestment grade rating. The effect of a noninvestment  
20 grade rating would primarily be to increase borrowing costs. The  
21 Company's liquidity would essentially remain unchanged as the  
22 Company believes it could borrow under its revolving credit facilities  
23 instead of issuing commercial paper for its short-term borrowing needs.  
24 However, there would be additional funding requirements of  
25 approximately \$450 million due to ratings triggers embedded in various  
26 contracts.

27  
28 Note that the target capital structure targeted by the management of Progress  
29 Energy varies from the recommendation for PEF made by Dr. Vander Weide on  
30 page 20, where he says that PEF should target an "A" bond rating. While both  
31 the management of Progress Energy and I believe that a BBB bond rating target  
32 is sufficient, for reasons I will develop in detail below the Florida Public Service

1 Commission is not going to be able to take action that would result in an "A"  
2 bond rating from Standard & Poors for PEF unless the management of Progress  
3 Energy takes action, on a consolidated basis, to increase the common equity ratio  
4 above its current targeted "BBB" rating mid-point.

5 The cost of capital I have recommended for PEF will be sufficient for both  
6 PEF and the consolidated Progress Energy to keep thethe current bond rating so  
7 long as the other regulated and unregulated entities owned by Progress Energy  
8 also provide returns on capital consistent with the level I have recommended for  
9 PEF. (Certainly it is not the function of this Commission to anticipate poor  
10 performance by the other entities and require PEF's customers to carry their  
11 load.) My recommended cost of capital would not put pressure on the bond  
12 rating of PEF because (1) it is fully adequate for the needs of the utility, and (2)  
13 no amount of artificial subsidy from PEF to Progress Energy will substitute for  
14 the need for Progress Energy consolidated to address the concerns of the rating  
15 agencies directly: the only effect would be to overcharge customers.

16 PEF's bond rating is highly dependent on the bond rating of the consolidated  
17 Progress Energy. Providing artificially higher revenues from PEF simply to  
18 support the bond rating of Progress Energy would be both inefficient and unfair.  
19 It would be unfair because such an approach places all the burden for parent  
20 Progress Energy's situation onto PEF's Florida ratepayers, when any needed  
21 credit protection or strengthening efforts should be placed on all of the operations  
22 of Progress Energy, not just those of PEF. It would be inefficient, because  
23 merely raising rates at the PEF level without a corresponding decrease in the  
24 percentage of debt in the consolidated Progress Energy capital structure would be

1 less effective than reducing Progress Energy's percentage of debt. This is  
2 because reducing the percentage of debt at the parent level would not only  
3 improve Progress Energy's standings within the Standard & Poors defined capital  
4 structure range by bond rating, but also would improve coverage ratios and cash  
5 flow by freeing Progress Energy of the responsibility to make interest payments  
6 on a higher than optimal level of debt .

7 With the actual percentage of common equity of parent Progress Energy  
8 remaining at or below 42% common equity, no help would be provided by  
9 artificially and even *fictitiously* inflating the common equity ratio of PEF to a  
10 level over 63% for ratemaking purposes. When considering the bond rating  
11 potential of a wholly owned subsidiary such as PEF, it must be recognized that a  
12 bond rating is highly influenced by the weakest link in the chain. In this case, the  
13 chain to the bond rating is made up of two links: the consolidated Progress  
14 Energy and PEF. Just as the strength of a chain is not increased if one link is  
15 increased to a 1 inch diameter and then hooked to a link with a 1/8" diameter,  
16 adding common equity to PEF without a corresponding strengthening of the  
17 capital structure of Progress Energy would not provide the claimed help. It  
18 would merely place an extra, unfair burden -- in the form of higher revenue  
19 requirements to support the additional equity -- onto Florida ratepayers.  
20

21 VI. COST OF DEBT

22  
23 Q. PLEASE SUMMARIZE YOUR FINDINGS ON THE COST OF DEBT.

24 A. I have adopted the cost of debt proposed by the Company.

25



1 **VI. COST OF COMMON EQUITY**

2 **A. Summary of Conclusions on Cost of Equity.**

3 Q. PLEASE SUMMARIZE HOW YOU OBTAINED YOUR COST OF EQUITY  
4 RECOMMENDATION.

5 A. The cost of equity of 9.10% was based upon the results of applying the DCF  
6 method to the same groups of electric companies and gas distribution companies  
7 selected by Company cost of capital witness Dr. Vander Weide. I also relied  
8 upon the results indicated by several implementations of the Risk  
9 Premium/CAPM method.

10  
11 Q. PLEASE CONTINUE.

12 A. As I explain in detail later in this section, I determined the cost of equity to PEF  
13 by applying both a simplified or constant growth DCF method and a complex or  
14 multi-stage DCF method to the same groups of electric utilities and gas  
15 distribution utilities selected by Dr. Vander Weide, and by also considering the  
16 results of risk premium/CAPM analyses. These results are summarized on  
17 Exhibit \_\_\_\_ (JAR-2).

18 As shown on this exhibit, application of the simplified, or constant growth  
19 DCF method indicates a cost of equity between 8.45% and 8.49%. At the same  
20 time, the complex or multi-stage DCF produces a cost of equity between 9.51%  
21 and 9.56%. The risk premium/CAPM method is indicating a cost of equity of  
22 8.20% based upon a method that considers risks specific to the electric industry, a  
23 result that is confirmed by the 9.60% to 10.00% cost of equity indicated by the

1 risk premium/CAPM for a company of average risk. (Electric utilities have  
2 below average risk). When interpreting the array of cost of equity results, I am  
3 aware that the reason the multi-stage DCF is indicating a higher cost of equity  
4 than the simple DCF method is because Value Line is forecasting an increase in  
5 the retention rate. This increase in the retention rate comes about because of the  
6 relatively low forecast growth rate for dividends, especially for the gas  
7 distribution companies. Since the simplified DCF result is the one consistent  
8 with the risk premium/CAPM results, it is likely that Value Line's forecasted low  
9 dividend growth rate is inconsistent with what the market expects. Nevertheless,  
10 I gave weight to the multi-stage DCF in formulating my recommended 9.00%  
11 cost of equity for an electric company with financial risk equal to that of the  
12 group of electric distribution companies. This makes my 9.00% cost of equity  
13 conservatively high.

14 In contrast, Dr. Vander Weide recommended a cost of equity of 12.3% with a  
15 capital structure containing 63.08% common equity (financial ratio basis). The  
16 Company then increased Dr. Vander Weide's recommended 12.3% up to 12.8%.  
17 The combined effect of this high cost of equity and high percentage of common  
18 equity in the capital structure is to increase the revenue requirement associated  
19 with the Company's cost of capital to amounts substantially higher than the  
20 revenue requirement derived from my recommendations. In fact, as explained  
21 earlier in this testimony, the Company's request for cost of capital is so excessive  
22 that just correcting the cost of capital computation switches the Company's  
23 request for a rate increase into the need for a meaningful rate decrease.

1 Q. HOW DOES YOUR IMPLEMENTATION OF THE DCF MODEL VARY  
2 FROM THE IMPLEMENTATION USED BY THE COMPANY?

3 A. Unlike Dr. Vander Weide, I quantified growth by using a DCF method that  
4 computes constant growth that is sustainable over the long term, and applied the  
5 risk premium/CAPM methods without making the mistake of using the known-  
6 to-be inflated arithmetic averaging method. In addition, I recognized the data  
7 that shows overwhelmingly that risk premiums have been declining for decades.  
8 Most of the cost of equity difference is directly attributable to the errors Dr.  
9 Vander Weide made in his implementation of the risk premium/CAPM methods.  
10 I say this because he obtained a result of 9.4% when applying his version of the  
11 DCF method to the comparative electric companies he selected (See Exhibit No.  
12 \_\_\_\_ (JVV-1), Page 1)), a value that is much closer to my recommended 9.10%  
13 cost of equity than the result he determined after giving significant weight to his  
14 risk premium/CAPM results. The differences are explained in detail later in this  
15 testimony.

16

17 **B. Overview of Cost of Equity**

18 Q. WHAT IS THE COST OF EQUITY?

19 A. The cost of equity is the rate of return that must be offered to a common equity  
20 investor in order for that investor to be willing to buy the common stock. The  
21 rate of return is earned in two different ways. One part of the return is from a  
22 dividend. The other part of the return is through the change in the stock price.

1 Investors buy stock to benefit from the total return. Total return is the sum of the  
2 dividend income and the profit (or loss) obtained from the change in the stock  
3 price.

4 While dividends are the norm in the utility industry, many companies do not  
5 pay a dividend. For those companies that do not pay a dividend, investors are  
6 willing to buy the stock if investors expect that the potential for capital  
7 appreciation offsets the lack of any dividend income. Common equity investors  
8 can, at best, only estimate what the stock price will be in the future. Also,  
9 investors are not certain what future dividends will be. Therefore, common  
10 equity investment always entails risk, but the risk can vary greatly from company  
11 to company.

12 The return an investor cares about is best measured as the return on market  
13 price. An investor who buys a common stock at \$10.00 per share and sells it a  
14 year later for \$10.90 will have received a 9% return (plus dividends, if any),  
15 irrespective of whether or not the company earned any money, and irrespective of  
16 the return on book value. However, utility commissions have the responsibility  
17 of balancing the interests of investors and ratepayers. Therefore, if it can be  
18 determined that investors are willing to buy stock with the **expectation** of being  
19 able to earn an annual return of 9%, then a commission should set rates so that  
20 the return on used and useful rate base is at the level where the future return on  
21 book value is expected to be 9%. Consequently:

- 22 a) if the market price should happen to be below book value, this  
23 would not be justification for providing a lower return than the cost  
24 of equity demanded by investors.

1  
2           b)    if the market price should happen to be above book value, this  
3                would not be justification for providing a higher return than the  
4                cost of equity demanded by investors.  
5  
6

7           As the U. S. Supreme Court found in its 1948 decision in Federal Power  
8           Commission v. Hope Natural Gas, 320 U.S. 591, at page 602, the stock price is  
9           "... the end product of the process of rate-making not the starting point..." and  
10          that "... the fact that the value is reduced does not mean that the regulation is  
11          invalid." Therefore, in rate cases it is important to set rates based on a return on  
12          book value. Among the many problems with the market value capital structure  
13          approach discussed by Dr. Vander Weide is that it contradicts this important  
14          principle from the Hope Natural Gas case.  
15

16   Q. HOW MANY BASIC METHODS ARE USED TO CALCULATE THE COST  
17       OF EQUITY?

18   A. There are two basic methods commonly used to determine the cost of equity: the  
19       Discounted Cash Flow ("DCF") method and the risk premium/Capital Asset  
20       Pricing Model ("CAPM") method.  
21

22   Q. PLEASE EXPLAIN BRIEFLY HOW THE DCF METHOD WORKS?

23   A. The DCF method starts with the current dividend yield, and adds to that dividend  
24       yield an estimate of growth to arrive at the estimated cost of capital. This growth  
25       is really the estimate of the future stock price appreciation that investors are  
26       predicting might occur until the stock is sold. Dividend growth, book value

1 growth, and earnings growth, to the extent they may be used, are only relevant to  
2 the degree they can help estimate the future stock price.

3

4 Q. PLEASE EXPLAIN WHY THE DCF METHOD IS USED.

5 A. Perhaps a major part of the reason that the DCF method has been so commonly  
6 used over the years is because, more than any other method, if properly applied, it  
7 can directly examine those factors that provide the incentive for investors to buy  
8 common stock in the first place.

9 Q. PLEASE EXPLAIN HOW THE RISK PREMIUM/CAPM METHOD WORKS.

10 A. The risk premium method in a generic sense includes the CAPM method, and it  
11 is also commonly used by witnesses in rate proceedings. The risk  
12 premium/CAPM method is really measuring the very same thing as the DCF  
13 method --- the total return expected by a common stock investor. However,  
14 rather than determining this total return by directly estimating future dividends  
15 and capital appreciation, the risk premium/CAPM method is looking either to  
16 interest rates or the inflation rate to help estimate what total return common stock  
17 investors require.

18 **C. DCF Method**

19

20 Q. IS THE DCF METHOD WIDELY USED IN UTILITY RATE  
21 PROCEEDINGS?

1 A. Yes. The DCF model is more widely used than any other approach to  
2 determining the cost of equity.

3

4 Q. IS THERE A CONSISTENT MANNER COMMONLY USED TO  
5 IMPLEMENT THE DCF METHOD?

6 A. No. However, most implementations of the DCF model in utility rate  
7 proceedings do not start from the basic form of the model that separately  
8 discounts each future expected cash flow. Instead, utility rate proceedings  
9 typically focus on a special, simplified, version of the DCF model where the  
10 cost of equity,  $k$ , equals dividend yield ( $D$ ) plus growth ( $g$ ) in the formula  
11  $k = D/P + g$ .

12 Most analysts acknowledge that when using this simplified, constant  
13 growth or  $D/P + g$  form of the DCF model, the growth rate " $g$ " must be  
14 representative of the constant future growth rate anticipated by investors for  
15 dividends, earnings, book value, and stock price. However, all too often those  
16 who implement this constant growth form of the DCF model forget this  
17 important principle. Some merely try to make the issue go away by incorrectly  
18 stating that the  $D/P + g$  formula requires the "assumption" of constant growth.  
19 When so stating, they are missing the proper mathematical use of the word  
20 "assumption". Actually, the "assumption" of constant growth is a  
21 mathematical step that is made when this simplified  $D/P + g$  form of the DCF  
22 model is derived from the basic form of the model. However, what this means  
23 mathematically is that the  $D/P + g$  form should not be used UNLESS the value

1 of "g" is consistent with the mathematical characteristics that had to be met in  
2 order to derive this special form of the DCF model in the first place. Failure to  
3 recognize that the selected value of "g" must be in keeping with the  
4 mathematical derivation of the  $D/P + g$  form of the DCF model often causes  
5 substantial, unnecessary error when implementing the DCF model in utility rate  
6 proceedings. For example, a user of the  $D/P + g$  form of the DCF model that  
7 relies on only earnings growth, in the face of evidence that dividends or book  
8 value is expected to grow at a different rate than earnings, is probably using the  
9 DCF model incorrectly.

10  
11 Q. WHY IS IT SO IMPORTANT FOR THE GROWTH RATE USED IN THE  
12 CONSTANT GROWTH VERSION OF THE DCF MODEL TO BE  
13 REPRESENTATIVE OF THE CONSTANT GROWTH RATE FOR  
14 DIVIDENDS, EARNINGS, BOOK VALUE AND STOCK PRICE?

15 A. The derivation of the constant growth formula is based upon the principle that  
16 investors buy stock solely for the right to future cash flows obtained as a result of  
17 that ownership. The cash flows are obtained through dividend payments and/or  
18 stock price appreciation. The constant growth version of the DCF formula will  
19 accurately quantify investors' expectations only if investors expect the dividend  
20 yield (defined as dividend payment divided by stock price, or  $D/P$  in the constant  
21 growth DCF formula) and the growth in dividends to best be estimated at one  
22 constant growth rate for many years into the future. The dividend yield and  
23 growth rate that are used in the constant growth formula cannot be casually taken



1 from any source that happens to publish a growth rate, even if the source is highly  
2 reliable. This is because the highly reliable source could very well be publishing  
3 a growth rate that is different from the very special kind of growth that is  
4 appropriate for the constant-growth DCF formula.

5 Consider what happens if the expected growth rates are not all equal:

6 1. DIFFERENT GROWTH RATE FOR EARNINGS AND FOR DIVIDENDS.

7 Both dividends and the ability for a company to grow dividends in the future  
8 are directly derived from earnings. The dividend yield, or D/P, portion of the  
9 constant growth DCF formula quantifies the investor-derived value from the  
10 portion of earnings paid out as a dividend. The “g” portion of the constant  
11 growth DCF formula quantifies the value of the portion of earnings retained  
12 in the business.

13 If dividends are quantified using the current dividend rate, but an  
14 earnings forecast is used to quantify “g” that is based upon a future  
15 environment in which earnings are expected to grow more rapidly than  
16 dividends, an ever-increasing portion of the total return expected by investors  
17 will be attributable to growth, and a smaller portion will be attributable to  
18 dividends. Under these conditions, other things being equal, the constant  
19 growth version of the DCF model would overstate the cost of equity because  
20 the decrease in the payout ratio that results from a more rapid earnings growth  
21 rate than dividend growth rate would shift a greater portion of the earnings  
22 from dividends to earnings growth.

23 The result of is that the higher future earnings growth rate would

1 cause the portion of earnings available for dividends to be lower, and  
2 therefore the dividend yield would be lower. Conversely, if future earnings  
3 growth were expected to be less than dividend growth, the constant growth  
4 form of the DCF model would understate the cost of equity.

5 Every time a dividend payment is scheduled, the board of directors of  
6 a company decides what portion of earnings to pay out as a dividend and  
7 what portion of earnings to re-invest, or "retain" in the business. It is this re-  
8 investment of earnings that causes sustainable growth. Both dividends and  
9 growth therefore compete for the same dollars of earnings. The higher the  
10 portion of earnings allocated to the payment of dividends, the smaller the  
11 amount of earnings left over for re-investment and therefore the lower the  
12 future growth rate.

13 The relationship between the portion of earnings paid out as a  
14 dividend and the portion re-invested in the business is commonly referred to  
15 as either the dividend "payout" ratio (which is computed by dividing  
16 dividends by earnings), or the "retention rate" (which is computed by  
17 dividing the portion of earnings re-invested in the business by earnings). The  
18 sum of the payout ratio and the retention rate is 1.0, because 100% of  
19 earnings is either paid out as a dividend or retained in the business.

20 The constant growth version of the DCF formula uses a specific  
21 dividend rate to compute the "D/P" term of its formula. This specific  
22 dividend rate has a specific earnings "retention rate" associated with it. This  
23 specific "retention rate" provides for one and only one percentage of earnings

1 that remains to cause the growth that is quantified in the second term of the  
2 equation. This is because the portion of earnings paid out as a dividend and  
3 the portion not paid out as a dividend must remain equal to total earnings.

4 If the dividend "payout ratio" or the earnings "retention" ratio are not  
5 constant, the portion of earnings available for growth and the portion  
6 available for dividends will continue to shift over time. Under such  
7 conditions, the constant growth formula produces an erroneous result because  
8 it is incapable of properly accounting for this change.

- 9
- 10 2. EARNINGS PER SHARE GROWTH RATE DIFFERENT FROM STOCK  
11 PRICE GROWTH RATE. When earnings per share growth rates are measured  
12 over a relatively short time period, such as the five-year consensus growth rates  
13 compiled by financial services such as Zacks and I/B/E/S, it is likely that  
14 investors expect materially different growth rates in earnings per share and stock  
15 price. This is because the earnings per share growth rate as reported in such  
16 services is simply the compound annual growth rate in the earnings per share  
17 from the most recently completed fiscal year compared to the earnings per share  
18 forecast for five years into the future. Presumably, an earnings per share forecast  
19 for five years into the future is sufficiently far off that analysts' forecasts for that  
20 time period must be based upon an expectation of normal conditions. Five years  
21 into the future is too far off to forecast abnormal economic conditions, abnormal  
22 weather conditions, or any abnormal operating problems that could impact  
23 earnings. However, the base year from which earnings are forecast is likely to

1 contain some abnormalities that have an impact on earnings. To the extent this  
2 abnormality exists, the forecast of earnings per share growth from the base year  
3 to a period five years in the future will be equal to the sustainable growth rate  
4 plus or minus the impact of any abnormalities. Growth that is required to bring  
5 earnings up to or down to normally expected conditions is not sustainable  
6 growth, and therefore it is not the kind of growth that would be mirrored in the  
7 stock price growth rate.

### 8 9 3. DIFFERENT GROWTH RATES FOR EARNINGS AND FOR BOOK VALUE.

10 The return on book equity is computed by dividing earnings by book value. This  
11 is an important number for several reasons: a) for a regulated utility company, the  
12 allowed cost of equity is the return on book equity that a utility commission  
13 intends for a company to earn on the regulated portion of its business, and b)  
14 unregulated companies attempt to earn the highest risk adjusted returns on equity  
15 that are possible.

16 If earnings per share grow more rapidly than book value per share, the  
17 return on equity increases. Conversely, if earnings per share grow more slowly  
18 than book value per share, the return on equity decreases. While increases and/or  
19 decreases in the earned return on equity can and do occur, it is not credible to  
20 forecast a sustained change in the return on equity for the many years into the  
21 future that are required in the constant-growth DCF model.

22 For example, a forecasted continuation of a decrease in the earned return on  
23 equity would eventually drive the earned return on equity to near zero – a

1 condition that is not credible for a regulated business providing a needed service.  
2 Similarly, a forecasted continuation of an increase in the earned return on equity  
3 would eventually drive the earned return on equity to an extremely high number –  
4 a condition that would not form the basis for a credible growth rate forecast for a  
5 regulated business because of the regulatory constraints on the authorized return.

6 Also, an earnings per share growth rate higher than the book value per share  
7 growth rate is not credible for a competitive business because, as returns would  
8 go higher and higher, more and more competitors would be attracted. If a growth  
9 rate based upon an earning per share forecast higher than the forecast book value  
10 per share growth rate were used in a constant-growth form of the DCF model,  
11 then the constant-growth version of the DCF model would contain an upward  
12 bias. Conversely, if an earnings per share forecast is lower than the book value  
13 per share growth rate, then the constant-growth form of the DCF model would  
14 contain a downward bias.

15  
16 Q. ARE FIVE-YEAR EARNINGS PER SHARE FORECASTS OF THE TYPE  
17 AVAILABLE FROM SOURCES SUCH AS ZACKS, I/B/E/S, OR VALUE  
18 LINE SUITABLE AS A PROXY FOR LONG-TERM SUSTAINABLE  
19 GROWTH IN THE CONSTANT-GROWTH FORM OF THE DCF MODEL?

20 A. No. For the reasons I just explained, it is improper to directly use a five-year  
21 earnings per share forecast as a proxy for long-term sustainable growth in the  
22 constant-growth DCF model. Zacks, I/B/E/S, Value Line and similar firms make  
23 no attempt to make earnings per share forecasts to be representative of the

1 anticipated growth rate in dividends per share, book value per share, or stock  
2 price. Therefore, while these sources can provide useful in formulating a  
3 sustainable growth rate in the context of a constant-growth DCF model, if their  
4 estimates are used directly as a proxy for long-term growth, they are no more  
5 accurate than it would be to forecast the height of a human at age 60 based upon  
6 a reasonable forecast of annual growth for the five years starting at age 12.

7 Earnings per share forecasts are generally different from the anticipated  
8 growth in dividends, book value, and stock price because they include the often  
9 substantial impact of bringing earnings up or down to a normal earned return on  
10 equity from whatever return on equity was achieved in the most recently  
11 completed fiscal year. Additionally, such analysts' growth rates tend to be  
12 overstated because of the well-documented propensity for analysts to be  
13 optimistic (While there are many sources that have shown this optimism to exist,  
14 one noteworthy source is a statement by Arthur Levitt, former chairman of the  
15 U.S. Securities and Exchange Commission. The following appeared on page 4 of  
16 the 5/31/99 issue of Barrons:

17 ARTHUR LEVITT MAY BE THE best chairman of the SEC since  
18 Joe Kennedy. And no accident, really: Like Kennedy, Levitt spent  
19 enough time in the Street to develop a fine nose for good stocks and  
20 bad people.

21 Back in April, Levitt delivered some cogent remarks on  
22 analysts (in the sacred order of being, they're somewhat lower than  
23 angels) and their innate bullishness (solely the product of their sunny  
24 natures).

25 As he observed, sell recommendations make up 1.4% of all  
26 analysts' recommendations, while buys represent 68%.

27 By way of explanation for this strange imbalance, he offers the  
28 possibility of a "direct correlation between the content of an analyst's

1 recommendation and the amount of business his firm does with the  
2 issuer.”

3 Analysts, he grouses are too eager to see every frog of a stock  
4 as a prince. What the world needs, he laments, are analysts who call a  
5 frog a frog. )

6 The combined effect of the habitual optimism of analysts and the required  
7 movement over a relatively short five-year time period to bring earnings per share  
8 up to the optimistic levels, commonly causes the five-year growth rates that are  
9 estimated by analysts to commonly overstate the future sustainable growth rate.

10  
11 Q. HOW IS IT POSSIBLE TO ENSURE THAT THE GROWTH RATE USED IN  
12 THE CONSTANT-GROWTH VERSION OF THE DCF MODEL WILL  
13 RESULT IN AN APPROPRIATE CONSTANT GROWTH RATE INDICATOR  
14 FOR DIVIDENDS, EARNINGS, BOOK VALUE, AND STOCK PRICE?

15 A. The most straight-forward and accurate way to determine the appropriate growth  
16 rate is to use the “ $b \times r + sv$ ” formula, where  $b$ = the earnings retention rate,  $r$ =the  
17 future expected return on book equity, and  $sv$  is a factor that accounts for  
18 sustainable growth caused by the sale of new shares of common stock. The  
19 mathematics used to derive the  $D/P + g$  form of the DCF model show that the “ $b$   
20  $\times r + sv$ ” formula properly quantifies sustainable growth. However, common  
21 mistakes in applying this formula include using historic values of “ $r$ ” rather than  
22 future expected values, and failing to use a retention rate value, “ $b$ ” that is  
23 consistent with the other values input into the DCF model.

1 Q. WHY MUST THE RETENTION RATE, "b" BE CONSISTENT WITH THE  
2 OTHER VALUES INPUT INTO THE DCF MODEL?

3 A. By definition, the retention rate, "b", is the portion of earnings that is NOT paid  
4 out as a dividend. Because future earnings will be equal to the return on book  
5 equity times book value, the future anticipated value of the return on book equity  
6 "r" defines the future expected earnings rate.

7 The portion of earnings NOT paid out as a dividend is directly related to the  
8 future expected earnings rate and the future dividend rate. When the dividend  
9 rate is input into the  $D/P + g$  form of the DCF model, the portion of earnings that  
10 has been allocated to dividends has already been defined. Therefore, in order to  
11 avoid either the double-counting of earnings or the under-counting of earnings,  
12 the same definition of the dividend rate that has been used for the value of "D" in  
13 the D/P portion of the DCF equation MUST be used to determine the value of the  
14 retention ratio, "b", when computing sustainable growth.

15

16 Q. HOW CAN YOU ASSURE CONSISTENCY BETWEEN THE DIVIDEND  
17 RATE USED TO COMPUTE DIVIDEND YIELD AND THE DIVIDEND  
18 RATE USED TO COMPUTE THE RETENTION RATIO?

19 A. The way to ensure the consistency necessary for a valid result from the  
20 implementation of the constant-growth form of the DCF model is to compute the  
21 retention rate "b" based upon the inputs used for the dividend rate "D" and the  
22 future expected return on equity, "r". As previously stated, by definition, the  
23 retention rate "b" is equal to the portion of earnings not paid out as a dividend



1 divided by earnings. The earnings consistent with the value used for "D" is  
2 determined by multiplying book value by the value of the future expected return  
3 on equity, "r". The book value that should be used is the book value as of the  
4 time of the valuation of "D". The result is the future expected rate of earnings  
5 that is consistent with the value used for both "D" and for "r". By subtracting  
6 "D" from the future expected earnings and dividing that amount by the same  
7 future expected earnings results in a retention rate that contains the necessary  
8 consistency. If any other value for "b" is used, such as a forecasted value for "b"  
9 in some future time period, then the result from the constant-growth DCF  
10 computation would be invalid.

11

12 Q. DO STOCK ANALYSTS USE THE "b x r" METHOD?

13 A. Yes. In the textbook, Investments, by Bodie, Kane and Marcus (Irwin, 1989) at  
14 page 478, expected growth rate of dividends is described as follows:

15

16 How do stock analysts derive forecasts of  $g$ , the expected  
17 growth rate of dividends? Usually, they first assume a constant  
18 dividend payout ratio (that is, ratio of dividends to earnings), which  
19 implies that dividends will grow at the same rate as earnings. Then  
20 they try to relate the expected growth rate of earnings to the  
21 expected profitability of the firm's *future* investment opportunities.

22

The exact relationship is

23

24

$$g = b \times \text{ROE}$$

25

26

27

28

29

30

31

where  $b$  is the proportion of the firm's earnings that is  
reinvested in the business, called the plowback ratio or the earnings  
retention ratio, and ROE is the rate of return (return on equity) on  
new investments. If all of the variables are specified correctly,  
[the] equation . . . is true by definition, . . .

1

2 Q. DO SOME COST OF CAPITAL WITNESSES CRITICIZE THE "b x r"  
3 METHOD AS BEING CIRCULAR?

4 A. Yes. Some cost of capital witnesses claim that the "b x r" method is circular  
5 because the future earned return on book equity that is used to quantify growth is  
6 used to determine the future earned return equity.

7

8 Q. IS THAT CRITICISM VALID?

9 A. No. Those who claim that the method is circular confuse the definition of "r" and  
10 the definition of "k". While "r" is defined as the future return on **book** equity  
11 anticipated by investors, "k" is the cost of equity, or the return investors expect  
12 on the **market price** investment. Since the market price is determined based  
13 upon what investors are willing to pay for a stock, and the book value is based  
14 upon the net stockholders' investment in the company, "r" usually has a different  
15 value than "k". In fact, the proper application of the DCF method relates a  
16 specific stock market price to a specific expectation of future cash flows that is  
17 created by future earned return ("r") levels.

18 For example, assume investors are willing to pay \$10 a share for a company  
19 when the expectations are that the company will be able to earn 12% on its book  
20 equity in the future. If events would cause investors to re-evaluate the 12%  
21 return expectation, the stock price should be expected to change. If investors'  
22 expectations of the future return on book equity change from 12% to 10%, and  
23 there is no corresponding change in the cost of equity, the stock price would

1 decline. The cost of equity, however, would not decline simply because an event  
2 might occur that would cause investors to lower their estimate for "r". The cost  
3 of equity is equal to the sum of both the dividend yield and growth. Investors'  
4 estimate of "r" influences the investors' estimate for growth. Changes in growth  
5 expectations cause investors to change the price they are willing to pay for stock.  
6 A change in the stock price can cause a change in the dividend yield that offsets  
7 the change in expected growth. In this way, a higher dividend yield would offset  
8 by the lower expected growth rate and leave the cost of equity, "k", unchanged.

9  
10 Q. HOW DID YOU IMPLEMENT THE DCF METHOD IN THIS CASE?

11 A. Consistent with the principles described above, I started by quantifying the D/P,  
12 or dividend yield term. Then I computed the growth rate, "g". I derived the  
13 growth rates from the internal, or retention growth rate, or " $b \times r$ " + "sv" method  
14 where "b" represents the future expected retention rate and "r" represents the  
15 future expected earned return on book equity. The "sv" term quantifies the  
16 growth that is caused by the sale of new common stock in excess of book value.

17  
18  
19 Q. HOW DID YOU DETERMINE THE DIVIDEND YIELD OR THE "D/P"  
20 PORTION OF THE CONSTANT-GROWTH DCF EQUATION?

21 A. I determined the dividend yield as follows:

22 a) I took the current quarterly dividend rate for each company  
23 examined and multiplied it by 4 to arrive at the current annual dividend rate.

1           b) The current quarterly dividend rate was then converted to a  
2 dividend yield by dividing it by the stock price of each company. The stock  
3 price used was determined two different ways. One way was to take the  
4 actual stock price as of the end of the period I examined. The second way  
5 was to take the average of the high and low stock price over the prior year.

6           c) The resulting dividend yield was increased by adding one-half the  
7 future expected growth rate. This upward adjustment to the dividend yield is  
8 necessary because the DCF formula specifies that the dividend yield to be  
9 used is equal to the dividends expected to be paid over the next year divided  
10 by the market price. After this adjustment to increase the dividend yield, the  
11 yield is equal to an estimate of dividends over the next year. To each  
12 dividend yield result, I added one-half the future expected growth rate. After  
13 the adjustment, the yield is equal to an estimate of dividends over the next  
14 year. (The complex version does not directly use dividend yields. Instead, it  
15 determines the present value of each dividend payment as a discounted cash  
16 flow.)

17  
18 Q. HOW DID YOU OBTAIN THE GROWTH RATES YOU USED IN THE DCF  
19 METHOD?

20 A. I quantified growth by using " $b \times r$ " + sv.

21  
22  
23 a) determination of value for "r"

1  
2 Q. HOW DID YOU DETERMINE THE VALUE OF "r" THAT YOU USED IN  
3 THE "b x r" PORTION OF THE GROWTH RATE DETERMINATION?

4 A. My estimate for "r" is based upon a review of the actual historic actual return on  
5 book equity and future expected returns on book equity for each company. I used  
6 Value Line and the future expected return on book equity that was derived from  
7 other analysts' earnings forecasts. The results of these inputs are summarized in  
8 Footnote (A) on Schedule 5 Pages 1 and 2. I also considered what are likely to  
9 be future allowed returns on equity. Based upon this input, I concluded that  
10 investors expect the future sustainable return on book equity, "r" to be 11.00%  
11 for the electric company group, and 12.00% for the gas distribution group.  
12

13 b) Determination of Retention Rate, "b"  
14

15 Q. HOW DID YOU DETERMINED THE VALUE OF THE FUTURE EXPECTED  
16 RETENTION RATE "b" THAT YOU USED IN YOUR SIMPLIFIED DCF  
17 ANALYSIS?

18 A. As previously explained, I recognized that the retention rate, "b", is merely the  
19 residual of the dividend rate, "D", and the future expected return on book equity,  
20 "r." Since, by definition, "b" is the fraction of earnings not paid out as a dividend,  
21 the only correct value to use for "b" is the one that is consistent with the  
22 quantification of the other variables when implementing the DCF method. The  
23 formula to determine "b" is:

1

2

$b = 1 - (D/E)$ , where

3

$b$  = retention rate

4

$D$  = Dividend rate

5

$E$  = Earnings rate

6

7

8

9

10

11

12

13

14

15 Q. WHAT RETENTION RATES DID YOU USE IN THE SINGLE-STAGE DCF  
16 METHOD?

17 A. Based upon the above formula ( $b = 1 - D/E$ ), I computed a retention rate of, 33.57%  
18 to 36.07% for the electric company group, and 31.74% to 32.55% for the gas  
19 distribution group.

20

21 Q. PLEASE SUMMARIZE YOUR DCF RESULTS.

1 A. As I stated earlier in my testimony, I reviewed the results of my analyses as  
2 summarized on Exhibit \_ (JAR-2). As shown on this schedule, the DCF-derived  
3 cost of equity varied between 8.25% and 9.85%, depending upon which group of  
4 companies or which time period is being used.

5

6 **D. Risk Premium/CAPM Method**

7

8 Q. PLEASE EXPLAIN THE RISK PREMIUM/CAPM METHOD.

9 A. The risk premium/CAPM method estimates the cost of equity by analyzing the  
10 historic difference between the cost of equity and a related factor such as the rate  
11 of inflation or the cost of debt.

12 One critically important fact to understand when implementing the risk  
13 premium method is that risk premiums have declined in recent years. Federal  
14 Reserve Chairman Alan Greenspan made a speech on October 14, 1999 entitled  
15 "Measuring Financial Risk in the Twenty-first Century". The text of the speech  
16 is available at  
17 <http://www.bog.frb.fed.us/boarddocs/speeches/1999/19991014.htm>. In the  
18 speech, Chairman Greenspan says:

19  
20 That equity risk premiums have generally declined during the  
21 past decade is not in dispute. What is at issue is how much of  
22 the decline reflects new, irreversible technologies, and what  
23 part is a consequence of a prolonged business expansion  
24 without a significant period of adjustment. The business  
25 expansion is, of course, reversible, whereas technological  
26 advancements presumably are not.

1

2 Q. IS CHAIRMAN GREENSPAN'S VIEW OF THE REDUCTION IN RISK  
3 PREMIUMS CONSISTENT WITH WHAT INVESTORS NOW  
4 GENERALLY EXPECT?

5 A. Yes. One good source to confirm that the financial community shares  
6 Chairman Greenspan's conclusion is an article that appeared in the April 5,  
7 1999 issue of *Business Week*:

8

9 The risk premium is the difference between the risk-free  
10 interest rate, usually the return on U.S. Treasury bills, and the  
11 return on a diversified stock portfolio. Over more than 70  
12 years, the return to stocks averaged 11.2%, and T-bills, just  
13 3.8%. The difference between the two returns, 7.4%, is the risk  
14 premium. Economists explain this extra return as an investors'  
15 reward for taking on the greater risk of owning stocks. **Most**  
16 **market watchers believe that in recent years, the premium**  
17 **has fallen to somewhere between 3% and 4% because of**  
18 **lower inflation and a long business upswing that makes**  
19 **corporate earnings less variable.**

20 [emphasis added]

21

22 On October 4, 2001, a report from Credit Suisse First Boston concluded that  
23 the equity risk premium over treasury bonds is 3.7%, and the equity risk premium  
24 over Baa rated corporate bonds is now 1.9%. (1 Weekly Insights, "Global Strategy  
25 Perspectives", October 4, 2001, Credit Suisse First Boston, pages 55 and 61.

26 Page 189 of the "Stocks, Bonds, Bills, and Inflation 2004 Yearbook" by  
27 Ibbotson Associates states, in a section entitled "Long-term Market Predictions" that:

28 Ibbotson and Chen believe that stocks will continue to provide  
29 significant returns of the long run, averaging around 9.22  
30 percent per year, assuming historical inflation rates. The  
31 geometric equity risk premium, based on the supply side  
32 earnings model, is calculated to be 3.84%.

33



1       The 3.84% forward-looking risk premium concluded by Ibbotson and Chen  
2 appears in the very same book that shows a geometric risk premium of 5.0% (Page  
3 33 of Stocks, Bonds, Bills and Inflation, 2004 Yearbook, 10.4% geometric mean  
4 return on Large Company Stocks minus 5.4% geometric mean returns on Long-term  
5 Government Bonds) based upon purely historical data that has not yet factored any  
6 consideration of the downtrend in risk premiums.

7       A review of the discussion on page 108 of the same 2004 edition of Stocks,  
8 Bonds, Bills, and Inflation shows why the equity-to-debt risk premium has been  
9 declining. The description of the data and the data both show that between 1925 and  
10 2003, the volatility of common stocks has been declining and the volatility of long-  
11 term government bonds has been increasing.

12       Risk is proportional to expected volatility. Therefore, the convergence in the  
13 volatility of common stock prices and government bond prices brings the relative risk  
14 closer together now than it was back in the earlier part of the Ibbotson Associates  
15 1926-2003 data series.

16

17       **1.       Inflation Risk Premium Method.**

18

19       Q. HOW HAVE YOU APPLIED THE INFLATION RISK PREMIUM METHOD?

20       A. I implemented the inflation premium method by adding investors' current  
21 expectation for inflation to the long-term rate earned by common stocks net of  
22 inflation.

23

24       Q. WHAT IS THE BASIS FOR THE INFLATION PREMIUM METHOD?

1 A. The basis has been explained in a book entitled *Stocks for the Long Run*  
2 (McGraw Hill 2002) Dr. Jeremy Siegel, a professor at the Wharton School.  
3 Professor Siegel examined the real returns achieved by common stocks from  
4 1802 through 2001. He concluded that equity returns in excess of the inflation  
5 rate have been very similar in all major sub-periods between 1802 and 2001,  
6 while the risk premium in between bonds and common stocks has been erratic.

7 At page 11 he states:

8 Despite extraordinary changes in the economic, social, and  
9 political environment over the past two centuries, stocks  
10 have yielded between 6.6 and 7.2 percent per year after  
11 inflation in all major subperiods.

12 At page 12 he states:

13  
14 Note the extraordinary stability of the real return on stocks  
15 over all major subperiods: 7.0 percent per year from 1802-  
16 1870, 6.6 percent from 1871 through 1925, and 6.9 percent  
17 per year since 1926. Ever since World War II, during  
18 which all the inflation in the U.S. has experienced over the  
19 past two hundred years has occurred, the average real rate  
20 of return on stocks has been 7.1 percent per year. This is  
21 virtually identical to the previous 125 years, which saw no  
22 overall inflation. This remarkable stability of long-term  
23 real returns is a characteristic of *mean reversion*, a property  
24 of a variable to offset its short-term fluctuations so as to  
25 produce far more stable long-term returns.

26 Continuing on page 14, he states:

27  
28 As stable as the long-term real returns have been for  
29 equities, the same cannot be said of fixed-income assets.  
30 Table 1-2 reports the nominal and real returns on both  
31 short-term and long-term bonds over the same time periods  
32 as in Table 1-1. The real returns on bills has dropped  
33 precipitously from 5.1 percent in the early part of the  
34 nineteenth century to a bare 0.7 percent since 1926, a return  
35 only slightly above inflation. The real return on long-term  
36 bonds has shown a similar pattern. Bond returns fell from

1 a generous 4.8 percent in the first sub period to 3.7 percent  
2 in the second, and then to only 2.2 percent in the third.

3  
4 And, at pages 15-16 he explains some of the reasons why bond returns  
5 have been especially unstable:

6 Although the returns on equities have fully  
7 compensated stock investors for the increased inflation  
8 since World War II, the returns on fixed-income securities  
9 have not. The change in the monetary policy standard from  
10 gold to paper had its greatest effect on the returns of fixed-  
11 income assets. It is clear that the buyers of long-term  
12 bonds in the 1940s, 1950s, and early 1960s did not  
13 recognize the inflationary consequences of the change in  
14 monetary regime. How else can you explain why investors  
15 voluntarily purchased 30-year bonds with 3 and 4 percent  
16 coupons, ignoring a government policy that was  
17 determined to avoid devaluation and in fact favored  
18 inflation?

19 ...

20 Another explanation for the fall in bond returns is  
21 investors' reaction to the financial turmoil of the Great  
22 Depression. The stock collapse of the early 1930's caused  
23 a whole generation of investors to shun equities and invest  
24 in government bonds and newly-insured bank deposits,  
25 driving their return downward. Finally, many investors  
26 bought bonds because of the widespread (but incorrect)  
27 prediction that another depression would follow the war.

28  
29  
30 Professor Siegel then provides a conclusion on page 16 that:

31  
32 Whatever the reason for the decline in the return on  
33 fixed-income assets over the past century, it is almost  
34 certain that the real returns on bonds will be higher in the  
35 future than they have been over the last 70 years. As a  
36 result of the inflation shock of the 1970's, bondholders  
37 have incorporated a significant inflation premium in the  
38 coupon on long-term bonds.

39  
40 Q. IS IT POSSIBLE TO ACCURATELY QUANTIFY INVESTORS' CURRENT  
41 EXPECTATIONS FOR INFLATION?

1 A. Yes. It has recently become possible to analytically determine investor's  
2 expectations for inflation. The U.S. government has issued inflation-indexed  
3 treasury bonds. The total return received by investors in these bonds is a fixed  
4 interest rate plus an increment to the principal based upon the actual rate of  
5 inflation that occurs over the life of the bond. These bonds pay a lower interest  
6 rate simply because investors know that in addition to the interest payments, they  
7 will receive the allowance for inflation as part of the increment to the principal.  
8 This is in contrast to conventional U.S. treasury bonds. The principal amount of  
9 a conventional bond does not change over the life of the bond. Therefore,  
10 whatever allowance for inflation investors believe they need can only be obtained  
11 through the interest payment. By comparing the interest rate on conventional  
12 U.S. treasury bonds with the interest rate on inflation-indexed U.S. treasury  
13 bonds, the future inflation rate anticipated by investors can be quantified.

14  
15 Q. WHAT IS THE CURRENT INFLATION EXPECTATION OF INVESTORS?

16 A. As of May, 2005, the inflation expectation of investors was estimated to be  
17 about 3.0%. See Schedule JAR-9. This was obtained by observing that long-  
18 term inflation-indexed treasury securities were yielding 1.81%, while long-  
19 term non inflation-indexed treasury securities were yielding 4.55%. The  
20 difference between 4.55% and 1.18% is 2.74%.

21 Adding the current 3.0% inflation expectation to the 6.6% to 7.0% range  
22 produces an inflation risk premium indicated cost of equity of 9.60% to 10.00%  
23 for an equity investment of average risk. Since the risk of Progress Energy and  
24 the group of comparative electric utilities is below average, this result is  
25 consistent with my recommended cost of equity of 9.10%.

26  
27 **2. Debt Risk Premium Method**

1  
2 Q. HOW DID YOU DETERMINE THE COST OF EQUITY USING THE DEBT  
3 RISK PREMIUM METHOD?

4 A. As shown on Schedule 10, pages 1 and 2, I separately determined the proper risk  
5 premium applicable to long-term treasury bonds, long-term corporate bonds,  
6 intermediate-term treasury bonds and short-term treasury bills. Using a wide  
7 array of data points across the yield curve provides the results that are less  
8 impacted by a temporary imbalance that may exist in the debt maturity "yield  
9 curve".

10

11 Q. EARLIER IN THIS SECTION OF YOUR TESTIMONY, YOU SHOWED  
12 THAT FEDERAL RESERVE CHAIRMAN GREENSPAN NOTED THAT THE  
13 DECLINE IN EQUITY RISK PREMIUMS "... IS NOT IN DISPUTE." YOU  
14 ALSO PROVIDED SOURCES FROM FINANCIAL LITERATURE  
15 CONCLUDING THAT THE RISK PREMIUM IS NOW LESS THAN 4%. DO  
16 YOU HAVE ANALYTICAL SUPPORT TO SHOW THAT THE  
17 STATEMENTS FROM THE SOURCES YOU HAVE QUOTED ARE  
18 CORRECT?

19 A. Yes. I examined the historic actual earned returns on common stocks and bonds  
20 from 1926 through 2004. But, rather than merely making one simplistic  
21 computation that examined the entire time period with only one return number  
22 over the entire period, I examined a 30-year moving average of the earned  
23 returns. 30 years is long enough to see if indeed there is a trend to the earned

1 returns, but not so short as to be overly influenced by the natural volatility in  
2 earned returns that generally occurs over just a year or a few years. As shown in  
3 attached graphs, Exhibit \_\_ (JAR- ), the decline in the risk premiums is  
4 persistent and undeniable.

5 These graphs confirm that a risk premium over 30 year treasuries in the 3 to 4%  
6 range is appropriate. For my equity cost computations, I used the conservatively  
7 high estimate of 4.0% as the risk premium appropriate to add to U.S. treasuries  
8 when determining the cost of equity for an industrial company of average risk.  
9 For applying the appropriate risk premium to interest rates other than U.S.  
10 treasuries, I determined the average historic risk spread between long-term  
11 treasuries and the other interest rate categories I examined. See Exhibit \_\_ (JAR-  
12 10), Page 2. This 4% risk premium was increased or decreased as warranted by the  
13 historic data when applied to each of the separate interest rate categories to which  
14 I applied the risk premium method.

15  
16 Q. WHY HAVE YOU CHOSEN 30 YEARS TO SHOW THE DOWNTREND IN  
17 THE RISK PREMIUM RATHER THAN A SHORTER TIME PERIOD SUCH  
18 AS 10 YEARS?

19 A. Ten years is far too short a time period to be able to observe the actual risk  
20 premium based upon realized historic returns. If the equity risk premium  
21 declines, this means by definition that equity investors are willing to settle for a  
22 lower risk premium component of the total return they are demanding. If they are  
23 willing to settle for a lower return and if other things remain equal, this means

1 that investors are willing to pay a higher stock price for the same future expected  
2 cash flow. What this means is that the initial reaction to a lowering of the equity  
3 risk premium is for the stock price to rise. A rise in the stock price results in a  
4 higher historic earned return at the same time the higher stock price means the  
5 investor would expect a lower future return. Unless enough years are used in the  
6 historic analysis to diminish the misleading impact of the initial response to a  
7 reduction in the risk premium, the historic earned returns will not be helpful. I am  
8 especially encouraged by the relative consistency of the trend in the lowering of  
9 the risk premium as shown in the 30-year data. This reinforces the likelihood  
10 that the risk premium has in fact declined as Federal Reserve Chairman  
11 Greenspan and many others have observed.

12  
13 Q. ARE THERE REASONS WHY THE RISK PREMIUM HAS BEEN IN A  
14 MULTI-DECADE DECLINE?

15 A. Yes. In addition to the reasons previously cited as given by Professor Siegel and  
16 Ibbotson and Chen, another important reason is a lowering of the U.S. capital  
17 gains income tax rate. Investors are concerned about the total after-tax return  
18 earned. The majority of the return earned by an investor on a long-term bond  
19 (and in many cases all of the return earned by a long-term bond investor) is the  
20 interest income. Interest income is fully taxed at regular income tax rates. This  
21 is in contrast to an investor in common stocks. Investors in the average large  
22 common stock have received the majority of their total return in the form of stock  
23 price, or capital appreciation. Capital appreciation is not taxed at all until the

1 stock is sold. Then, it is taxed at the long-term capital gains rate if the stock has  
2 been owned long enough to be eligible for such treatment. Currently, long-term  
3 capital gains are subject to a federal income tax of no more than 20%. There is a  
4 considerably lower rate on long-term capital gains than prevailed in prior  
5 decades.

6 Yet another factor causing the decline in the equity-to-debt risk premium is  
7 the proliferation of mutual funds. Mutual funds have increased the demand for  
8 common stocks by making it easier for more investors to own common stock.  
9 While it is debatable whether the popularity of mutual funds is proof that the risk  
10 premium has declined (because more investors are comfortable investing in  
11 common stock) or is the reason that the risk premium declined (because mutual  
12 fund marketing has increased the availability of investment funds for equity), it is  
13 nevertheless a relevant factor.

14  
15 Q. WHAT MATHEMATICAL METHOD DID YOU USE TO COMPUTE

16 HISTORIC ACTUAL RETURNS WHEN DERIVING THE RISK PREMIUM?

17 A. I used the geometric average. The use of the geometric average approach is  
18 supported by the financial literature and empirical analysis. Please see (JAR-13)  
19 to this testimony for a detailed discussion on why the geometric average is proper.

20  
21 Q. WHAT COST OF EQUITY IS INDICATED BY THE IMPLEMENTATION OF

22 THE RISK PREMIUM/CAPM METHOD IN THIS CASE?



1 A. As shown on Exhibit \_\_\_\_ (JAR-2), the cost of equity indicated by the equity risk  
2 premium/CAPM method is 7.80% after making specific adjustment for the risk  
3 of the electric utility business and is 8.56% before making the risk adjustment.  
4 The cost of equity indicated by the inflation premium method is 9.60% to 10.00%  
5 before making an adjustment for the lower than average risk faced by PEF.  
6

7 **VIII. EVALUATION OF THE TESTIMONY OF DR. VANDER WEIDE**

8 **A. INTRODUCTION**

9  
10 Q. PLEASE SUMMARIZE YOUR CONCERNS WITH DR. VANDER WEIDE'S  
11 TESTIMONY IN THIS PROCEEDING.

12 A. My review of the testimony of Dr. Vander Weide reveals serious errors in  
13 financial logic and poor mathematical choices that have resulted in a substantial  
14 upward tilt to his results. These deficiencies, especially when coupled with the  
15 incorrect, overly equity-laden common equity ratio proposed by PEF, and further  
16 increased by the Company's additional 0.5% requested addition to the cost of  
17 equity, cause Dr. Vander Weide's 12.3% calculated cost of equity to be  
18 dramatically and unjustifiably higher than PEF's true cost of capital.

19 Problems with the Company's cost of capital presentation include:

- 20  
21 1. Use of the capital structure of PEF, even though this capital structure contains  
22 considerably more common equity than the capital structure Progress Energy  
23 uses for its consolidated operations.  
24

- 1           2. The PEF capital structure employed by Dr. Vander Weide contains  
2           considerably more common equity than the average capital structure of  
3           his comparative electric companies. Dr. Vander Weide proposes a  
4           backwards adjustment where he adds 0.90% to his recommended cost of  
5           equity for PEF based on his claim of financial risk, even though his  
6           proposed capital structure has less, not more, common equity than the  
7           structures of the companies in his comparative group.  
8
- 9           3. Use of the upwardly-biased arithmetic average to quantify historic actual  
10          risk premiums instead of the more appropriate geometric average, coupled  
11          with reliance on a specialized estimate of future interest rates rather than  
12          the market consensus of future interest rates. After obtaining these high  
13          estimates in his risk premium approach, Dr. Van der Weide used them to  
14          dilute the more reasonable 9.4% result (per Exhibit No. \_\_ (JWV-1) Page  
15          1 of 3) he obtained when applying his DCF method to the comparative  
16          electric companies he chose.  
17
- 18          4. The addition of 0.25% to the cost of equity for financing costs even  
19          though the actual costs incurred are substantially lower. (See response to  
20          Citizens' 3<sup>rd</sup> Set of Interrogatories, Question #154 a included in Exhibit  
21          \_\_ (JAR -15)  
22
- 23          5. The use of a market value capital structure, even though:  
24  
25               a) such a market-based capital structure (where for capital structure  
26               purposes the market price times the number of shares outstanding  
27               is used for the common equity balance rather than the traditional  
28               per-books balance of common equity as is always used by the  
29               Commission in electric utility rate proceedings) is not indicative  
30               of the way an efficient provider of electric utility service would  
31               finance its business, and  
32  
33               b) The use of a market-based capital structure is fundamentally,  
34               methodologically incompatible with a DCF-derived cost of  
35               equity. The mismatch contributes to the overstatement of PEF's  
36               cost of equity.  
37
- 38          6. The misuse of the DCF method as Dr. Vander Weide applied it. He  
39          erred by:  
40  
41               a) incorrectly using a 5-year short-term earnings per share growth as  
42               a proxy for long-term growth;  
43  
44               b) inflating the dividend yield by making an upward adjustment for  
45               the quarterly payment of dividends without excluding many

1 companies from the S&P 500 group yet while claiming to have  
2 presented data for the group as a whole;

3  
4 c) making a corresponding adjustment to lower the return for the  
5 compounding of the equity return within a year; and

6  
7 d) adding a 25 basis point allowance for financing costs when the  
8 actual costs have been considerably lower than this.

9  
10 7. Selectively excluding companies from the S&P 500 in a way that  
11 could bias the result.

12  
13 8. Misusing the risk premium method by:

14  
15 a) Relying on an arithmetic average instead of the  
16 methodologically correct geometric average to quantify  
17 historic earned risk premiums,

18 b) Using a specialized estimate of future interest rates rather  
19 than the market consensus of interest rates, and

20 c) Failing to consider that debt to equity risk premiums have  
21 been in a multi-decade decline.

22  
23 9. Making an improper adjustment for financial risk.

24  
25 **B. MISUSE OF DCF METHOD**

26  
27 Q. HOW DID DR. VANDER WEIDE ERR WHEN HE EXCLUDED COMPANIES  
28 FROM HIS DCF ANALYSIS?

29 A. At page 35, lines 11-16 of his testimony Dr. Vander Weide states that he  
30 excluded companies for various reasons, including any decline in the dividend  
31 rate over the last two years. Excluding companies that happened to cut the  
32 dividend rate can skew the results of the analysis. This is effectively a technique  
33 to exclude companies with unusually low indicated DCF results without making  
34 a similar exclusion of companies with high DCF results.

1 Dr. Vander Weide's method for excluding companies from the S&P 500 is  
2 even more of a problem than the method he used to exclude companies from his  
3 electric utility group. His Exhibit No. \_\_\_\_ (JVW-9) specifically states that he  
4 excluded all companies that did not have a forecast of a positive growth rate. He  
5 made this exclusion, then excluded all companies that had either the 25% highest  
6 or 25% lowest results. By first excluding the companies with negative growth  
7 rates and then excluding both the high and the low 25%, Dr. Vander Weide has  
8 produced what could be a substantial upward skewing of his DCF analysis  
9 because he excluded more companies with a low DCF result than those he  
10 excluded for a high DCF result.

11 **C. INCORRECT USE OF FIVE-YEAR GROWTH RATES IN DCF**  
12 **METHOD.**  
13

14 Q. WHAT DID DR. VANDER WEIDE USE TO MEASURE LONG-TERM  
15 SUSTAINABLE EARNINGS PER SHARE GROWTH?

16 A. Dr. Vander Weide used analysts' five-year earnings per share forecasts as his  
17 sole proxy for long-term sustainable growth.  
18

19 Q. IS IT APPROPRIATE TO USE ANALYSTS' FIVE YEAR FORECASTS OF  
20 EARNINGS PER SHARE AS THE PROXY FOR LONG TERM GROWTH?

21 A. No. Use of a short-term five-year forecast earnings per share growth rate is  
22 improper, because no attempt is made to assure these earnings per share forecasts  
23 are representative of the long-term sustainable future growth rates in dividends

1 per share, book value per share, or stock price. While analysts' short-term  
2 earnings per share forecasts can be used to develop a sustainable growth rate in  
3 the context of a constant-growth DCF model, when they are used directly as a  
4 proxy for long-term growth they are no more accurate than a forecast the height  
5 of a human at age 60 based upon a reasonable forecast of annual growth for the  
6 five years starting at age 12.

7 Earnings per share forecasts are generally different from the anticipated  
8 growth in dividends, book value, and stock price because they include the often  
9 substantial impact of bringing earnings up or down to a normal earned return on  
10 equity from whatever return on equity was achieved in the most recently  
11 completed fiscal year. Additionally, as I explained earlier, such analysts' growth  
12 rates tend to be overstated because of the well-documented propensity for  
13 analysts to be overly optimistic. The combined effect of the habitual optimism  
14 and the required movement over a relatively short five-year time period to bring  
15 earnings per share up to the optimistic levels causes five-year analysts' growth  
16 rates to commonly overstate the future sustainable growth rate.

17

18 Q. HAS DR. VANDER WEIDE PROVIDED ANY JUSTIFICATION FOR HIS  
19 USE OF FIVE-YEAR ANALYSTS' EARNINGS PER SHARE GROWTH  
20 RATE FORECASTS IN HIS DCF MODEL?

21 A. Yes. On page 31 of his testimony, Dr. Vander Weide claims to rely on a research  
22 paper he wrote in 1988. However, Dr. Vander Weide is using his own research  
23 paper far more broadly than is justified by the paper itself. The paper concludes

1 that "... investors rely more heavily on analysts' growth forecasts than on  
2 historical growth extrapolations in making security buy and sell decisions."  
3 Then, the paper goes on to conclude that "Indirectly, this finding lends support to  
4 the use of valuation models whose input includes expected growth rates." This  
5 says nothing about whether analysts' forecasted dividend growth rates are or are  
6 not more accurate than analysts' earnings per share forecasts. It says nothing  
7 about whether or not a growth rate derived by multiplying forecasted earned  
8 return on equity by a retention rate is more accurate than merely using a five-year  
9 earnings per share growth rate as a proxy for long term growth.

10 Furthermore, the paper relied upon by Dr. Vander Weide says nothing about  
11 the degree of accuracy that can be obtained from the method he used. All the  
12 paper does is compare the relative ability of analysts' forecasted earnings per  
13 share growth rates and historic growth rates to explain stock prices. The paper  
14 shows that companies with high growth expectations have better stock prices  
15 than companies with low growth expectations. However, given how the study  
16 was done, if all of the growth rate numbers he used were consistently overstated  
17 by 50% due to a factor such as temporarily high growth coming out of a  
18 recession, he would have obtained the same results as if the growth rates were  
19 accurate. In other words, just because analysts' forecasts are better at explaining  
20 stock prices than historical growth rates does not mean that the results are  
21 accurate, or free of bias.

22 I have been testifying on the cost of capital since about 10 years before this  
23 paper relied upon by Dr. Vander Weide was presented, and I have always

1 advocated using a growth rate based upon forecasted expectations and not  
2 historic growth rate indicators. Therefore, I basically agree with the conclusions  
3 in the paper that forecasted results are better at explaining stock prices than  
4 historic growth rate indicators. However, merely using analysts' five-year  
5 earnings per share growth rates as a proxy for what investors expect for long-term  
6 sustainable growth is at best a very unreliable and very inaccurate method of  
7 quantifying future expected growth. While this has always been true, it is more  
8 true now than ever.

9  
10 Q. WHY IS IT MORE INAPPROPRIATE NOW THAN EVER BEFORE TO USE  
11 ANALYSTS' FIVE-YEAR EARNINGS PER SHARE GROWTH RATE  
12 FORECASTS AS A PROXY FOR LONG-TERM SUSTAINBLE GROWTH IN  
13 THE DCF MODEL?

14 A. In recent years, investors have learned the hard way that analysts' forecasts often  
15 contain a substantial upward bias. Starting at least 10 years after the completion  
16 of the paper prepared by Dr. Vander Weide, countless articles that appeared in  
17 both business publications and the popular press throughout the last year have  
18 shown these biases. *Business Week*, a widely read business publication, contained  
19 numerous articles that reported on the problems with securities analysts. These  
20 articles include:

21 1. A cover story entitled "How Corrupt is Wall Street" appeared in the May  
22 13, 2002 issue of *Business Week*.

1 a) The article mentions that Merrill Lynch, Solomon Smith  
2 Barney, Morgan Stanley Dean Witter along with 10 other  
3 firms are being investigated by the US Securities and  
4 Exchange Commission for unethical practices. See page 37 of  
5 May 13, 2002 Business Week article included in (JAR-14) of  
6 this testimony.

7 b) According to the article, New York State Attorney General  
8 Eliot Spitzer made public e-mail exchanges at Merrill. Thee-  
9 mail messages uncovered by Dr. Spitzer showed that  
10 "...analysts disparage stocks as 'crap' and 'junk' that they  
11 were pushing at the time. The e-mails are so incendiary that  
12 they threaten to thrust Wall Street into the sort of public-  
13 relations nightmare that Philip Morris, Ford, Firestone, and  
14 Arthur Andersen have endured in recent years." (See page 39  
15 of Business Week May 13, 2002 included in (JAR-14) of this  
16 testimony)

17 c) The article features the following quote from David Komansky,  
18 the CEO of Merrill Lynch, by placing it in bold letters and  
19 large print:

20 We have failed to live up to the high standards that  
21 are our tradition, and I want to take this  
22 opportunity to publicly apologize to our clients, our  
23 shareholders, and our employees.  
24

25  
26 In the above quote, Dr. Komansky was responding to what *Business Week*  
27 describes as "...the analyst debacle..." See Business Week article "How Corrupt  
28 is Wall Street", May 13, 2002, page 42, included in (JAR-14) of this testimony.



1  
2 2. The cover of the July 29, 2002 issue of Business Week features the article  
3 entitled "THE ANGRY MARKET." The Cover summarizes the article  
4 by saying "THE BLUNT MESSAGE: Investors are re-pricing stocks to  
5 reflect a more honest picture of earnings, options, and the future." In a  
6 discussion about the inaccurate and misleading earnings reporting done by  
7 many companies, Business Week says:

8  
9 Brokerage-house analysts aren't much help either.  
10 They tend to do what companies want. For  
11 example, only six of the 21 analysts that have given  
12 First Call their estimates for AOL Time Warner  
13 Inc.'s 2003 earnings actually provided GAAP  
14 figures.

15  
16 3. A cover article in the August 5, 2002 issue of Business Week is entitled "  
17 INSIDE THE TELECOM GAME. How a small group of insiders made  
18 billions as the industry collapsed." The article discusses the buy  
19 recommendations consistently made by Dr. Grubman on these companies,  
20 and says on page 34:

21  
22 Now, investors are questioning whether Grubman was  
23 motivated by his true opinions – or by the millions of dollars  
24 he received from supporting his telecom clique.

25  
26 4. "HOW TO FIX CORPORATE GOVERNANCE" is the cover article in  
27 the in the May 6, 2002 issue of Business Week. Page 76 of this article  
28 says:

29  
30 If investors have learned anything from this crisis, it's  
31 that Wall Street's analysts are often loath to put a bad

1 spin on a stock. Historically, “sell” ratings have  
2 constituted fewer than 1% of analysts’  
3 recommendations, according to Thompson  
4 Financial/First Call...It’s more a case of an inherently  
5 conflicted system, that is now the focus of a Justice  
6 Department investigation.

7  
8 “Investors need to realize that the free research they’re  
9 getting is often just a marketing tool’, says Kent  
10 Womack, a professor at Dartmouth College’s Amos  
11 Tuck school of business.”

- 12  
13 5. A June 10, 2002 issue of *Fortune* had an article entitled “In Search of  
14 the Last Honest Analyst”. The *Fortune* article noted:

15  
16 In fact, stock research sank so low during the bubble that  
17 it actually became a contrary indicator of a stock’s  
18 performance. Researchers at the University of  
19 California and Stanford reviewed almost 40,000 stock  
20 recommendations from 213 brokerages during the year  
21 2000. The most highly rated stocks had a –31% return  
22 for the year, according to the study. Meanwhile, the  
23 stocks least favorably recommended (that is, the sells)  
24 soared an annualized 49% -- a differential of 80  
25 percentage points. (See Fortune.Com “In Search of the  
26 Last Honest Analyst”, June 2002, page 1 of 2 in JAR-  
27 14)

- 28  
29 6. A September 24<sup>th</sup>, 2002 *Wall Street Journal* article entitled “Will  
30 Grubman Case Tone Down the Exaggeration by Analysts?” states the  
31 following:

32  
33 During the 1980s and 1990s, analysts often served as quasiadvocates for  
34 companies that hired their firms for investment-banking work,  
35 accompanying them on road shows to sell their stock, setting up one-on-  
36 one meetings between management and institutional investors, and  
37 proffering their access to management to give an unofficial version of the  
38 companies’ view of business developments. (Wall Street Journal “Will

1 Grubman Case Tone Down The Exaggeration by Analysts?" September  
2 24, 2002, starting on pages C-1 and C-3, included in JAR-14JAR-14).  
3

4  
5 7. On October 22, 2002, a *Wall Street Journal* article entitled  
6 "Massachusetts Claims CSFB Stock Reports Led Investors Astray"  
7 appeared on pages C-1 and C-10. Following are some highlights from  
8 this article:

9  
10 The complaint [by the Secretary of the  
11 Commonwealth of Massachusetts] alleges CSFB misled  
12 investors by allowing its investment-banking division –  
13 in particular, star Frank Quattrone – to exert undue  
14 influence on the firm's research department.

15 The complaint which echoes one filed earlier this  
16 year by Elliott Spitzer against Merrill Lynch & Co. will  
17 no doubt add to investor concern that Wall Street  
18 peddled research it didn't believe only to get its hands  
19 on the much more lucrative investment-banking fees.

20 'The presumption that every firm engaged in this  
21 behavior is fair,' says Roy Smith, a professor of finance  
22 at New York University and a former partner at Goldman  
23 Sachs Group, Inc. 'It reminds me of how we used to talk  
24 in the locker room after a football game. That talk  
25 happens all the time, but it would sure be embarrassing if  
26 anyone ever recorded it.'

27 See: Wall Street Journal, October 22, 2002, page C-1 and C-10, included in Exhibit  
28 \_\_\_\_ (JAR-14).  
29

30 Q. WHAT DO YOU CONCLUDE FROM THESE ARTICLES?

31 A. I conclude that 'analysts' earnings per share forecasts have a strong tendency to  
32 be overly optimistic and that investors are now aware of this over-optimism.  
33 Therefore, especially if 'analysts' five-year earnings per share growth rate  
34 forecasts are used in a DCF model, the true cost of equity as expected by  
35 investors will have a strong tendency to be substantially overstated.

1

2 **D. UPWARD ADJUSTMENT FOR QUARTERLY DIVIDEND PAYMENTS**

3

4 Q. WHY WAS DR. VANDER WEIDE WRONG TO INCREASE HIS DIVIDEND  
5 YIELD TO REFLECT THE QUARTERLY PAYMENT OF DIVIDENDS?

6 A. Dr. Vander Weide's approach to escalating the dividend yield for the impact of  
7 quarterly compounding is wrong because it provides only part of the story. If it is  
8 correct to adjust the dividend yield upwards to account for quarterly  
9 compounding, then it is just as correct to adjust the return on equity DOWN to  
10 adjust for the daily compounding that occurs because a company earns its return  
11 on equity every day as revenues are collected and a DOWNWARD adjustment to  
12 the growth rate because if a company pays dividends quarterly, it has less use of  
13 the earnings to create growth. These downward adjustments to the return on  
14 equity (adjustments Dr. Vander Weide fails to consider) more than offset his  
15 upward adjustment to the dividend yield.

16

17 Q. DID DR. VANDER WEIDE MAKE ANY OF THOSE DOWNWARD  
18 ADJUSTMENTS?

19 A. No. Therefore, his quarterly dividend adjustment is incomplete and serves only  
20 to provide an upward bias to his DCF result.

21

22

23

1    **E. Dr. Vander Weide's Risk Premium Method**

2

3    Q. PLEASE BRIEFLY DESCRIBE THE RISK PREMIUM METHOD.

4    A. The risk premium method estimates the cost of equity by analyzing the historic  
5       difference between the cost of equity and a related factor such as the rate of  
6       inflation or the cost of debt.

7

8    Q. PLEASE COMMENT ON THE RISK PREMIUM METHODS AS PRESENTED  
9       BY DR. VANDER WEIDE.

10   A. Dr. Vander Weide applies the risk premium method by computing the difference  
11       in the returns earned by common stocks as compared to the return earned on  
12       bonds in a variety of different ways. However, in different combinations, these  
13       approaches rely upon the following flaws:

14       1. The overstating of historic actual returns by using the arithmetic average  
15       to compute historic actual differences in earned returns rather than the geometric  
16       or compound returns;

17

18       2. The reliance on a risk premium computed from Dr. Vander Weide's  
19       flawed approach to the DCF method;  
20       and/or

21

22       3. Ignoring the persistent and substantial drop in risk premiums that has been  
23       occurring for decades.

24

25       In addition to improperly computing the risk premium for the reasons stated  
26       above, Dr. Vander Weide's risk premium approach is also flawed because he  
27       incorrectly concludes that the risk premium between debt and equity are  
28       constant, when they are not. As I have shown earlier in this testimony, empirical

evidence, financial theory, and financial articles all show that the risk premium as measured against interest rates has been anything but constant. It is risk premiums measured against the inflation rate, not interest rates, which have shown to be reasonably constant.

Q. PLEASE EXPLAIN THE PROBLEMS CAUSED BY USING THE ARITHMETIC METHOD TO QUANTIFY THE RISK PREMIUM.

A. As will be explained in detail later in this testimony, textbooks, the U.S. Securities and Exchange Commission ("SEC"), and Value Line all have recognized that the only proper way to measure long-term historic actual earned returns is to use the geometric mean, not the arithmetic mean put forward by Dr. Vander Weide. In contrast, Dr. Vander Weide used the arithmetic mean. The arithmetic mean is specifically identified by several sources as a method that will specifically result in an answer that is upwardly biased.

Q. IS THERE A MATHEMATICAL RELATIONSHIP BETWEEN THE GEOMETRIC AVERAGE AND THE ARITHMETIC AVERAGE?

A. Yes. Page 24 of the third edition of *Stocks for the Long Run* by Professor Jeremy J. Siegel © 2002 contains the following:

The geometric return is approximately equal to the arithmetic return minus one-half of the variance  $\sigma^2$  of yearly returns  $r_G = r_A - 1/2 \sigma^2$ .

Investors can be expected to realize geometric returns only over long periods of time. The average geometric return is always less than the average arithmetic return except when all yearly returns are exactly equal. This difference is related to the volatility of yearly returns.

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12 Q. HAVE YOU SEEN COMPANY WITNESSES WHO USE THE ARITHMETIC  
13 AVERAGE CLAIM THAT THE GEOMETRIC AVERAGE IS THE CORRECT  
14 AVERAGE TO USE WHEN MEASURING HISTORIC RETURNS, BUT THE  
15 ARITHMETIC AVERAGE IS SOMEHOW CORRECT FOR FORECASTING  
16 FUTURE RETURNS?

17 A. Yes, I have seen this argument. But, given that the difference between the  
18 geometric return and the arithmetic return is due to volatility and not the true  
19 return actually being achieved, an argument that claims a different measurement  
20 technique applies to historic data than to forecast data is incorrect. Consider the  
21 following example. Assume that the U.S. Government issued a 30-year bond 15  
22 years ago that pays an annual interest rate of 5.0% on the face amount of the  
23 bond. Further assume that although interest rates fluctuated over the last 15

1 years, the current interest rate demanded by investors happens to be 5% today.  
2 Under these assumptions, over the last 15 years, the price of the bond has gone  
3 up in some years and gone down in other years. But, if the current interest rate  
4 demanded by investors on this bond is still the same 5% as was demanded by  
5 investors at the time of the original issuance, the bond will be selling for the same  
6 price as it did when originally issued 15 years ago. Because of this fluctuation, if  
7 the total return (price appreciation or price depreciation plus the 5% interest  
8 income) is measured using the arithmetic average, then the measured return will  
9 include the 5% real return actually obtained by investors plus an additional  
10 illusory return cause by volatility rather than an actual return received by the  
11 investor. From the perspective of the investor who is forecasting the return on  
12 this 5% government bond with 15 years remaining, we know with certainty that  
13 the accurate forecasted future return will be 5% per year. We also can be  
14 confident that interest rates will fluctuate over the next 15 years. Therefore, this  
15 fluctuation will cause the arithmetic return measurement to be higher than the 5%  
16 annual return even though the 5% return is the only possible return an investor  
17 who holds this bond to maturity could get.

18

19 Q. IS IT THE 5% RETURN ON THE TREASURY BOND OR IS IT THE  
20 ARITHMETIC AVERAGE RETURN THAT IS ANALAGOUS TO THE  
21 ALLOWED RETURN ON EQUITY TO A REGULATED UTILITY  
22 COMPANY?



1 A. The 5% coupon return is the return that is analogous to the allowed return.  
2 Therefore, even if we were to attempt to satisfy the investor who was incorrectly  
3 led to believe that he or she would achieve the arithmetic average and not the  
4 geometric average, the return based upon the geometric average should form the  
5 return allowed. Then, an investor who wishes to be fooled into achieving a  
6 higher return than is achieved by the geometric average will continue to be under  
7 the misconception that he or he is earning more than the geometric average. This  
8 can happen because the stock price fluctuation will still produce annual returns  
9 that, under the arithmetic average method, will appear to be higher than the  
10 allowed geometric return.

11 Consider the problem that would develop if allowed returns were errantly  
12 erroneously? set based upon the arithmetic average rather than the geometric  
13 average. If a utility company is allowed to earn a return on rate base equal to the  
14 arithmetic average, then the normal stock price fluctuations would cause the new  
15 arithmetic average measured result to continue to exceed the old allowed  
16 arithmetic average. A repetition of the error caused by using the arithmetic  
17 average, if repeated in the next rate case, would cause yet a further ratcheting up  
18 of the allowed return in each future rate case where this mistake to use the  
19 arithmetic average is repeated.

20  
21 Q. CAN YOU PROVIDE A MATHEMATICAL EXAMPLE THAT SHOWS WHY  
22 RISK PREMIUMS BASED UPON HISTORIC ARITHMETIC RETURNS  
23 ARE IMPROPER?

1 A. Yes. As previously stated, arithmetic average returns overstate the actual returns  
2 received by investors because arithmetic returns measure volatility, not actual  
3 returns earned by investors. The more variable historic growth rates have been,  
4 the more his method exaggerates actual growth rates. Arithmetic average returns  
5 ignore the impact of compound interest. For example, if a company were to  
6 have a stock price of \$10.00 in the beginning of the first year of the  
7 measurement period and a \$5.00 stock price at the end of the first year, an  
8 arithmetic average approach would conclude that the return earned by the  
9 investor would be a loss of 50%  $[(\$5-\$10)/(\$10)]$ . If, in the second year, the  
10 stock price returned to \$10.00, then the arithmetic average would compute a gain  
11 of 100% in the second year  $[(\$10-\$5)/(\$5)]$ . The arithmetic average approach  
12 would naively average the 50% loss in the first year with the 100% gain in the  
13 second year to arrive at the conclusion that the total return received by the  
14 investor over this two year period would be 25% per year  $[(-50\% + 100\%)/2$   
15  $\text{years}]$ . In other words, the arithmetic average approach is so inaccurate that it  
16 would conclude the average annual return over this two year period was 25% per  
17 year even though the stock price started at \$10.00 and ended at \$10.00. The  
18 geometric average would not make such an error. It would only consider the  
19 compound annual return from the beginning \$10.00 to the ending \$10.00, and  
20 correctly determine that the annual average of the total returns was not 25%, but  
21 was zero.

22 In order to protect investors from misleading data, the SEC requires mutual  
23 funds to report historic returns by using the geometric average only. The

1 arithmetic average is not permitted. The geometric average, or SEC method, has  
2 the compelling advantage of providing a true representation of the performance  
3 that would have actually been achieved by an investor who made an investment  
4 at the beginning of a period and re-invested dividends at market prices  
5 prevailing at the time the dividends were paid.

6

7 Q. DOES THE FINANCIAL COMMUNITY COMPUTE HISTORIC ACTUAL  
8 ACHIEVED RETURNS BASED UPON ARITHMETIC MEANS OR  
9 GEOMETRIC MEANS?

10 A. As shown earlier in this testimony, the financial community (as represented by  
11 articles from *The Wall Street Journal* and from *Business Week*) refers to  
12 geometric averages when evaluating historic returns. Additionally, an article on  
13 page 92 of the August 16, 1999 issue of *Fortune* magazine refers to the return  
14 that is equal to the geometric mean from Ibbotson Associates as "...the oft-  
15 quoted calculation..." of historic actual returns on common stocks. The article  
16 does not even mention the number that is equal to the historic arithmetic return.

17

18 Q. DO FINANCIAL TEXTBOOKS SUPPORT THE USE OF THE GEOMETRIC  
19 AVERAGE FOR COMPUTING HISTORIC ACTUAL RETURNS?

20 A. Yes. For example, the textbook *Valuation. Measuring and Managing the Value*  
21 *of Companies*, by Copeland, Koller, and Murrin of McKinsey & Co. , John Wiley  
22 & Sons, 1994, in a description of how to use the Ibbotson Associates data states  
23 the following on pages 261-262:

1           We use a geometric average of rates of return because  
2 arithmetic averages are biased by the measurement period. An  
3 arithmetic average estimates the rates of return by taking a simple  
4 average of the single period rates of return. Suppose you buy a share  
5 of a nondividend-paying stock for \$50. After one year the stock is  
6 worth \$100. After two years the stock falls to \$50 once again. The  
7 first period return is 100 percent; the second period return is -50  
8 percent. The arithmetic average return is 25 percent  $[(100 \text{ percent} -$   
9  $50 \text{ percent})/2]$ . The geometric average is zero. (The geometric  
10 average is the compound rate of return that equates the beginning and  
11 ending value.) **We believe that the geometric average represents a**  
12 **better estimate of investors' expected returns over long periods of**  
13 **time.** [Emphasis added]

14  
15  
16           Similarly, in another textbook discussion that specifically addresses  
17 the use of the Ibbotson data, *Financial Market Rates & Flows*, by James C. Van  
18 Horne, Prentice Hall, 1990, states the following on page 80:

19           The geometric mean is a geometric average of annual returns,  
20 whereas the arithmetic mean is an arithmetic average. For  
21 cumulative wealth changes over long sweeps of time, the geometric  
22 mean is the appropriate measure.

23  
24           The textbook *Investments* by Nancy L. Jacob and R. Richardson  
25 Pettit, Irwin, 1988, puts it well when it says:

26           The existence of uncertainty as reflected in a distribution of possible  
27 values makes the **expected value**, or arithmetic average rate of return, a  
28 misleading and biased representation of the wealth increments which will be  
29 generated from multiperiod investment opportunities.

30           The average *annual* rate of wealth accumulation over the investment  
31 period, termed the **average annual geometric rate of return**, correctly  
32 measures the average annual accumulation to wealth when multiple periods  
33 are involved.

34 [Emphasis is contained in the original]  
35  
36

1 Q. HAS VALUE LINE SAID ANYTHING REGARDING THE USE OF AN  
2 ARITHMETIC AVERAGE OR A GEOMETRIC AVERAGE?

3 A. Yes. On May 9, 1997, Value Line issued a report entitled "The Differences in  
4 Averaging". This report was contained on pages 6844-6845 of the "Value Line  
5 Selection & Opinion" portion of its weekly mailings to subscribers. This report  
6 says that:

7  
8 (t)he arithmetic average has an upward bias, though it is the simplest  
9 to calculate. The geometric average does not have any bias, and thus  
10 is the best to use when compounding (over a number of years) is  
11 involved.

12  
13 The Value Line report then goes on to provide examples that show why the  
14 arithmetic average overstates the achieved returns while the geometric average  
15 produces the correct result.

16 Ibbotson Associates has also said that it is the geometric average that is "...  
17 the correct average to compare with a bond yield..." See page 75 of Stocks,  
18 Bonds, Bills, and Inflation 1986 Yearbook contained in (JAR-14).

19

20 On October 8, 2003, The Wall Street Journal published an article entitled  
21 "Financial Advisers and Fuzzy Math", contained in (JAR-14). This article starts  
22 out by saying:

23 Next time your financial adviser makes a prediction for an  
24 average rate of return during an investment pitch, you might want to  
25 doublecheck the math.

26 Some financial advisers rely too heavily on a formula known as an  
27 arithmetic average, which can be misleading when investing for the long

1 term. Financial advisers who use this formula may be overstating your  
2 potential profit and leading you to take risks you might otherwise avoid.  
3

4 .  
5 Therefore, when Dr. Vander Weide chose to use the arithmetic average, he  
6 chose a method that both a financial textbook and Value Line have specifically  
7 noted to be biased. This is not a place to compromise, as the more weight that is  
8 given to the arithmetic average result, the larger the upward bias in the risk  
9 premium method.  
10

11 Q. DR. VANDER WEIDE PRESENTS EXHIBIT NO. \_\_\_\_ (JWV-7) IN SUPPORT  
12 OF THE USE OF THE ARITHMETIC AVERAGE. PLEASE COMMENT ON  
13 THE EXHIBIT.

14 A. Dr Vander Weide's Exhibit No. \_\_\_\_ (JWV-7) establishes a hypothetical  
15 example in which an investor starts with an investment that has a 50% chance of  
16 returning \$1.30 after 1 year, and another 50% probability of returning \$0.90 after  
17 one year. He then goes on to claim that after 2 periods, the total return  
18 expectation based on his hypothetical is \$1.21. He uses the numbers he put in his  
19 hypothetical to conclude that based upon the arithmetic averaging method, the  
20 total return expectation is the correct \$1.21, but he obtains a lower number when  
21 he uses the geometric method. A close review of what he has presented shows  
22 that he has not applied either the geometric or the arithmetic method properly.  
23 Yes, I agree that based upon his hypothetical, the two period return expectation is  
24 \$1.21. However, Dr. Vander Weide did NOT apply the geometric or arithmetic

1 mean methods properly. His critical omission was his failure to compound the  
2 results over two periods. As shown on Exhibit \_\_\_\_ (JAR-13), the arithmetic  
3 mean results in the faulty, overstated conclusion that the return under his  
4 hypothetical would be \$1.23, while the geometric mean method produces the  
5 correct answer of \$1.21.

6

7 Q. HAVE YOU COMPARED GRAPHICALLY THE CAPITAL APPRECIATION  
8 GROWTH RATE USING THE ARITHMETIC AVERAGE METHOD WITH  
9 THE CAPITAL APPRECIATION GROWTH RATE THAT IS OBTAINED  
10 USING THE SEC METHOD?

11 A. Yes. In Exhibit \_\_ (JAR-13) I show the actual movement of the S&P Utility  
12 index from 1928 through 2003. I also show how the index would have behaved  
13 on a year-by-year basis using the average growth obtained from the SEC method  
14 and using the arithmetic average historic growth rate methodology. The graph  
15 illustrates that the arithmetic average calculation of historic actual returns  
16 deviates at an ever-increasing rate over time from the actual S&P Utility Index,  
17 overstating the total return from 1928-2003 by about 500%. By contrast, the  
18 historic actual returns computed using the SEC method is a dramatically more  
19 reasonable track of the growth of the S&P utility over time and thus is the proper  
20 measure of historic actual return rates realized by investors.

21 In the exhibit, the top line shows that if \$100 had been invested in public  
22 utility common stocks from the beginning of 1928 through 2003 and had earned  
23 the arithmetic return, the \$100 would have grown to about \$238,000. The dotted

1 line in the graph shows what actually would have happened to a real \$100  
2 investment if it had been invested in public utility common stocks. As shown on  
3 the graph, the \$100 investment would have actually grown to about \$44,000.  
4 While the increase from \$100 to \$44,000 is a very sizeable return, it is far less  
5 than the \$238,000 return that would have been achieved if the arithmetic return  
6 methodology had been achieved. The smooth line that ends at the same place as  
7 the dotted actual return line is the ongoing value of \$100 invested in 1928 that  
8 grew at the geometric return rate. Note that the \$100 invested at the geometric  
9 return rate is, by 2003, exactly equal to the actual return. Therefore, the  
10 geometric return accurately measures the actual return that was achieved from  
11 1928 through 2003, but the arithmetic average return exaggerates the actual  
12 return by over five times.

13  
14 Q. HOW MUCH HIGHER IS THE RISK PREMIUM DIFFERENCE BASED  
15 UPON AN ARITHMETIC AVERAGE THAN IT IS BASED UPON A  
16 GEOMETRIC AVERAGE?

17 A. From 1928 to 2003, the arithmetic average method (to which Dr. Vander Weide  
18 gives weight) produced an indicated risk premium that was 2.13% higher for  
19 public utility stocks versus public utility bonds than the risk premium indicated  
20 by using the SEC, or geometric average method. The arithmetic median method  
21 is essentially identical to the arithmetic mean method and therefore produces an  
22 error that is similar to the error produced by the arithmetic average method.

23



1 Q. HAVE RISK PREMIUMS BEEN STABLE OVER THE YEARS?

2 A. No. This is yet another important problem with Dr. Vander Weide's approach to  
3 the risk premium method. As I have previously stated, U.S. Federal Reserve  
4 Chairman Alan Greenspan has noted that risk premiums have declined. Dr.  
5 Vander Weide failed to see this downtrend because he only examined changes  
6 from one year to the next without examining the bigger picture.

7

8 Q. WHAT DOES IBBOTSON ASSOCIATES SAY IS THE CURRENT  
9 APPROPRIATE RISK PREMIUM?

10 A. Page 189 of the "Stocks, Bonds, Bills, and Inflation" 2004 Yearbook by Ibbotson

11 Associates says:

12 Long-term Market Predictions

13

14 Ibbotson and Chen believe that stocks will continue to provide  
15 significant returns over the long run, averaging around 9.22 percent  
16 per year, assuming historical inflation rates. The geometric equity  
17 risk premium, based on the supply side earnings model, is calculated  
18 to be 3.84 percent.

19 Page 181 of the "Stocks, Bonds, Bills, and Inflation" 2005 Yearbook by

20 Ibbotson Associates says:

21

22 Long-term Market Predictions

23

24 Ibbotson and Chen believe that stocks will continue to provide  
25 significant returns over the long run, averaging around 9.52 percent  
26 per year, assuming historical inflation rates. The equity risk  
27 premium, based on the supply side earnings model, is calculated to  
28 be 4.08 percent on a geometric basis and 6.14% on an arithmetic  
29 basis.

30

1 Q. HOW HAS DR. VANDER WEIDE QUANTIFIED THE RISK FREE RATE  
2 THAT HE USED IN HIS RISK PREMIUM ANALYSES?

3 A. Dr. Vander Weide used the long-term treasury bond rate as his risk free rate.  
4 Even though the current long-term interest rate is the reflection of what investors  
5 expect to be the long-term interest rate, Dr. Vander Weide replaced the judgment  
6 of the market with a forecast of interest rates. The forecast of interest rates he  
7 used was 5.70% (see Exhibit No. \_\_\_\_ (JWV-9), Page 1) even though the actual  
8 long-term interest rate as of the time he prepared his testimony was 4.89% (See  
9 the response to Citizen's 3<sup>rd</sup> Set of Interrogatories, #165, part b, included in  
10 Exhibit \_\_\_\_ (JAR-15)). Interestingly, while Dr. Vander Weide based his analysis  
11 on the forecast of an increase in Treasury rates, in June the interest rate dropped  
12 to about 4.49%.

13

14 Q. DID DR. VANDER WEIDE PRESENT ANY EVIDENCE TO SHOW THAT  
15 USING THE FORECAST OF AN ECONOMIC SERVICE WAS MORE  
16 ACCURATE THAN DEPENDING ON THE MARKET FORECAST AS  
17 EXPRESSED IN LONG-TERM INTEREST RATES?

18 A. No.

19

20 Q. DID YOU PREPARE SUCH A STUDY?

21 A. Yes. From materials available in my office, I was able to review interest rate  
22 forecasts made by Value Line going back to 1992. As shown on Schedule JAR-11,  
23 Value Line's forecast for interest rates was high by an average of 1.22%. Using  
24 actual long-term interest rates as a forecast of what long-term interest rates would be  
25 in five years was considerably less inaccurate. While it was also high, it was high by  
26 an average of 0.76%.

1           A review of the graph shown on Exhibit \_\_ (JAR-11) shows that in the period  
2 from 1992-2005 long-term interest rates were in a significant downtrend. Forecasts  
3 were incapable of accurately predicting that downtrend. Whether the downtrend will  
4 continue, flatten out, or reverse is unknown. It is unknown to me, and as shown from  
5 the review of history it is also unknown to forecasters. It would be unfair to  
6 ratepayers to make them pay for an up-trend in interest rates that has been promised  
7 year after year by forecasters but has yet to materialize. Dr. Vander Weide's use of  
8 the highly inaccurate forecast of long-term interest rates rather than using current  
9 actual long-term interest rates has caused his Risk Premium methods to overrate the  
10 cost of equity by about 0.8%. This error he has made combined with the others  
11 previously discussed help explain why his Risk Premium results produce such  
12 unrealistically high cost of equity estimates.

13

14

15 **F. UPWARD ADJUSTMENT FOR FINANCING COSTS**

16

17 Q. YOU STATED IN THE SUMMARY PORTION OF THIS SECTION THAT  
18 DR. VANDER WEIDE WAS INCORRECT TO ADD AN ALLOWANCE FOR  
19 FINANCING COSTS TO HIS REQUESTED COST OF EQUITY. PLEASE  
20 EXPLAIN WHY.

21 A. Dr. Vander Weide's recommendation includes an adjustment to his cost of equity  
22 for financing costs. Both the S&P 500 and the other sample companies he  
23 examined have common stock that is selling at a market price considerably  
24 higher than its book value. The premium received from the sale of stock at these  
25 prices would be more than sufficient to fully pay for financing costs.

1

2 Q. WHAT IS THE AMOUNT HE HAS REQUESTED FOR FINANCING COSTS?

3 A. According to his response to 154, part b, Dr. Vander Weide's financing cost  
4 request, if adopted by the Commission, would result in an annual cost to  
5 ratepayers of \$10.9 million.

6 Q. IS THIS \$10.9 MILLION PER YEAR A REALISTIC REQUEST FOR  
7 FINANCING COSTS?

8 A. No. According to the response to Citizen's 3<sup>rd</sup> Set of Interrogatories, # 155, the  
9 total amount for financing costs incurred by the consolidated entities that owned  
10 PEF in the last 20 years totaled \$67.1 million, or about \$3.4 million per year.  
11 This amount becomes smaller yet after the \$3.4 million is allocated to PEF,  
12 showing that even before accounting for the benefits associated with selling new  
13 stock in excess of book value the financing cost allowance requested by Dr.  
14 Vander Weide is many multiples of the actual incurred financing costs.

15

16 **G. IMPROPER ADJUSTMENT FOR FINANCIAL RISK**

17

18 Q. IS IT PROPER TO MAKE AN ADJUSTMENT FOR THE FINANCIAL RISK  
19 OF A COMPANY RELATIVE TO THAT OF THE COMPARATIVE GROUP?

20 A. Yes. Financial risk is influenced by the amount of debt financing a company  
21 uses to raise its capital. The greater the amount of debt, the higher the financial  
22 risk. As I have shown on my Exhibit \_\_\_\_ (JAR-2), since the common equity ratio  
23 of the consolidated Progress Energy contains 41.8% common equity-- which is

1 slightly less common equity than the average of the 44.21% common equity used  
2 by the comparative group of electric utility companies-- I recommended that  
3 0.10% be added to the 9.00% industry average cost of equity to allow for the  
4 higher financial risk of Progress Energy consolidated. I also noted that if the  
5 63.08% common equity ratio requested by PEF were to be used, then the cost of  
6 equity would decline to considerably below 9.00% because the requested 63.08%  
7 common equity ratio is considerably higher than the 44.21% average for the  
8 comparative group (Per Exhibit \_\_ (JAR-1), P. 1, the cost of equity associated  
9 with a common equity ratio of 63.08% is about 8.50%. However, even if the  
10 allowed cost of equity were lowered to 8.50%, the 63.08% is such an inefficiently  
11 high common equity ratio that the resultant revenue requirement from this capital  
12 structure is still meaningfully above the cost of capital appropriate for the  
13 Progress Energy consolidated.)

14 Given these facts, one would expect that if Dr. Vander Weide made the mistake of  
15 orienting towards the PEF reported capital structure rather than the Progress Energy  
16 consolidated capital structure, he would at least recognize that since the PEF  
17 requested capital structure contains considerably more common equity than both  
18 Progress Energy consolidated and the comparative group average, he should lower  
19 the 11.40% pre-financial risk cost of equity he found appropriate on page 58 of his  
20 testimony to reflect the reduced level of debt at the PEF level. But, Dr. Vander  
21 Weide did not do this. By incorrectly switching to a market value capital structure,  
22 an approach that is not only theoretically flawed but impossible to apply in this case  
23 because PEF has no publicly traded stock and therefore no definable market value,

1 Dr. Vander Weide turned what should have been a downward adjustment to his  
2 already inflated 11.40% cost of equity into an adjustment that further increased the  
3 cost of equity.

4  
5 **H. USE OF MARKET VALUE CAPITAL STRUCTURE**

6  
7 Q. IS IT IN ANY WAY REASONABLE TO USE THE MARKET VALUE  
8 CAPITAL STRUCTURE OF PROGRESS ENERGY AS A PROXY FOR THE  
9 MARKET VALUE OF PEF?

10 A. No. Progress Energy's stock price is influenced not only by its book value  
11 capital structure, which contains a lower percentage of common equity than  
12 PEF's book value capital structure; it is also influenced by the performance of its  
13 unregulated operations. Furthermore, management of Progress Energy has  
14 specifically stated that it has determined its target capital structure based upon the  
15 mid-point goal of a capital structure with 55% debt. That is 55% of *book value*,  
16 NOT 55% of market value. See Exhibit \_\_ (JAR-15), the response to Citizen's  
17 3<sup>rd</sup> Set of Interrogatories, Questions # 112, 113, and 122.

18  
19 Q. HOW DID YOU ARRIVE AT THE NECESSARY COST OF EQUITY  
20 ADJUSTMENT?

21 A. I examined, based upon a DCF analysis and variations in changes in capital  
22 structure, the cost of equity demanded by investors pursuant to changes in the  
23 book level of common equity. Dr. Vander Weide presented no such study.

1

2 Q. IS A DCF-DETERMINED COST OF EQUITY CONSISTENT WITH A  
3 MARKET VALUE CAPITAL STRUCTURE DETERMINATION?

4 A. No. To the contrary, the two concepts are incompatible. They do not mix. The  
5 DCF method is a carefully designed approach to determining the cost of equity.  
6 It is based upon the discounting of future cash flows anticipated by investors.  
7 The DCF model is implemented by determining the present value of future  
8 expected cash flows. Future cash flows are dependent upon both what a  
9 company is able to earn on its current investment, and the return a company is  
10 able to earn on reinvested funds.

11 The problem with using a DCF cost of equity in conjunction with a market  
12 value capital structure, or any cost rates inferred from a market value capital  
13 structure (assuming such a market value analysis were even possible in the case  
14 of PEF), is that it incorrectly assumes that a company could reinvest new funds at  
15 the same book returns that give rise to market prices even when market prices  
16 deviate widely from book value. In reality, when stock price differs from book  
17 value, there is a difference in the earnings benefit achieved by investors from the  
18 portion of earnings paid out as a dividend and the portion of earnings retained in  
19 the business to produce future growth. The greater the market price deviates  
20 from book value, the more significant becomes the difference.

21

22 Q. HOW DOES THE DIFFERENCE IN THE RETURN INVESTORS CAN  
23 ACHIEVE FROM DIVIDENDS AND THE RETURN A COMPANY CAN

1 EARN FROM INVESTING FUNDS AT BOOK VALUE RELATE TO THE  
2 DCF METHOD?

3 A. The DCF method works by separately evaluating dividends and growth.

4 The dividend portion of the cash flow is received by investors. Investors may  
5 use that cash for current consumption or use it to re-invest in any available  
6 investment (stocks, bonds, etc.) at currently available market prices. The portion  
7 of earnings that a company does NOT pay out as a dividend (or retains in the  
8 business) is reinvested by the company at whatever return it can achieve on book  
9 value. As book value and earnings grow, stock price tends to grow. When, as is  
10 generally the case today, book values are lower than market values, the returns  
11 that a company can achieve by re-investing the earnings in its own business at  
12 book value are higher than when those earnings are paid out as a dividend and  
13 then re-invested by the investor at market value.

14 The higher return achievable through the reinvestment of earnings at book  
15 value rather than the market value causes a properly applied DCF method to  
16 compute a higher cost of equity than if those same earnings were paid out as a  
17 dividend. A key benefit of the DCF model is its ability to correctly differentiate  
18 between the value of the portion of earnings paid out as a dividend and the  
19 portion of earnings retained and re-invested in the business. However, this  
20 important attribute of the DCF method is negated by Dr. Vander Weide's use of a  
21 market value capital structure to quantify financial risk differentials.

22



1 Q. HOW DOES DR. VANDER WEIDE'S USE OF A MARKET VALUE  
2 CAPITAL STRUCTURE NEGATE THE INTEGRITY OF THE DCF MODEL?

3 A. When Dr. Vander Weide proposes to adjust the results of a DCF-derived cost of  
4 equity based on market value capital structures, he is effectively making the  
5 critical but completely invalid assumption that when investors receive a dividend,  
6 those funds can be re-invested by that investor at book value, even though  
7 investors have no such opportunity. Investors have to buy new stock at market  
8 value, not book value. Yet, when Dr. Vander Weide applies the full DCF return  
9 to the market value of the company rather than the book value of the company, he  
10 is effectively making the invalid assumption that dividends can be re-invested at  
11 book value returns.

12

13 Q. CAN YOU SHOW EMPIRICALLY THAT DR. VANDER WEIDE'S  
14 APPROACH OF APPLYING A DCF DERIVED COST OF EQUITY TO A  
15 MARKET VALUE CAPITAL STRUCTURE IS CONTRARY TO THE  
16 REALITIES OF THE FINANCIAL MARKETPLACE?

17 A. Yes. The inconsistency between a market value capital structure and the DCF  
18 cost of equity is so substantial that it is easy to observe. By recommending that a  
19 company should be allowed to earn its DCF return on the market value of its  
20 investment rather than the book value of its investment, Dr. Vander Weide is  
21 saying that fully competitive companies can earn this DCF return on the market  
22 value. However, in reality this is far from the truth. Consider the following:  
23 According to page MW 58 of the June 13, 2005 issue of Barron's, the earnings

1 yield (earnings divided by price) on the S&P 500 index is 5.04%. This means  
2 that the return on market value for the S&P 500 that investors in these mostly  
3 competitive industrial companies are earning, is no where near the cost of equity  
4 indicated by the DCF method. In other words, an "apples to apples" comparison  
5 of market values to earnings shows that the actual earnings on market value that  
6 are being achieved by competitive firms are dramatically lower than the cost of  
7 equity indicated by the DCF method. This illustrates that there is a huge internal  
8 inconsistency in the way Dr. Vander Weide determines his recommended  
9 financial risk adjustment based on market value capital structure and the way the  
10 cost of the components of that capital structure are determined. The end result of  
11 the inconsistencies in the way Dr. Vander Weide proposes to quantify the  
12 financial risk differential for PEF is that Dr. Vander Weide's cost of equity  
13 recommendation is even more overstated than if he had not made the adjustment  
14 at all.

15  
16 Q. ARE THERE ANY OTHER SIGNIFICANT PROBLEMS WITH DR. VANDER  
17 WEIDE'S PROPOSED APPROACH TO ADJUSTING FOR FINANCIAL RISK  
18 BASED ON MARKET VALUE?

19 A. Yes. He has proposed that PEF be allowed to earn 12.3% on equity with a book  
20 value capital structure containing 63.08% common equity. (See Schedule JAR 1,  
21 P. 2). However, the market value exists only for Progress Energy. Progress  
22 Energy has a book value capital structure containing 41.8% common equity.  
23 According to Value Line, Progress Energy is expected to earn 9.00% on its book

1 common equity. To the extent investors agree with Value Line, then the stock  
2 price of Progress Energy is a function of this return on book equity expectation of  
3 9.00% on a capital structure containing 41.9% common equity. If Progress  
4 Energy's investors expected earnings as high as those recommended by Dr.  
5 Vander Weide, then the stock price of Progress Energy would be considerably  
6 higher than the one used by Dr. Vander Weide to quantify financial risk.  
7 Therefore if, in spite of all the mathematical flaws with the market value capital  
8 structure proposal made by Dr. Vander Weide, one wanted to use this seriously  
9 flawed approach, it would be necessary to make an adjustment to the market  
10 value capital structure analysis to factor in the stock price that would exist if Dr.  
11 Vander Weide's recommendation were adopted. Given that the average future  
12 return on equity expectation for the comparative group of companies selected by  
13 Dr. Vander Weide is for a return on book equity lower than the unadjusted 11.4%  
14 recommended by Dr. Vander Weide, the net effect of considering the change in  
15 future expected return on book equity would be to switch Dr. Vander Weide's  
16 proposed adjustment to the cost of equity based on market value capital structure  
17 from an addition to a subtraction.

18  
19 **IX. COMMENTS ON THE TESTIMONY OF MR. POURTUONDO**  
20

21 Q. HAVE YOU READ THE SECTION OF THE TESTIMONY OF MR.  
22 PORTUONDO THAT RELATES TO CAPITAL STRUCTURE?

1 A. Yes. I am aware that on pages 27-31, Mr. Portuondo has proposed numerous  
2 adjustments to capital structure. These adjustments are:

- 3 1. An adjustment to avoid the "...ongoing punitive effect of the costs the  
4 Company agreed to absorb in the settlement of an investigation into  
5 an unplanned outage at the Crystal River Unit 3 unclear unit..."  
6
- 7 2. An adjustment to the equity component "... to recognize the treatment  
8 of its long-term purchase power agreements..." by debt rating  
9 agencies,  
10
- 11 3. An adjustment "... to directly assign commercial paper as the source  
12 of capital for funding the unrecovered fuel costs on PEF's balance  
13 sheet..."  
14

15 Q. DO YOU AGREE WITH THESE PROPOSED ADJUSTMENTS?

16 A. No.  
17

18 Q. PLEASE EXPLAIN WHY YOU DISAGREE WITH MR. PORTUONDO'S  
19 PROPOSAL TO MAKE AN ADJUSTMENT TO ELIMINATE THE  
20 IPUNITIVE EFFECTS OF THE UNPLANNED CRYSTAL RIVER OUTAGE.

21 A. Page 28 of Mr. Portuondo's testimony explains that this unplanned Crystal River  
22 outage occurred back in 1996. While the Company may have taken a write-off as  
23 a result of that outage that could have caused a temporary distortion of capital  
24 structure, in the years that have passed good management would have long ago  
25 addressed any capital structure distortions. Good management controls capital  
26 structure through mechanisms such as issuing or buying back common equity,  
27 dividend policy, and issuing or buying back debt. Good management sees to it  
28 that the capital structure it implements reasonably approximates the capital

1 structure that produces the lowest overall cost of capital. After approximately 9  
2 years, the management of PEF and Progress Energy consolidated has had far  
3 more than enough time to revise capital structure ratios to offset any temporary  
4 imbalance that might have been caused by the Crystal River write-off.

5 Even if it were true (which it is not) that capital structure is merely an  
6 accident of history and not controlled by good management, then such a way of  
7 thinking would open the door to an unwieldy number of adjustments. For  
8 example, to the extent that PEF earned more than its cost of equity in any year,  
9 the same logic that would support the sustained adjustment for the Crystal River  
10 write-off that occurred 9 years ago would support the reduction of the balance of  
11 common equity in the capital structure to eliminate the impact of any over-  
12 earnings that might have occurred in the past. Otherwise, ratepayers would be  
13 double-penalized for over earnings.

14  
15 Q. PLEASE RESPOND TO MR. PORTUNDO'S PROPOSAL TO MAKE A  
16 CAPITAL STRUCTURE ADJUSTMENT FOR RATING  
17 AGENCIES'TREATMENT OF PURCHASED POWER COSTS.

18 A. Once again, Mr. Portundo's position fails to consider what good management  
19 does. When striving to determine the proper capital structure to use to minimize  
20 the cost of capital, good management considers all important factors. To the  
21 extent that the way rating agencies treat purchased power costs influences the  
22 proper capital structure, then this is taken into consideration in the actual  
23 implementation of the capital structure. If management has already taken the

1 impact of purchased power on the proper capital structure implementation into  
2 consideration, then an adjustment such as the one proposed by Mr. Portuondo  
3 would only be duplicative. If management has not taken purchased power into  
4 consideration, Mr. Portuondo's proposed adjustment would not make up for the  
5 management error, as such a company would still have the inadequate amount of  
6 common equity in the capital structure irrespective of whether the adjustment is  
7 or is not made in a rate case. Therefore, either way one looks at it, Mr.  
8 Portuondo's proposal to increase the common equity ratio for ratemaking  
9 purposes based upon purchased power is wrong. The existence of purchased  
10 power is part of the information that tells management what capital structure  
11 should be implemented, not what adjustment should or should not be made in a  
12 rate case to whatever capital structures management has already implemented.

13  
14 Q. PLEASE RESPOND TO MR. PORTUONDO'S PROPOSAL TO EXCLUDE  
15 COMMERCIAL PAPER ASSOCIATED WITH UNRECOVERED FUEL  
16 COSTS.

17 For reasons explained earlier in this section of my testimony, the consolidated capital  
18 structure is the capital structure that is best indicative of the capital structure that  
19 is actually financing the operations of PEF. Assigning the consolidated capital  
20 structure to PEF already results in a conservatively high level of common equity  
21 in the capital structure for PEF, given the higher risk of the unregulated  
22 operations of Progress Energy.

23 X. RESPONSE TO DR. CICHETTI' S PROPOSED "BONUS."

1 Q. DO YOU AGREE WITH DR. CICCETTI'S PROPOSAL TO "REWARD"  
2 PROGRESS ENERGY WITH AN EXPLICIT ADDER TO ITS APPROVED  
3 RETURN?

4 A. No. Without accepting his premise that PEF has demonstrated superior  
5 performance, such a reward is inappropriate, unnecessary, and more than likely  
6 would be counterproductive, in that it would provide inappropriate incentives to  
7 PEF.

8 Q. WHY DO YOU SAY SUCH AN AWARD IS UNNECESSARY AND  
9 INAPPROPRIATE?

10 A. Because a regulated entity such as Progress Energy already benefits any time it  
11 succeeds in keeping costs down.

12

13 Q. PLEASE EXPLAIN HOW REGULATED COMPANIES BENEFIT BY  
14 KEEPING COSTS DOWN.

15 A. As Dr. Cicchetti notes on page 39 of his testimony, PEF has not had a base  
16 rate increase since 1993. This means it has been able to earn at least as much  
17 if not more than it perceived to be its cost of capital. This has provided a  
18 powerful incentive for PEF to keep costs down. Another incentive to keep  
19 costs down is that a company that keeps costs under better control is less  
20 likely to be penalized in a rate case for incurring imprudent expenses.

21

1 Q. WOULD PROVIDING A HIGHER RETURN ON CAPITAL HIGHER  
2 THAN THE COMPANY'S COST OF CAPITAL CREATE AN  
3 INCENTIVE FOR FURTHER COST CUTTING MEASURES?

4 A. No. The higher the return on capital, the more difficult it is for a company to  
5 be able to justify making an incremental investment that might be designed to  
6 reduce expenses.

7  
8 Q. IF THE BONUS RETURN WERE TO BE GRANTED, WOULD THIS  
9 PROVIDE AN INCENTIVE TO WORK HARDER FOR FUTURE  
10 PRODUCTIVITY GAINS?

11 A. No. If the requested bonus (that amounts to a cost to customers in excess of \$20  
12 million per year) were granted, the extra, unnecessary return would go to  
13 stockholders. It is the employees of PEF-- whose salaries are paid by ratepayers--  
14 - who implement the cost savings. To the extent PEF employees are paid  
15 bonuses or receive pay raises for good performance, ratepayers pay for this also.  
16 Therefore, any bonus return to investors would not only be duplicative, but  
17 would be paid to an entity that does not provide any cost savings.

18  
19 Q. IS THERE A REASON WHY THE COMMISSION SHOULD CONSIDER A  
20 RATE OF RETURN PENALTY INSTEAD OF A BONUS?

21 A. Yes. As stated previously, the capital structure and cost of equity requests in  
22 this case are extremely aggressive. Furthermore, the inflation of the common  
23 equity balance reported by PEF would make the earnings surveillance results



1 appear to show a lower actual return on equity than would be shown if a more  
2 realistic capital structure were maintained. These measures combine to show an  
3 overly strong desire on the part of management to take actions that are contrary  
4 to the best interests of ratepayers. While I have not made a specific proposal to  
5 lower the allowed return on equity to punish management for taking such an  
6 overly aggressive posture, the Commission would be far more justified to  
7 provide a penalty to the return on equity in this case than to provide the  
8 requested bonus.

9  
10 **XI. CONCLUSION**

11  
12 Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS IN THIS CASE.

13 A. PEF should be allowed an overall cost of capital of 6.65%. This is based upon a  
14 cost of equity of 9.10%. This cost of equity should be applied to a capital  
15 structure containing 41.8% common equity on a financial basis, which equates to  
16 38.32% on a Florida regulatory basis. The capital structure I have recommended  
17 is equal to the actual capital structure being used by Progress Energy consolidated  
18 and is very similar to the average capital structure of the comparative electric  
19 companies selected by Dr. Vander Weide for use in this proceeding. My  
20 recommended capital structure, not the one recommended by Dr. Vander Weide,  
21 is the capital structure the management of Progress Energy has found to be  
22 appropriate for its operations.

1           Use of the capital structure supported by Dr. Vander Weide and Mr.  
2           Portuondo to set rates would provide an incentive for the capital structure of PEF  
3           to stay effectively weaker than if my capital structure is used. This is because  
4           allowing the company to earn a return on the artificial PEF capital structure  
5           would enable the Company to over-earn on the equity actually provided by the  
6           Progress Energy stockholders. Since the consolidated capital structure has a huge  
7           influence on the bond ratings of PEF, providing an incentive for the consolidated  
8           Progress Energy to continue to maintain a capital structure with a debt load  
9           towards the weaker end of the BBB bond rating category is not in the best  
10          interests of PEF ratepayers, especially if PEF ratepayers are already paying the  
11          higher rates that would otherwise be sufficient for a stronger bond rating.

12          Instead of providing a disincentive, the Commission could provide an  
13          incentive for the Company to strengthen the consolidated capital structure of PEF  
14          by using the same capital structure management focuses on – the consolidated  
15          Progress Energy capital structure.

16          Finally, PEF's exaggeration of its true capital structure by making internal  
17          bookkeeping entries and other proposed adjustments combined with Dr. Vander  
18          Weide's adjustment to increase his otherwise more traditionally inflated cost of  
19          equity claim based on his market value capital structure adjustment must be  
20          recognized for what it is: an excessive request that should not be given any  
21          credence by the Commission.

22

1 In combination with OPC's other recommendations and adjustments, my  
2 recommendation will result in a fair return on PEF's investment—one that will  
3 preserve PEF's financial integrity and access to capital markets at the same time  
4 that it prevents subsidization of the parent in the form of excessive revenue  
5 requirements and eliminates any disincentive for the parent to address its capital  
6 structure needs.

7

8 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

9 A. Yes.

## **EXHIBIT INDEX**

JAR-1	Overall Cost of Capital
JAR-2	Cost of Equity
JAR-3	Financial Data on Comparative Companies
JAR-4	Comparative Companies Selected Financial Data
JAR-5	Discounted Cash Flow
JAR-6	Full Discounted Cash Flow (Electric)
JAR-7	Full Discounted Cash Flow (Gas)
JAR-8	External Financing Rate
JAR-9	Inflation Risk Premium Method
JAR-10	CAPM Method
JAR-11	Forecast v. Actual Interest Rates
JAR-12	Returns v. Beta
JAR-13	Geometric v. Arithmetic
JAR-14	Articles
JAR-15	Interrogatories/PODS
JAR-16	Testifying Experience of James A. Rothschild

**Overall Cost of Capital  
Based on Financial Capital Structures**

Recommended Position Based on Actual Consolidated Capital Structure					
	Ratios [A]	Cost Rate [B]	Weighted Cost Rate	Federal and State Tax Factor	Pre-tax Cost Rate
Long-term Debt	54.0%	5.73%	3.09%	1.00	3.09%
Short-term Debt	3.7%	4.04%	0.15%	1.00	0.15%
Preferred Stock	0.5%	4.58%	0.02%	1.632	0.04%
Common Equity	41.8%	9.10% [C]	3.80%	1.632	6.21%
	100.0%		7.07%		9.49%

Source: [A] Response to #112 from Citizen's 3rd set of interrogatories  
[B] MFR Schedule D-1a, with minority interest spread equally between Long-term Debt and Common Equity  
[C] with additional adjustments for percentage of common equity in the capital structure.

Federal and State Tax Factor from MFR C-44

Recommended Position based on Consolidated Target Capital Structure					
	Ratios [A]	Cost Rate [B]	Weighted Cost Rate [C]	Tax Factor	After-tax Cost Rate
Long-term Debt	51.30%	5.73%	2.94%	1.00	2.94%
Short-term Debt	3.70%	4.04%	0.15%	1.00	0.15%
Preferred Stock	0.50%	4.58%	0.02%	1.63	0.04%
Common Equity	44.50%	9.00% [C]	4.01%	1.63	6.54%
	100.0%		7.12%		9.66%

Source: [A] Response to #112 from Citizen's 3rd set of interrogatories  
[B] Response to #139 from Citizen's 3rd set of interrogatories  
[C] JAR 2 with additional adjustments for percentage of common equity in the capital structure.

Federal and State Tax Factor from MFR C-44

Company Requested Capital Structure					Federal Income Tax Factor	After-tax
	Ratios		Cost Rate	Weighted Cost Rate		Cost Rate
	[A] Amount	[B]	[A]		[D]	
Long-term Debt	1,520,653	35.74%	5.73% [A]	2.05%	1.00	2.05%
Short-term Debt	25,148	0.59%	4.04% [A]	0.02%	1.00	0.02%
Preferred Stock	25,044	0.59%	4.58% [A]	0.03%	1.63	0.04%
Common Equity	2,684,417	63.08%	12.80% [C]	8.07%	1.63	13.18%
	4,255,262	100.0%		10.17%		15.29%

Source: [A] Schedule D-1a from MFR  
[B] Ratio X Cost Rate  
[C] JAR 2 with additional adjustments for percentage of common equity in the capital structure.

Federal and State Tax Factor from MFR C-44

Schedule JAR 1, P. 2

**FINANCIAL AND RATEMAKING CAPITAL STRUCTURE**

**Capital Structure Requested by Company**

	Financial	Florida	Cost	Weighted	Factor	Pre-tax
AMOUNT	[A]	Rate	Rate	Cost		Cost Rate
		[A]	[A]			
Common Equity	2,684,417	2,684,417				
Preferred Equity	25,044	25,044				
Long Term Debt-Fixed	1,520,653	1,520,653				
Short Term Debt	25,148	25,148				
Customer Deposits		101,979				
ITC Equity		13,485				
ITC Debt		7,568				
Deferred Income Taxes		309,400				
FAS 109 DIT-Net		-46,088				
	<u>4,255,262</u>	<u>4,641,606</u>				
<b>PERCENTAGE</b>						
Common Equity	63.08%	57.83%	12.80% [A]	7.40%	1.63	12.07%
Preferred Equity	0.59%	0.54%	4.51% [A]	0.02%	1.63	0.04%
Long Term Debt-Fixed	35.74%	32.76%	5.73% [A]	1.88%	1	1.88%
Short Term Debt	0.59%	0.54%	4.04% [A]	0.02%	1	0.02%
Customer Deposits		2.20%	5.92% [A]	0.13%	1	0.13%
ITC Equity		0.29%	12.70% [A]	0.04%	1.63	0.06%
ITC Debt		0.16%	5.38% [A]	0.01%	1	0.01%
Deferred Income Taxes		6.67%	0.00% [A]	0.00%	1	0.00%
FAS 109 DIT-Net		-0.99%	0.00% [A]	0.00%	1	0.00%
	<u>100.00%</u>	<u>100.00%</u>		<u>9.50%</u>		<u>14.20%</u>

**Recommended Capital Structure**

AMOUNT			Cost Rate	Weighted		
				Cost		
Common Equity	1,778,700 [B]	1,778,700				
Preferred Equity	21,276 [B]	21,276				
Long Term Debt	2,297,841 [B]	2,297,841				
Short Term Debt	157,445 [B]	157,445				
Customer Deposits		101,979				
ITC Equity		13,485				
ITC Debt		7,568				
Deferred Income Taxes		309,400				
FAS 109 DIT-Net		-46,088				
	<u>4,255,262 [A]</u>	<u>4,641,606</u>				
<b>PERCENTAGE</b>						
Common Equity	41.80%	38.32%	9.10% [C]	3.49%	1.63	5.68%
Preferred Equity	0.50%	0.46%	4.58% [C]	0.02%	1.63	0.03%
Long Term Debt	54.00%	49.51%	5.73% [C]	2.84%	1	2.84%
Short Term Debt	3.70%	3.39%	4.04% [C]	0.14%	2	0.27%
Customer Deposits		2.20%	5.92% [A]	0.13%	1	0.13%
ITC Equity		0.29%	9.10%	0.03%	1.63	0.04%
ITC Debt		0.16%	5.73%	0.01%	1	0.01%
Deferred Income Taxes		6.67%	0%	0.00%	1	0.00%
FAS 109 DIT-Net		-0.99%	0%	0.00%	1	0.00%
	<u>100.00%</u>	<u>100.00%</u>		<u>6.65%</u>		<u>9.01%</u>

Source

[A] MFR Schedule D-1a

[B] Total Financial Capitalization x percentages per recommended position on  
JAR 1 Page 1

[C] JAR 1 Page 1

**Progress Energy  
Balance Sheet Comparison**

	<b>Progress Energy Consolidated</b>	<b>Progress Energy Florida</b>	<b>Progress Energy Carolina</b>	<b>Progress Energy Consolidated Net of Progress Energy Florida and Progress Energy Carolina</b>
Common Equity	7,633	2,321	3,072	2,240
Preferred Equity	93	34	59	0
Minority Interest	36	0	0	36
LT Debt Affiliate	270	0	0	270
LT Debt Net	9,256	1,912	2,750	4,594
Current Portion of LTD	349	48	300	1
Short-term Obligations	684	293	337	54
Notes Payable to Affiliates	0	178	0	-178
Total	<u>18,321</u>	<u>4,786</u>	<u>6,518</u>	<u>7,017</u>
Percent Common Equity	<u>41.7%</u>	<u>48.5%</u>	<u>47.1%</u>	<u>31.9%</u>

Source:

Progress Energy Consolidated from page 85 of 10K  
Progress Energy Florida from page 46 of 10K  
Progress Energy Carolina from Page 40 of 10k

### Revenue Requirement Impact of Cost of Capital

	Amount (Dollars in Millions)	Source
1 Company Requested Rate Base	\$4,640.5	Page 5 of the testimony of Mr. Portuondo
2 Pre-tax cost of Capital as Requested by Company	14.20%	Schedule JAR 1, P. 2
3 Recommended Pre-tax Cost of Capital	<u>9.01%</u>	Schedule JAR 1, P. 2
4 Difference between Requested and Recommended	5.19%	Line 2-Line 3
5 Difference in Revenue Requirement due to Corrections in Company's Requested Cost of Capital	\$241.0	Line 4 x Line 1
6 Company Requested Rate Increase	\$205.6	Page 5 of the testimony of Mr. Portuondo
7 Rate Change of only Cost of Capital Request Corrected	<u><u>(\$35.4)</u></u>	Line 6 - Line 7



**Progress Energy Florida  
COST OF EQUITY SUMMARY**

**SIMPLIFIED, OR CONSTANT GROWTH DCF (D/P +g) RESULTS:**

Based upon Electric Companies  
Based upon Gas Companies

**Average for Year  
ending 4/30/05**

8.60% [A]  
8.32% [B]  
8.46%

**As of  
4/30/2005**

8.73% [A]  
8.25% [B]  
8.49%

**COMPLEX, OR MULTI-STAGE DCF RESULT:**

Based upon Electric Companies  
Based upon Gas Companies

9.34% [C]  
9.85% [E]  
9.60%

9.35% [D]  
9.78% [F]  
9.56%

**Risk Premium/CAPM**

**Low end of Range**

**High end of Range**

Average Risk Equity Return Based upon Average Return over inflation  
In all major sub-periods from 1802 through 2001  
(Major sub-periods are 1802-1870, 1871-1925, and 1926-2001)

9.60% [C]

10.00% [G]

Based upon analysis of historic returns from 1926-2004:

Adjusted for Electric Specific Risk  
Results for Equity of Average Risk

7.80% [H]

8.56% [H]

Average

8.70%

9.26%

Recommended Equity Cost Rate	9.00%
Adjustment for Capital Structure	0.10%
Recommended cost of equity	9.10%

**Source:**

- [A] JAR 5, Page 1
- [B] JAR 5, Page 2
- [C] JAR 6, Page 2
- [D] JAR 6, Page 1
- [E] JAR 7, Page 2
- [F] JAR 7, Page 1
- [G] JAR 9
- [H] JAR 10, Page 1

Used premium based upon corporate bonds to be conservatively high.

**Electric Companies**

	% Common Equity					Average Without Short Term Debt
	2000	2001	2002	2003	VL Est. 2004	
Alliant Energy	50.20%	42.70%	39.20%	50.00%	50.50%	46.52%
Ameren Corp.	51.80%	52.20%	51.40%	50.60%	53.00%	51.80%
Cinergy	48.20%	42.80%	42.50%	46.90%	49.00%	45.84%
Consol. Edison	49.10%	49.60%	48.10%	48.00%	51.00%	49.16%
Constellation Energy Group	48.50%	57.00%	44.60%	44.20%	48.60%	48.58%
Dominion Resources	38.90%	38.00%	42.70%	39.70%	42.00%	40.26%
DTE	49.70%	36.70%	37.00%	40.80%	42.80%	41.40%
Duke	44.20%	47.60%	40.70%	39.80%	49.10%	44.28%
Energy East	41.80%	38.40%	39.20%	38.50%	40.50%	39.68%
Entergy Corp.	45.60%	48.60%	50.60%	53.20%	53.00%	50.20%
FirstEnergy Corp	41.50%	37.20%	38.00%	45.00%	45.60%	41.46%
FPL Group	57.10%	54.20%	51.50%	44.40%	48.50%	51.14%
Great Plains Energy	42.80%	44.60%	44.70%	44.40%	53.40%	45.98%
Hawaiian Elec.	39.90%	41.60%	46.50%	49.80%	52.00%	45.96%
MDU Resources	54.20%	58.10%	60.60%	60.10%	64.50%	59.50%
Northeast Utilities	48.80%	32.40%	33.90%	34.30%	34.00%	36.68%
NSTAR	39.40%	39.50%	37.80%	40.20%	40.00%	39.38%
OGE Energy	39.20%	40.50%	39.60%	45.60%	47.40%	42.46%
Pepco Holdings	41.00%	41.00%	36.40%	35.60%	41.00%	39.00%
Pinnacle West Capital	54.90%	48.30%	48.20%	49.40%	50.00%	50.16%
PPL Corp.	29.50%	23.70%	25.10%	28.50%	37.90%	28.94%
Progress Energy	47.60%	38.50%	40.40%	43.40%	44.50%	42.88%
Puget Energy Inc.	37.40%	34.90%	37.40%	42.40%	42.50%	38.92%
SCANA Corp.	40.30%	43.80%	42.10%	40.80%	42.60%	41.92%
Sempra Energy	40.40%	41.20%	38.60%	49.20%	52.00%	44.28%
Southern Co.	50.60%	42.20%	43.40%	43.60%	44.00%	44.76%
Vectren	53.00%	45.50%	47.70%	50.00%	50.50%	49.34%
Wisconsin Energy	40.50%	37.20%	39.60%	39.60%	43.30%	40.04%
WPS Resources	41.60%	46.30%	45.80%	52.10%	51.50%	47.46%
Xcel Energy Inc.	40.50%	32.80%	39.50%	43.80%	44.50%	40.22%
<b>Average</b>	<b>44.9%</b>	<b>42.6%</b>	<b>42.4%</b>	<b>44.5%</b>	<b>47.0%</b>	<b>44.3%</b>

**Gas Companies**

AGL Resources	48.3%	38.7%	41.7%	49.7%	46.0%	44.88%
Atmos Energy	51.9%	45.7%	46.1%	49.8%	56.8%	50.06%
Equitable Resources					48.6%	48.63%
Keyspan Corp.	39.2%	37.7%	35.7%	39.1%	46.5%	39.64%
New Jersey Resources	52.9%	49.9%	49.4%	61.9%	59.7%	54.76%
Nicor, Inc.	66.7%	61.7%	64.5%	60.3%	60.1%	62.66%
N.W. Natural Gas	50.9%	53.2%	51.5%	50.3%	54.0%	51.98%
Oneok Inc.					51.0%	50.98%
Peoples Energy	64.9%	55.6%	59.3%	53.3%	49.2%	56.46%
Piedmont Natural Gas	53.9%	52.4%	56.1%	57.8%	56.4%	55.32%
Questar	58.1%	52.0%	49.9%	57.0%	61.5%	55.70%
Southwest Gas	35.8%	39.6%	34.1%	34.0%	35.0%	35.70%
WGL Holdings	54.8%	56.3%	52.4%	54.3%	57.2%	55.00%
<b>Average</b>	<b>52.5%</b>	<b>49.3%</b>	<b>49.2%</b>	<b>51.6%</b>	<b>52.5%</b>	<b>50.9%</b>

Source: Most Current Value Line at Time of Preparation

	Quantity					Percentage				
Electric Companies	LT Debt	ST Debt	Pfd Stock	Equity	Total Capital	LT Debt	ST Debt	Pfd Stock	Equity Ratio With ST Debt	
	(\$000,000s) Total Debt	[A]	[B]	[A]	[C]	[D]	[E]	[E]	[E]	[E]
Alliant Energy	\$ 2,349.7	\$ 2,237.6	\$ 112.1	\$ 243.8	\$ 2,531.5	\$ 5,125.0	43.7%	2.2%	4.8%	49.4%
Ameren Corp.	\$ 6,458.0	\$ 6,164.0	\$ 294.0	\$ 216.0	\$ 7,194.5	\$ 13,868.5	44.4%	2.1%	1.6%	51.9%
Cinergy	\$ 5,186.8	\$ 4,227.7	\$ 959.1	\$ 62.8	\$ 4,122.2	\$ 9,371.8	45.1%	10.2%	0.7%	44.0%
Const. Edison	\$ 7,211.0	\$ 6,919.0	\$ 292.0	\$ 212.6	\$ 7,422.7	\$ 14,846.3	46.6%	2.0%	1.4%	50.0%
Constellation Energy	\$ 5,293.6	\$ 4,813.2	\$ 480.4	\$ 190.0	\$ 4,730.7	\$ 10,214.3	47.1%	4.7%	1.9%	46.3%
Dominion Resources	\$ 17,273.0	\$ 15,164.0	\$ 2,109.0	\$ 257.0	\$ 11,166.9	\$ 28,696.9	52.8%	7.3%	0.9%	38.9%
DTE	\$ 8,619.0	\$ 7,627.0	\$ 992.0	\$ -	\$ 5,706.9	\$ 14,325.9	53.2%	6.9%	0.0%	39.8%
Duke	\$ 20,653.0	\$ 17,101.0	\$ 3,552.0	\$ 134.0	\$ 16,625.5	\$ 37,412.5	45.7%	9.5%	0.4%	44.4%
Energy East	\$ 3,863.4	\$ 3,981.8	\$ (118.4)	\$ 46.7	\$ 2,742.1	\$ 6,652.2	59.9%	-1.8%	0.7%	41.2%
Entergy Corp.	\$ 7,759.4	\$ 7,219.6	\$ 539.8	\$ 352.9	\$ 8,539.2	\$ 16,651.5	43.4%	3.2%	2.1%	51.3%
FirstEnergy Corp	\$ 11,089.0	\$ 10,111.0	\$ 978.0	\$ 335.1	\$ 8,756.3	\$ 20,180.4	50.1%	4.8%	1.7%	43.4%
FPL Group	\$ 9,720.0	\$ 8,551.0	\$ 1,169.0	\$ 5.0	\$ 8,057.6	\$ 17,782.6	48.1%	6.6%	0.0%	45.3%
GT Plains Energy	\$ 1,315.6	\$ 956.5	\$ 359.1	\$ 39.0	\$ 1,140.8	\$ 2,495.4	38.3%	14.4%	1.6%	45.7%
Hawaiian Elec.	\$ 1,175.5	\$ 1,130.0	\$ 45.5	\$ 34.4	\$ 1,261.4	\$ 2,471.3	45.7%	1.8%	1.4%	51.0%
MDU Resources	\$ 999.2	\$ 912.4	\$ 86.8	\$ 15.0	\$ 1,685.0	\$ 2,699.2	33.8%	3.2%	0.6%	62.4%
Northeast Utilities	\$ 4,607.0	\$ 4,337.0	\$ 270.0	\$ 116.2	\$ 2,294.1	\$ 7,017.3	61.8%	3.8%	1.7%	32.7%
NSTAR	\$ 2,395.0	\$ 2,207.9	\$ 187.1	\$ 43.0	\$ 1,500.6	\$ 3,938.6	56.1%	4.8%	1.1%	38.1%
OGE Energy	\$ 1,585.4	\$ 1,424.1	\$ 161.3	\$ -	\$ 1,283.3	\$ 2,868.7	49.6%	5.6%	0.0%	44.7%
Pepco Holdings	\$ 6,607.1	\$ 4,858.0	\$ 1,749.1	\$ 101.6	\$ 3,446.5	\$ 10,155.2	47.8%	17.2%	1.0%	33.9%
Pinnacle West Capital	\$ 3,293.3	\$ 2,632.1	\$ 661.2	\$ -	\$ 2,632.1	\$ 5,925.4	44.4%	11.2%	0.0%	44.4%
PPL Corp.	\$ 7,860.0	\$ 6,913.0	\$ 947.0	\$ 51.0	\$ 4,250.2	\$ 12,161.2	56.8%	7.8%	0.4%	34.9%
Progress Energy	\$ 9,902.0	\$ 9,554.0	\$ 348.0	\$ 92.8	\$ 7,734.8	\$ 17,729.6	53.9%	2.0%	0.5%	43.6%
Puget Energy Inc.	\$ 2,613.1	\$ 2,498.3	\$ 114.8	\$ 1.9	\$ 1,848.0	\$ 4,463.0	56.0%	2.6%	0.0%	41.4%
SCANA Corp.	\$ 3,627.0	\$ 3,185.0	\$ 442.0	\$ 115.0	\$ 2,449.1	\$ 6,191.1	51.4%	7.1%	1.9%	39.6%
Sempra Energy	\$ 4,948.0	\$ 4,419.0	\$ 529.0	\$ 179.0	\$ 4,981.2	\$ 10,108.2	43.7%	5.2%	1.8%	49.3%
Southern Co.	\$ 13,520.0	\$ 12,707.0	\$ 813.0	\$ 569.7	\$ 10,431.7	\$ 24,521.4	51.8%	3.3%	2.3%	42.5%
Vectren	\$ 1,398.9	\$ 1,065.0	\$ 333.9	\$ 0.1	\$ 1,086.6	\$ 2,485.6	42.8%	13.4%	0.0%	43.7%
Wisconsin Energy	\$ 3,678.5	\$ 3,239.5	\$ 439.0	\$ 30.4	\$ 2,497.1	\$ 6,206.0	52.2%	7.1%	0.5%	40.2%
WPS Resources	\$ 1,018.7	\$ 868.8	\$ 149.9	\$ 51.1	\$ 976.8	\$ 2,046.6	42.5%	7.3%	2.5%	47.7%
Xcel Energy Inc.	\$ 6,790.4	\$ 6,697.8	\$ 92.6	\$ 104.3	\$ 5,453.9	\$ 12,348.6	54.2%	0.7%	0.8%	44.2%
	\$ 6,094	\$ 5,457	\$ 636	\$ 120	\$ 4,818	\$ 11,032	48.77%	5.88%	1.14%	44.21%
					Median		47.96%	5.04%	0.95%	44.08%
<b>Gas Companies</b>										
AGL Resources	\$ 1,957.0	\$ 1,623.0	\$ 334.0	\$ -	\$ 1,382.6	\$ 3,339.6	48.6%	10.0%	0.0%	41.4%
Atmos Energy	\$ 2,289.9	\$ 2,255.2	\$ 34.7	\$ -	\$ 2,965.2	\$ 5,255.1	42.9%	0.7%	0.0%	56.4%
Equitable Res	\$ 923.9	\$ 617.8	\$ 306.1	\$ -	\$ 584.9	\$ 1,508.8	40.9%	20.3%	0.0%	38.8%
Keyspan Corp.	\$ 5,010.0	\$ 4,420.0	\$ 590.0	\$ 75.0	\$ 3,906.9	\$ 8,991.9	49.2%	6.6%	0.8%	43.4%
New Jersey Resources	\$ 613.0	\$ 319.9	\$ 293.1	\$ -	\$ 473.9	\$ 1,086.9	29.4%	27.0%	0.0%	43.6%
Nicor, Inc.	\$ 985.5	\$ 495.3	\$ 490.2	\$ 1.8	\$ 748.8	\$ 1,736.1	28.5%	28.2%	0.1%	43.1%
N.W. Natural Gas	\$ 582.6	\$ 484.9	\$ 97.7	\$ -	\$ 569.2	\$ 1,151.8	42.1%	8.5%	0.0%	49.4%
Oneok Inc.	\$ 2,528.7	\$ 1,543.2	\$ 985.5	\$ -	\$ 1,605.0	\$ 4,133.7	37.3%	23.8%	0.0%	38.8%
Peoples Energy	\$ 1,069.2	\$ 897.2	\$ 172.0	\$ -	\$ 868.9	\$ 1,938.1	46.3%	8.9%	0.0%	44.8%
Piedmont Natural Gas	\$ 769.5	\$ 660.0	\$ 109.5	\$ -	\$ 853.8	\$ 1,623.3	40.7%	6.7%	0.0%	52.6%
Questar	\$ 995.5	\$ 933.2	\$ 62.3	\$ -	\$ 1,490.7	\$ 2,486.2	37.5%	2.5%	0.0%	60.0%
Southwest Gas	\$ 1,333.6	\$ 1,264.7	\$ 68.9	\$ -	\$ 681.0	\$ 2,014.6	62.8%	3.4%	0.0%	33.8%
WGL Holdings	\$ 794.9	\$ 573.7	\$ 221.2	\$ 28.2	\$ 804.4	\$ 1,627.5	35.3%	13.6%	1.7%	49.4%
	\$ 1,527	\$ 1,238	\$ 290	\$ 8	\$ 1,303	\$ 2,838	41.66%	12.32%	0.21%	45.82%
					Median		40.95%	8.87%	0.00%	43.60%

[A] Source: Most Current Value Line at Time of Preparation

[B] Total Debt Minus Long-Term Debt

[C] The amount of equity was calculated by using the following information provided by Value Line:

%E: % of equity in the capital structure without short-term debt

LT: Amount of Long-Term Debt in the Capital Structure

PS: Amount of Preferred Stock in the Capital Structure

We know the % of equity provided by value line can be expressed algebraically:

Note: E is defined as the amount of equity in the Capital Structure

Step 1:  $E = (\%E) \times (E + LT + PS)$

Step 2:  $E = \%E \times E + \%E \times LT + \%E \times PS$

Step 3:  $E - \%E \times E = \%E \times LT + \%E \times PS$

Step 4:  $E - \%E \times E = \%E \times (LT + PS)$

Step 5:  $E \times (1 - \%E) = \%E \times (LT + PS)$

Step 6:  $E = \%E \times (LT + PS) / (1 - \%E)$

Therefore we are able to solve for the amount of equity in the capital structure with the information provided by Value Line. As the formula in Step 6 shows, the amount of equity is equal to the % of equity in the capital structure without short-term debt times the sum of Long-term debt and Preferred Stock all divided by 1 minus the % of equity in the capital structure.

[D] Sum of Long-Term Debt, Short-Term Debt, Preferred Stock and Equity

[E] Quantities in columns L through O Divided by Total Capital in Column P

COMPARATIVE COMPANIES SELECTED FINANCIAL DATA												JAR 4, Page 1		
	[1] Book Per Sh. Dec. 01	[2] Book Per Sh. Dec. 02	[3] Book Per Sh. Dec. 03	[4] Book Per Sh. Dec. 04 VL Est.	[5] At 04/30/05	[6] Market High for Year	[7] Price Low for Year	[8] Market to Book At 04/30/05	[9] Avg. for Year	[10] Div. Rate [A]	[11] Dividend Yield At 4/30/2005	[12] Avg. for Year		
VL Issue	Dec. 01	[A]	[A]	[A]	[B]	[B]	[B]	[C]	[C]		[D]	[D]		
Electric Utilities Selected by Company Witness														
Alliant Energy	5	\$21.39	\$19.89	\$21.37	\$22.35	\$26.34	\$28.80	\$23.50	1.18	1.20	\$1.06	4.02%	4.05%	
Ameren Corp.	5	\$24.26	\$24.93	\$26.73	\$30.15	\$51.70	\$52.00	\$40.55	1.71	1.63	\$2.54	4.91%	5.49%	
Cinergy	5	\$18.45	\$19.53	\$20.74	\$21.95	\$39.60	\$42.63	\$34.92	1.80	1.82	\$1.92	4.85%	4.95%	
Const. Edison	1	\$26.71	\$27.68	\$28.44	\$29.30	\$43.28	\$45.59	\$37.23	1.48	1.43	\$2.28	5.27%	5.51%	
Constellation Energy	1	\$23.48	\$23.43	\$24.67	\$28.86	\$52.56	\$54.85	\$35.89	1.82	1.70	\$1.34	2.55%	2.95%	
Dominion Resources	1	\$31.61	\$33.15	\$32.42	\$34.10	\$75.40	\$76.87	\$61.26	2.21	2.08	\$2.68	3.55%	3.88%	
DTE	5	\$28.48	\$27.26	\$31.36	\$31.85	\$45.95	\$46.99	\$37.88	1.44	1.34	\$2.06	4.48%	4.85%	
Duke	1	\$16.33	\$16.70	\$15.09	\$17.20	\$29.19	\$29.21	\$18.85	1.70	1.49	\$1.10	3.77%	4.58%	
Energy East	1	\$15.26	\$16.97	\$17.59	\$18.30	\$26.02	\$27.08	\$21.85	1.42	1.36	\$1.10	4.23%	4.50%	
Entergy Corp.	5	\$33.78	\$35.24	\$36.02	\$38.30	\$73.30	\$76.60	\$50.64	1.91	1.67	\$2.16	2.95%	3.40%	
FirstEnergy Corp	1	\$24.86	\$23.92	\$25.13	\$26.05	\$43.52	\$43.66	\$36.73	1.67	1.57	\$1.65	3.80%	4.11%	
FPL Group	1	\$17.10	\$17.48	\$18.91	\$20.20	\$40.82	\$42.75	\$38.70	2.02	3.11	\$1.42	3.48%	2.34%	
GT Plains Energy	5	\$12.59	\$13.58	\$13.82	\$15.35	\$30.58	\$32.05	\$27.86	1.99	2.05	\$1.86	5.43%	5.54%	
Hawaiian Elec.	11	\$13.06	\$14.21	\$14.36	\$14.80	\$25.30	\$50.80	\$24.40	1.71	2.57	\$1.24	4.90%	3.31%	
MDU Resources	11	\$10.60	\$11.56	\$12.66	\$14.09	\$27.03	\$28.50	\$21.85	1.92	1.88	\$0.72	2.66%	2.86%	
Northeast Utilities	1	\$16.27	\$17.33	\$17.73	\$17.82	\$18.31	\$20.09	\$17.17	1.03	1.05	\$0.65	3.55%	3.49%	
NSTAR	1	\$23.81	\$24.50	\$25.67	\$27.05	\$54.14	\$59.35	\$45.30	2.00	1.99	\$2.32	4.29%	4.43%	
OGE Energy	5	\$13.34	\$12.53	\$13.75	\$14.28	\$27.60	\$27.60	\$22.85	1.93	1.80	\$1.33	4.83%	5.28%	
Pepco Holdings	1	\$18.41	\$18.17	\$17.48	\$17.95	\$21.67	\$23.25	\$16.94	1.21	1.13	\$1.00	4.61%	4.98%	
Pinnacle West Capital	11	\$29.46	\$29.44	\$31.00	\$31.65	\$41.90	\$46.84	\$36.30	1.32	1.31	\$1.90	4.53%	4.63%	
PPL Corp.	1	\$12.67	\$13.42	\$18.37	\$22.42	\$54.26	\$55.90	\$39.83	2.42	2.35	\$1.84	3.39%	3.84%	
Progress Energy	1	\$27.45	\$28.73	\$30.26	\$31.05	\$41.99	\$46.10	\$40.47	1.35	1.41	\$2.38	5.62%	5.45%	
Puget Energy Inc.	11	\$15.66	\$16.27	\$16.71	\$16.95	\$21.44	\$24.81	\$20.51	1.26	1.35	\$1.00	4.88%	4.41%	
SCANA Corp.	1	\$20.95	\$19.64	\$20.82	\$21.80	\$36.84	\$40.04	\$32.82	1.78	1.71	\$1.56	4.02%	4.28%	
Sempra Energy	11	\$13.17	\$13.79	\$17.17	\$19.60	\$40.38	\$42.54	\$30.80	2.06	1.99	\$1.00	2.48%	2.73%	
Southern Co.	1	\$11.42	\$12.15	\$13.13	\$13.75	\$32.95	\$34.34	\$27.44	2.40	2.30	\$1.43	4.35%	4.64%	
Vectren	5	\$12.53	\$12.79	\$14.18	\$14.45	\$27.01	\$27.95	\$22.86	1.87	1.77	\$1.18	4.37%	4.84%	
Wisconsin Energy	5	\$17.81	\$18.44	\$19.92	\$21.31	\$35.26	\$36.12	\$29.50	1.85	1.59	\$0.88	2.50%	2.68%	
WPS Resources	5	\$22.96	\$24.45	\$27.18	\$29.00	\$52.73	\$54.90	\$43.50	1.82	1.75	\$2.22	4.21%	4.51%	
Xcel Energy Inc.	11	\$17.95	\$11.70	\$12.96	\$13.10	\$17.18	\$18.78	\$15.46	1.31	1.32	\$0.83	4.84%	4.86%	
AVERAGE		\$19.73	\$19.96	\$21.25	\$22.50	\$38.54	\$42.53	\$31.80	1.71	1.72	\$1.55	4.10%	4.24%	
MEDIAN									1.75	1.68		4.26%	4.47%	
Gas Distribution Companies Selected by Company Witness														
AGL Resources	3	\$12.19	\$12.52	\$14.66	\$18.06	\$34.80	\$36.09	\$26.50	1.92	1.91	\$1.24	3.58%	3.96%	
Atmos Energy	3	\$14.31	\$13.75	\$16.66	\$18.05	\$26.30	\$29.15	\$23.40	1.46	1.51	\$1.24	4.71%	4.72%	
Equitable Res	3	\$13.25	\$12.49	\$15.48	\$14.33	\$57.64	\$60.46	\$45.16	4.02	3.54	\$1.52	2.64%	2.88%	
Keyspan Corp.	3	\$20.73	\$20.67	\$22.94	\$24.90	\$37.93	\$41.53	\$33.87	1.52	1.58	\$1.82	4.80%	4.83%	
New Jersey Resources	3	\$13.20	\$13.06	\$15.38	\$16.87	\$43.36	\$45.50	\$36.50	2.57	2.54	\$1.36	3.14%	3.32%	
Niحر, Inc.	3	\$16.39	\$16.55	\$17.13	\$16.99	\$36.97	\$39.95	\$32.04	2.18	2.10	\$1.66	5.03%	5.19%	
N.W. Natural Gas	3	\$18.96	\$18.86	\$19.52	\$20.65	\$35.50	\$37.24	\$27.46	1.72	1.61	\$1.30	3.06%	4.02%	
Oneok Inc.	3	\$21.08	\$22.47	\$13.04	\$15.30	\$28.86	\$31.70	\$19.69	1.89	1.81	\$1.00	3.47%	3.89%	
Peoples Energy	3	\$22.76	\$22.74	\$23.11	\$23.06	\$36.60	\$45.38	\$38.50	1.72	1.82	\$2.18	5.51%	5.20%	
Piedmont Natural Gas	3	\$8.63	\$8.91	\$9.36	\$11.15	\$22.95	\$24.44	\$19.16	2.06	2.13	\$0.92	4.01%	4.22%	
Questar	3	\$13.26	\$13.88	\$15.08	\$17.10	\$58.40	\$62.75	\$34.26	3.42	3.01	\$0.86	1.47%	1.77%	
Southwest Gas	3	\$17.27	\$17.91	\$18.42	\$18.85	\$24.47	\$26.15	\$21.50	1.30	1.28	\$0.82	3.35%	3.44%	
WGL Holdings	3	\$16.24	\$15.78	\$16.25	\$16.95	\$30.31	\$31.97	\$26.66	1.79	1.77	\$1.30	4.29%	4.43%	
AVERAGE		\$15.99	\$16.12	\$16.69	\$17.87	\$36.68	\$39.39	\$29.59	2.12	2.05	\$1.34	3.82%	3.98%	
MEDIAN									1.89	1.82		3.66%	4.02%	

e= Estimated by Value Line

Sources: [A] Most current Value Line at time of prep. of schedule.  
 [B] Yahoo Finance -- Historical Prices  
 [C] Market price divided by book value  
 [D] Dividend rate divided by market price

COMPARATIVE COMPANIES  
EARNINGS PER SHARE AND RETURN ON EQUITY

[1] EPS 2002	[2] EPS 2003	[3] EPS 2004	[4] Return on Eq. 2003	[5] Return on Eq. 2004	[6] Value Line Future Exp. 2003	[7] Return on Equity 2002
\$1.18	\$1.57	\$1.85	7.61%	8.46%	8.00%	5.72%
\$2.66	\$3.14	\$2.84	12.16%	9.99%	9.00%	10.82%
\$2.22	\$2.18	\$2.55	12.07%	10.21%	11.00%	11.51%
\$2.28	\$2.76	\$3.19	14.00%	14.00%	9.00%	9.76%
\$2.28	\$2.76	\$3.19	14.00%	14.00%	9.00%	9.76%
\$4.82	\$3.91	\$4.26	12.50%	12.50%	11.93%	14.89%
\$3.83	\$2.85	\$2.55	9.72%	8.07%	12.00%	13.74%
\$1.47	\$0.92	\$1.37	5.79%	4.49%	10.50%	8.90%
\$1.50	\$1.43	\$1.62	8.28%	9.03%	10.00%	9.31%
\$2.68	\$2.89	\$2.74	10.07%	9.80%	11.00%	10.68%
\$2.54	\$1.47	\$2.77	10.82%	11.50%	11.50%	10.41%
\$2.01	\$2.45	\$2.46	13.47%	12.68%	11.00%	11.63%
\$2.04	\$2.27	\$2.46	16.57%	16.87%	12.00%	15.59%
\$1.62	\$1.68	\$1.50	11.06%	10.29%	11.50%	11.88%
\$1.23	\$1.82	\$1.80	13.38%	13.46%	11.00%	11.10%
\$1.08	\$1.24	\$0.98	7.07%	5.51%	9.00%	6.43%
\$3.38	\$3.50	\$3.51	13.95%	13.22%	12.50%	13.98%
\$1.43	\$1.73	\$1.78	13.17%	12.70%	12.50%	11.06%
\$1.79	\$1.35	\$1.60	7.57%	9.03%	11.00%	9.79%
\$2.53	\$2.52	\$2.58	8.34%	8.24%	9.00%	8.59%
\$3.07	\$3.68	\$3.71	23.15%	18.19%	14.50%	23.53%
\$3.84	\$3.41	\$3.00	11.56%	9.79%	9.00%	13.67%
\$1.24	\$1.25	\$1.25	7.40%	7.43%	9.50%	7.77%
\$2.38	\$2.50	\$2.67	12.36%	12.53%	11.00%	11.73%
\$2.79	\$3.01	\$3.35	18.44%	18.22%	12.50%	20.70%
\$1.85	\$1.97	\$2.04	15.58%	15.18%	13.50%	16.70%
\$1.68	\$1.56	\$1.44	11.57%	10.06%	11.50%	13.27%
\$2.32	\$2.26	\$1.85	11.78%	8.97%	9.50%	12.80%
\$2.74	\$2.76	\$4.07	10.69%	14.49%	11.50%	11.56%
\$0.42	\$1.23	\$1.27	8.98%	9.79%	10.00%	2.83%
\$2.29	\$2.30	\$2.41	11.44%	11.17%	11.02%	11.70%
\$2.29	\$2.30	\$2.41	11.44%	11.17%	11.02%	11.70%

Gas Distribution Companies Selected by Company Witness

AGL Resources  
Amos Energy  
Equilibria Res  
Keyspan Corp.  
New Jersey Resources  
Nicol, Inc.  
N.Y. Natural Gas  
Onhook Inc.  
Peoples Energy  
Piedmont Natural Gas  
Questar  
Southwest Gas  
WGL Holdings

[A] Most current Value Line at time of prep. of schedule.  
[B] Earnings Per Share divided by average book value. Book value shown on JAR 4, Page 1

Source:

e= Estimated by Value Line

RETURN ON EQUITY IMPLIED IN  
YAHOO FINANCE COVERING BROKER'S GROWTH RATES

JAR 4, Page 3

TABLE FINANCE COVERING BROKER'S GROWTH RATES										VALUE
	Dec. 04 Y/E Book [3]	Earnings 2004 [A]	Dividends [A]	Analyst 5 Year Growth Rate 5/1/2005 [B]	Y/E Book in 2008 at Zack's Growth [C]	Y/E Book in 2009 at Zack's Growth [C]	Earnings 2009 at Zack's Growth [C]	Return on Equity to achieve Analysts' Growth [C]	LINE BETA [A]	
<b>Electric Utilities Selected by Company Witness</b>										
Alliant Energy	LNT	\$22.35	\$1.85	\$1.06	4.00%	\$25.84	\$26.80	\$2.25	8.55%	0.80
Ameren Corp.	AEE	\$30.15	\$2.84	\$2.54	3.90%	\$31.47	\$31.83	\$3.44	10.86%	0.75
Cinergy	CIN	\$21.95	\$2.18	\$1.92	4.60%	\$23.12	\$23.44	\$2.73	11.73%	0.85
Consol. Edison	ED	\$29.30	\$2.55	\$2.28	3.00%	\$30.46	\$30.78	\$2.96	9.65%	0.60
Constellation Energy	CEG	\$28.86	\$3.19	\$1.34	9.40%	\$38.17	\$41.07	\$5.00	12.62%	0.90
Dominion Resources	D	\$34.10	\$4.26	\$2.68	6.40%	\$41.50	\$43.65	\$5.81	13.64%	0.85
DTE	DTE	\$31.85	\$2.55	\$2.06	4.00%	\$34.01	\$34.61	\$3.10	9.04%	0.70
Duke	DUK	\$17.20	\$1.37	\$1.10	5.30%	\$18.43	\$18.78	\$1.77	9.53%	1.10
Energy East	EAS	\$18.30	\$1.62	\$1.10	5.00%	\$20.65	\$21.32	\$2.07	9.85%	0.85
Entergy Corp.	ETR	\$38.30	\$3.74	\$2.16	7.00%	\$45.81	\$48.02	\$5.25	11.18%	0.75
FirstEnergy Corp.	FE	\$28.05	\$2.77	\$1.65	4.10%	\$31.00	\$32.37	\$3.39	10.69%	0.75
FPL Group	FPL	\$20.20	\$2.46	\$1.42	5.40%	\$24.95	\$26.31	\$3.20	12.49%	0.70
GT Plains Energy	GXP	\$15.35	\$2.45	\$1.66	3.20%	\$18.61	\$19.75	\$2.88	14.93%	0.80
Hawaiian Elec.	HE	\$14.80	\$1.50	\$1.24	3.50%	\$15.93	\$16.24	\$1.78	11.07%	0.65
MDU Resources	MDU	\$14.09	\$1.80	\$0.72	7.60%	\$19.30	\$20.85	\$2.60	12.93%	0.85
Northeast Utilities	NU	\$17.82	\$0.98	\$0.85	4.50%	\$19.30	\$19.71	\$1.22	6.26%	0.75
NSTAR	NST	\$27.05	\$3.51	\$2.32	4.80%	\$32.41	\$33.91	\$4.44	13.38%	0.70
OGE Energy	OGE	\$14.28	\$1.78	\$1.33	3.50%	\$16.23	\$16.77	\$2.11	12.81%	0.70
Pepco Holdings	POH	\$17.95	\$1.60	\$1.00	4.50%	\$20.63	\$21.38	\$1.99	9.49%	0.85
Pinnacle West Capital	PNW	\$31.65	\$2.58	\$1.90	5.20%	\$34.74	\$35.62	\$3.32	9.45%	0.85
PPL Corp.	PPL	\$22.42	\$3.71	\$1.84	5.60%	\$31.01	\$33.46	\$4.87	15.11%	0.95
Progress Energy	PGN	\$31.05	\$3.00	\$2.36	3.80%	\$33.86	\$34.63	\$3.61	10.56%	0.80
Puget Energy Inc.	PSD	\$16.95	\$1.25	\$1.00	5.00%	\$18.08	\$18.40	\$1.60	8.75%	0.75
SCANA Corp.	SCG	\$21.80	\$2.67	\$1.56	4.50%	\$26.76	\$28.15	\$3.33	12.12%	0.75
Sempra Energy	SRE	\$19.80	\$3.35	\$1.00	5.40%	\$30.34	\$33.40	\$4.36	13.67%	0.90
Southern Co.	SO	\$13.75	\$2.04	\$1.43	4.50%	\$16.47	\$17.23	\$2.54	15.09%	0.65
Vectren	VVC	\$14.45	\$1.44	\$1.16	5.90%	\$15.65	\$16.00	\$1.82	12.12%	0.75
Wisconsin Energy	WEC	\$21.31	\$1.85	\$0.88	6.10%	\$25.82	\$27.12	\$2.49	9.40%	0.70
WPS Resources	WPS	\$29.00	\$4.07	\$2.22	4.50%	\$37.27	\$39.58	\$5.07	13.20%	0.75
Xcel Energy Inc.	XEL	\$13.10	\$1.27	\$0.83	4.00%	\$15.03	\$15.57	\$1.55	10.10%	0.80
		\$22.50	\$2.41	\$1.55	4.94%	\$26.44	\$27.56	\$3.09	11.34%	0.79
				4.55%					11.13%	0.75
<b>Gas Distribution Companies Selected by Company Witness</b>										
AGL Resources	ATG	\$18.06	\$2.28	\$1.24	4.70%	\$22.73	\$24.04	\$2.87	12.27%	0.80
Atmos Energy	ATO	\$18.05	\$1.58	\$1.24	5.00%	\$19.59	\$20.02	\$2.02	10.18%	0.70
Equitable Res	EQT	\$14.33	\$2.99	\$1.52	9.30%	\$21.71	\$24.00	\$4.66	20.41%	0.75
Keyspan Corp.	KSE	\$24.90	\$2.71	\$1.82	4.50%	\$28.88	\$29.99	\$3.38	11.47%	0.80
New Jersey Resources	NJR	\$16.87	\$2.55	\$1.36	6.50%	\$22.46	\$24.09	\$3.49	15.01%	0.75
Nicor, Inc.	GAS	\$16.99	\$2.22	\$1.86	3.20%	\$18.55	\$18.97	\$2.60	13.65%	1.05
N.W. Natural Gas	NWN	\$20.85	\$1.86	\$1.30	5.10%	\$23.19	\$23.91	\$2.39	10.13%	0.65
Oneok Inc.	OKE	\$15.30	\$2.30	\$1.00	6.90%	\$21.46	\$23.28	\$3.21	14.35%	0.90
Peoples Energy	PGL	\$23.06	\$2.18	\$2.18	4.50%	\$23.06	\$23.06	\$2.72	11.78%	0.80
Piedmont Natural Gas	PNY	\$11.15	\$1.27	\$0.92	4.90%	\$12.73	\$13.17	\$1.61	12.45%	0.75
Questar	STR	\$17.10	\$2.67	\$0.86	8.70%	\$26.06	\$28.80	\$4.05	14.77%	0.85
Southwest Gas	SWX	\$18.85	\$1.55	\$0.82	4.60%	\$22.12	\$23.04	\$1.94	8.60%	0.75
WGL Holdings	WGL	\$16.95	\$1.98	\$1.30	3.90%	\$19.95	\$20.77	\$2.40	11.78%	0.75
		\$17.87	\$2.16	\$1.34	5.52%	\$21.73	\$22.66	\$2.87	12.85%	0.79
				4.90%					12.27%	0.75

[A] Value Line  
[B] Harris Direct website - Zacks Analyst Watch  
[C] Projected return on equity is obtained by escalating both dividends and earnings per share by the stated growth rate, and adding earnings and subtracting dividends in each year to determine the book value.

**Electric Companies**  
**DISCOUNTED CASH FLOW (DCF) INDICATED COST OF EQUITY**

		BASED ON AVERAGE MARKET PRICE FOR Year Ending 5/1/05	BASED UPON MARKET PRICE AS OF 5/1/2005
1 Dividend Yield On Market Price	[B]	4.24%	4.10%
2 Retention Ratio:			
a) Market-to-book	[B]	1.72	1.71
b) Div. Yld on Book	[C]	7.31%	7.03%
c) Return on Equity	[A]	11.00%	11.00%
d) Retention Rate	[D]	33.57%	35.07%
3 Reinvestment Growth	[E]	3.69%	3.97%
4 New Financing Growth	[F]	0.57%	0.57%
5 Total Estimate of Investor Anticipated Growth	[G]	4.27%	4.53%
6 Increment to Dividend Yield for Growth to Next Year	[H]	0.09%	0.09%
7 Indicated Cost of Equity	[I]	8.60%	8.73%

**Some of the Considerations for determining Future Expected Return on Equity:**

Source:

	Median	Mean	
[A] Value Line Expectation	11.00%	11.02%	JAR 4, Page 2
Return on Equity to Achieve Zacks' Growth	11.13%	11.34%	JAR 4, Page 3
Earned Return on Equity in 2004	10.14%	11.17%	JAR 4, Page 2
Earned Return on Equity in 2003	11.52%	11.44%	JAR 4, Page 2
Earned Return on Equity in 2002	11.53%	11.70%	JAR 4, Page 2
[B] JAR 4, Page 1			
[C] Line 1 x Line 2a			
[D] 1- Line 2b/Line 2c			
[E] Line 2c x Line 2d			
[F] Estimated impact of dilution or premium due to sale of equity at other than book value. Computed based upon mathematically derived result based upon the Value Line forecasted external financing rate. [M/B X (Ext. Fin Rate+1)/(M/B + Ext. Fin. Rate-1)	Ext. Fin. rate used =	0.80%	[J]
[G] Line 3 + Line 4			
[H] Line 1 x one-half of line 5			
[I] Line 1 + Line 5 + Line 6			
[J] JAR 8			

**Gas Companies**  
**DISCOUNTED CASH FLOW (DCF) INDICATED COST OF EQUITY**

		BASED ON AVERAGE MARKET PRICE FOR Year Ending 5/1/05	BASED UPON MARKET PRICE AS OF 5/1/2005
1 Dividend Yield On Market Price	[B]	3.99%	3.82%
2 Retention Ratio:			
a) Market-to-book	[B]	2.05	2.12
b) Div. Yld on Book	[C]	8.17%	8.09%
c) Return on Equity	[A]	12.00%	12.00%
d) Retention Rate	[D]	31.92%	32.55%
3 Reinvestment Growth	[E]	3.83%	3.91%
4 New Financing Growth	[F]	0.42%	0.45%
5 Total Estimate of Investor Anticipated Growth	[G]	4.25%	4.35%
6 Increment to Dividend Yield for Growth to Next Year	[H]	0.08%	0.08%
7 Indicated Cost of Equity	[I]	8.32%	8.25%

**Some of the Considerations for determining Future Expected Return on Equity:**

Source:

	Median	Mean	
[A] Value Line Expectation	11.50%	11.88%	JAR 4, Page 2
Return on Equity to Achieve Zacks' Growth	12.27%	12.85%	JAR 4, Page 3
Earned Return on Equity in 2004	12.38%	12.88%	JAR 4, Page 2
Earned Return on Equity in 2003	12.52%	12.97%	JAR 4, Page 2
Earned Return on Equity in 2002	12.31%	11.87%	JAR 4, Page 2
[B] JAR 4, Page 1			
[C] Line 1 x Line 2a			
[D] 1- Line 2b/Line 2c			
[E] Line 2c x Line 2d			
[F] Estimated impact of dilution or premium due to sale of equity at other than book value. Computed based upon mathematically derived result based upon the Value Line forecasted external financing rate. [M/B X (Ext. Fin Rate+1)/(M/B + Ext. Fin. Rate-1)	Ext. Fin. rate used =	0.40%	[J]
[G] Line 3 + Line 4			
[H] Line 1 x one-half of line 5			
[I] Line 1 + Line 5 + Line 6			
[J] JAR 8			



Electric Companies FULL DCF METHOD Based on Market Price on 5/1/2005														
	[1] Year Book	[2] Retentio Rate	[3] Dividend	[4] Earnings Per Share	[5] Retained Earnings Per Share	[6] External Financin Rate	[7] Incremer from Ext. Fin.	[8] Total Increment to Book	[9] Market Price	[10] Mkt to Book	[11] Expect. Ret. on Equity	[12] Cash Fl. from Stock Trans.	[13] Cash Fl. from Div.	[14] Total Cash Flow
	[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I] M/B Change	[J]	[K]	[L]	[M]	[N]
First Stage	2005	\$23.65	40.95%	\$1.54	\$2.61	\$1.07			\$40.54	1.71				\$0.00
	2006	\$24.58	41.62%	\$1.61	\$2.76	\$1.15		\$1.15	\$42.13	1.71	11.44%	(\$42.13)	\$1.61	(\$40.52)
	2007	\$25.91	42.17%	\$1.67	\$2.89	\$1.22		\$1.22	\$44.41	1.71	11.45%		\$1.67	\$1.67
	2008	\$27.24	42.67%	\$1.73	\$3.02	\$1.29		\$1.29	\$46.69	1.71	11.38%		\$1.73	\$1.73
	2009	\$28.57	43.13%	\$1.80	\$3.16	\$1.36		\$1.36	\$48.97	1.71	11.31%		\$1.80	\$1.80
Second Stage	2010	\$30.11	42.40%	\$1.86	\$3.23	\$1.37	0.80%	\$0.17	\$51.60	1.71	11.00%		\$1.86	\$1.86
	2011	\$31.73	42.40%	\$1.96	\$3.40	\$1.44	0.80%	\$0.18	\$54.37	1.71	11.00%		\$1.96	\$1.96
	2012	\$33.43	42.40%	\$2.06	\$3.58	\$1.52	0.80%	\$0.19	\$57.30	1.71	11.00%		\$2.06	\$2.06
	2013	\$35.23	42.40%	\$2.18	\$3.78	\$1.60	0.80%	\$0.20	\$60.37	1.71	11.00%		\$2.18	\$2.18
	2014	\$37.12	42.40%	\$2.29	\$3.98	\$1.69	0.80%	\$0.21	\$63.62	1.71	11.00%		\$2.29	\$2.29
	2015	\$39.11	42.40%	\$2.42	\$4.19	\$1.78	0.80%	\$0.22	\$67.03	1.71	11.00%		\$2.42	\$2.42
	2016	\$41.21	42.40%	\$2.54	\$4.42	\$1.87	0.80%	\$0.23	\$70.64	1.71	11.00%		\$2.54	\$2.54
	2017	\$43.43	42.40%	\$2.68	\$4.66	\$1.97	0.80%	\$0.24	\$74.43	1.71	11.00%		\$2.68	\$2.68
	2018	\$45.76	42.40%	\$2.83	\$4.91	\$2.08	0.80%	\$0.25	\$78.43	1.71	11.00%		\$2.83	\$2.83
	2019	\$48.22	42.40%	\$2.98	\$5.17	\$2.19	0.80%	\$0.27	\$82.64	1.71	11.00%		\$2.98	\$2.98
	2020	\$50.81	42.40%	\$3.14	\$5.45	\$2.31	0.80%	\$0.28	\$87.08	1.71	11.00%		\$3.14	\$3.14
	2021	\$53.54	42.40%	\$3.31	\$5.74	\$2.43	0.80%	\$0.30	\$91.76	1.71	11.00%		\$3.31	\$3.31
	2022	\$56.42	42.40%	\$3.48	\$6.05	\$2.56	0.80%	\$0.31	\$96.69	1.71	11.00%		\$3.48	\$3.48
	2023	\$59.45	42.40%	\$3.67	\$6.37	\$2.70	0.80%	\$0.33	\$101.89	1.71	11.00%		\$3.67	\$3.67
	2024	\$62.64	42.40%	\$3.87	\$6.71	\$2.85	0.80%	\$0.35	\$107.36	1.71	11.00%		\$3.87	\$3.87
	2025	\$66.01	42.40%	\$4.08	\$7.08	\$3.00	0.80%	\$0.37	\$113.13	1.71	11.00%		\$4.08	\$4.08
	2026	\$69.55	42.40%	\$4.29	\$7.46	\$3.16	0.80%	\$0.39	\$119.21	1.71	11.00%		\$4.29	\$4.29
	2027	\$73.29	42.40%	\$4.53	\$7.86	\$3.33	0.80%	\$0.41	\$125.61	1.71	11.00%		\$4.53	\$4.53
	2028	\$77.23	42.40%	\$4.77	\$8.28	\$3.51	0.80%	\$0.43	\$132.36	1.71	11.00%		\$4.77	\$4.77
	2029	\$81.38	42.40%	\$5.03	\$8.72	\$3.70	0.80%	\$0.45	\$139.47	1.71	11.00%		\$5.03	\$5.03
	2030	\$85.75	42.40%	\$5.29	\$9.19	\$3.90	0.80%	\$0.48	\$146.96	1.71	11.00%		\$5.29	\$5.29
	2031	\$90.36	42.40%	\$5.58	\$9.69	\$4.11	0.80%	\$0.50	\$154.86	1.71	11.00%		\$5.58	\$5.58
	2032	\$95.21	42.40%	\$5.88	\$10.21	\$4.33	0.80%	\$0.53	\$163.18	1.71	11.00%		\$5.88	\$5.88
	2033	\$100.33	42.40%	\$6.20	\$10.75	\$4.56	0.80%	\$0.56	\$171.94	1.71	11.00%		\$6.20	\$6.20
	2034	\$105.72	42.40%	\$6.53	\$11.33	\$4.80	0.80%	\$0.59	\$181.18	1.71	11.00%		\$6.53	\$6.53
	2035	\$111.39	42.40%	\$6.88	\$11.94	\$5.06	0.80%	\$0.62	\$190.91	1.71	11.00%		\$6.88	\$6.88
	2036	\$117.38	42.40%	\$7.25	\$12.58	\$5.33	0.80%	\$0.65	\$201.17	1.71	11.00%		\$7.25	\$7.25
	2037	\$123.69	42.40%	\$7.64	\$13.26	\$5.62	0.80%	\$0.69	\$211.98	1.71	11.00%		\$7.64	\$7.64
	2038	\$130.33	42.40%	\$8.05	\$13.97	\$5.92	0.80%	\$0.72	\$223.37	1.71	11.00%		\$8.05	\$8.05
	2039	\$137.33	42.40%	\$8.48	\$14.72	\$6.24	0.80%	\$0.76	\$235.37	1.71	11.00%		\$8.48	\$8.48
	2040	\$144.71	42.40%	\$8.94	\$15.51	\$6.58	0.80%	\$0.80	\$248.01	1.71	11.00%		\$8.94	\$8.94
	2041	\$152.48	42.40%	\$9.42	\$16.35	\$6.93	0.80%	\$0.84	\$261.34	1.71	11.00%		\$9.42	\$9.42
	2042	\$160.68	42.40%	\$9.92	\$17.22	\$7.30	0.80%	\$0.89	\$275.38	1.71	11.00%		\$9.92	\$9.92
	2043	\$169.31	42.40%	\$10.45	\$18.15	\$7.69	0.80%	\$0.94	\$290.17	1.71	11.00%		\$10.45	\$10.45
	2044	\$178.41	42.40%	\$11.02	\$19.12	\$8.11	0.80%	\$0.99	\$305.76	1.71	11.00%		\$11.02	\$11.02
	2045	\$187.99	42.40%	\$11.61	\$20.15	\$8.54	0.80%	\$1.04	\$322.19	1.71	11.00%	\$322.19	\$11.61	\$333.80
Internal Rate of Return														9.35%

Source:

- [A] First Stage is average from Value Line. Second stage is prior years' book plus value from Col.[8]  
 [B] First Stage is (Col. [4]-Col.[3]/Col.[4]). First year of second stage computed by 1-dividends/earnings. Subsequent years uses same retention rate as first year  
 [C] First Stage is from Value Line. First year of second stage equal to same dividend growth rates as in last year of first stage. Subsequent years of second stage is Col. [4] x (1-Col. [2])  
 [D] First Stage is from Value line. Second stage is average of current and prior year's value from Col. [1] x Col. [11]  
 [E] Col. [4] - Col. [3] [J] JAR 4, Page 1  
 [F] JAR 8 [K] First stage is Col. [4]/Avg. of Current and prior year's Col. [1]. Second stage is from JAR 5, Page 1  
 [G] Col. [5] + Col. [7] [L] - Col. [9] for year of purchase, + Col. [9] for year of sale.  
 [H] Col. [7] + Col. [8] [M] Col. [3]  
 [I] Col. [1] x Col. [10] [N] Col. [12] + Col. [13]

Electric Companies FULL DCF METHOD Based on Market Price for Year Ended 5/1/2005													
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
Year	Retention	Dividend	Earnings	Retained	External	Increment	Total	Market	Mkt to	Expect.	Cash Fl.	Cash Fl.	Total
Year End	Rate		Per Share	Earnings	Financing	to book	Increment	Price	Book	Ret. on	from	from	Cash
Book				Per Share	Rate	from	to Book			Equity	Stock	Div.	Flow
						Ext. Fin.					Trans.		
[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	[K]	[L]	[M]	[N]
First Stage	2005	\$23.65	40.95%	\$1.54	\$2.61	\$1.07							
	2006	\$24.58	41.62%	\$1.61	\$2.76	\$1.15							
	2007	\$25.91	42.17%	\$1.67	\$2.89	\$1.22							
	2008	\$27.24	42.67%	\$1.73	\$3.02	\$1.29							
	2009	\$28.57	43.13%	\$1.80	\$3.16	\$1.36							
Second Stage	2010	\$30.11	42.40%	\$1.86	\$3.23	\$1.37	0.80%	\$0.17	\$1.54	\$51.90	1.72	11.00%	\$1.86
	2011	\$31.73	42.40%	\$1.96	\$3.40	\$1.44	0.80%	\$0.18	\$1.62	\$54.69	1.72	11.00%	\$1.96
	2012	\$33.44	42.40%	\$2.06	\$3.58	\$1.52	0.80%	\$0.19	\$1.71	\$57.64	1.72	11.00%	\$2.06
	2013	\$35.24	42.40%	\$2.18	\$3.78	\$1.60	0.80%	\$0.20	\$1.80	\$60.74	1.72	11.00%	\$2.18
	2014	\$37.13	42.40%	\$2.29	\$3.98	\$1.69	0.80%	\$0.21	\$1.90	\$64.01	1.72	11.00%	\$2.29
	2015	\$39.13	42.40%	\$2.42	\$4.19	\$1.78	0.80%	\$0.22	\$2.00	\$67.45	1.72	11.00%	\$2.42
	2016	\$41.24	42.40%	\$2.55	\$4.42	\$1.87	0.80%	\$0.23	\$2.11	\$71.08	1.72	11.00%	\$2.55
	2017	\$43.46	42.40%	\$2.68	\$4.66	\$1.97	0.80%	\$0.24	\$2.22	\$74.91	1.72	11.00%	\$2.68
	2018	\$45.80	42.40%	\$2.83	\$4.91	\$2.08	0.80%	\$0.26	\$2.34	\$78.94	1.72	11.00%	\$2.83
	2019	\$48.26	42.40%	\$2.98	\$5.17	\$2.19	0.80%	\$0.27	\$2.46	\$83.18	1.72	11.00%	\$2.98
	2020	\$50.86	42.40%	\$3.14	\$5.45	\$2.31	0.80%	\$0.29	\$2.60	\$87.66	1.72	11.00%	\$3.14
	2021	\$53.59	42.40%	\$3.31	\$5.74	\$2.44	0.80%	\$0.30	\$2.74	\$92.38	1.72	11.00%	\$3.31
	2022	\$56.48	42.40%	\$3.49	\$6.05	\$2.57	0.80%	\$0.32	\$2.88	\$97.35	1.72	11.00%	\$3.49
	2023	\$59.52	42.40%	\$3.67	\$6.38	\$2.70	0.80%	\$0.33	\$3.04	\$102.59	1.72	11.00%	\$3.67
	2024	\$62.72	42.40%	\$3.87	\$6.72	\$2.85	0.80%	\$0.35	\$3.20	\$108.11	1.72	11.00%	\$3.87
	2025	\$66.09	42.40%	\$4.08	\$7.08	\$3.00	0.80%	\$0.37	\$3.37	\$113.92	1.72	11.00%	\$4.08
	2026	\$69.65	42.40%	\$4.30	\$7.47	\$3.17	0.80%	\$0.39	\$3.56	\$120.05	1.72	11.00%	\$4.30
	2027	\$73.40	42.40%	\$4.53	\$7.87	\$3.34	0.80%	\$0.41	\$3.75	\$126.52	1.72	11.00%	\$4.53
	2028	\$77.35	42.40%	\$4.78	\$8.29	\$3.52	0.80%	\$0.43	\$3.95	\$133.32	1.72	11.00%	\$4.78
	2029	\$81.51	42.40%	\$5.03	\$8.74	\$3.70	0.80%	\$0.46	\$4.16	\$140.50	1.72	11.00%	\$5.03
	2030	\$85.90	42.40%	\$5.30	\$9.21	\$3.90	0.80%	\$0.48	\$4.39	\$148.06	1.72	11.00%	\$5.30
	2031	\$90.52	42.40%	\$5.59	\$9.70	\$4.11	0.80%	\$0.51	\$4.62	\$156.02	1.72	11.00%	\$5.59
	2032	\$95.39	42.40%	\$5.89	\$10.22	\$4.34	0.80%	\$0.54	\$4.87	\$164.42	1.72	11.00%	\$5.89
	2033	\$100.52	42.40%	\$6.21	\$10.77	\$4.57	0.80%	\$0.56	\$5.13	\$173.27	1.72	11.00%	\$6.21
	2034	\$105.93	42.40%	\$6.54	\$11.35	\$4.81	0.80%	\$0.59	\$5.41	\$182.59	1.72	11.00%	\$6.54
	2035	\$111.63	42.40%	\$6.89	\$11.97	\$5.07	0.80%	\$0.63	\$5.70	\$192.42	1.72	11.00%	\$6.89
	2036	\$117.64	42.40%	\$7.26	\$12.61	\$5.35	0.80%	\$0.66	\$6.01	\$202.77	1.72	11.00%	\$7.26
	2037	\$123.97	42.40%	\$7.65	\$13.29	\$5.63	0.80%	\$0.70	\$6.33	\$213.68	1.72	11.00%	\$7.65
	2038	\$130.64	42.40%	\$8.07	\$14.00	\$5.94	0.80%	\$0.73	\$6.67	\$225.18	1.72	11.00%	\$8.07
	2039	\$137.67	42.40%	\$8.50	\$14.76	\$6.26	0.80%	\$0.77	\$7.03	\$237.30	1.72	11.00%	\$8.50
	2040	\$145.07	42.40%	\$8.96	\$15.55	\$6.59	0.80%	\$0.81	\$7.41	\$250.06	1.72	11.00%	\$8.96
	2041	\$152.88	42.40%	\$9.44	\$16.39	\$6.95	0.80%	\$0.86	\$7.81	\$263.52	1.72	11.00%	\$9.44
	2042	\$161.11	42.40%	\$9.95	\$17.27	\$7.32	0.80%	\$0.90	\$8.23	\$277.70	1.72	11.00%	\$9.95
	2043	\$169.78	42.40%	\$10.48	\$18.20	\$7.72	0.80%	\$0.95	\$8.67	\$292.64	1.72	11.00%	\$10.48
	2044	\$178.91	42.40%	\$11.05	\$19.18	\$8.13	0.80%	\$1.00	\$9.14	\$308.39	1.72	11.00%	\$11.05
	2045	\$188.54	42.40%	\$11.64	\$20.21	\$8.57	0.80%	\$1.06	\$9.63	\$324.99	1.72	11.00%	\$11.64
Internal Rate of Return												9.34%	

Source:

- [A] First Stage is average from Value Line. Second stage is prior years' book plus value from Col.[8]  
 [B] First Stage is (Col. [4]-Col.[3]/Col.[4]). First year of second stage computed by 1-dividends/ear JAR 5, Page 1  
 [C] First Stage is from Value Line. First year of second stage equal to same dividend growth rates as in last year of first stage.  
 Subsequent years of second stage is Col. [4] x (1-Col. [2])  
 [D] First Stage is from Value line. Second stage is average of current and prior year's value from Col. [1] x Col. [11]  
 [E] Col. [4] - Col. [3] [J] JAR 4, Page 1  
 [F] JAR 8 [K] First stage is Col. [4]/Avg. of Current and prior year's Col. [1]. Second stage is from JAR 5, Page 1  
 [G] Col. [5] + Col. [7] [L] - Col. [9] for year of purchase, + Col. [9] for year of sale.  
 [H] Col. [7] + Col. [8] [M] Col. [3]  
 [I] Col. [1] x Col. [10] [N] Col. [12] + Col. [13]

JAR 6, Page 3

Electric Companies  
VALUE LINE'S EARNINGS PROJECTIONS

Earnings Per Share Forecast by Value Line

	2005	2006	2007	2008	2009
Alliant Energy	\$1.95	\$1.95	\$2.00	\$2.05	\$2.10
Ameren Corp.	\$3.00	\$3.10	\$3.12	\$3.13	\$3.15
Cinergy	\$2.75	\$3.05	\$3.08	\$3.12	\$3.15
Constl. Edison	\$2.85	\$2.85	\$2.88	\$2.92	\$2.95
Constell'n egy gp	\$3.45	\$3.85	\$4.48	\$5.12	\$5.75
Dominion Resources	\$4.90	\$5.25	\$5.50	\$5.75	\$6.00
DTE	\$3.30	\$3.70	\$4.05	\$4.40	\$4.75
Duke	\$1.60	\$1.70	\$1.88	\$2.07	\$2.25
Energy East	\$1.75	\$1.85	\$1.90	\$1.95	\$2.00
Entergy Corp.	\$4.60	\$4.80	\$5.00	\$5.20	\$5.40
FirstEnergy Corp	\$2.80	\$3.45	\$3.63	\$3.82	\$4.00
FPL Group	\$2.55	\$2.65	\$2.75	\$2.85	\$2.95
G't Plains Energy	\$2.10	\$2.10	\$2.15	\$2.20	\$2.25
Hawaiian Elec.*	\$1.70	\$1.70	\$1.80	\$1.90	\$2.00
MDU Resources*	\$1.80	\$1.80	\$1.95	\$2.10	\$2.25
Northeast Utilities	\$1.15	\$1.40	\$1.60	\$1.80	\$2.00
NSTAR	\$3.65	\$3.75	\$3.92	\$4.08	\$4.25
OGE Energy	\$1.60	\$1.75	\$1.83	\$1.92	\$2.00
Pepco Holdings	\$1.60	\$1.70	\$1.93	\$2.17	\$2.40
Pinnacle West Capital*	\$3.00	\$3.00	\$3.05	\$3.10	\$3.15
PPL Corp.	\$3.95	\$4.30	\$4.45	\$4.60	\$4.75
Progress Energy	\$3.20	\$3.35	\$3.30	\$3.25	\$3.20
Puget Energy Inc.*	\$1.55	\$1.55	\$1.70	\$1.85	\$2.00
SCANA Corp.	\$2.85	\$2.95	\$3.05	\$3.15	\$3.25
Sempra Energy*	\$3.30	\$3.30	\$3.45	\$3.60	\$3.75
Southern Co.	\$2.07	\$2.15	\$2.27	\$2.38	\$2.50
Vectren	\$1.75	\$1.85	\$1.88	\$1.92	\$1.95
Wisconsin Energy	\$2.30	\$2.45	\$2.55	\$2.65	\$2.75
WPS Resources	\$4.10	\$4.20	\$4.23	\$4.27	\$4.30
Xcel Energy Inc.*	\$1.25	\$1.25	\$1.33	\$1.42	\$1.50

AVERAGE	\$2.61	\$2.76	\$2.89	\$3.02	\$3.16
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\*No data in Value Line for 2006 so assumed 2006 would be same as 2005

Source: Most Current Value Line at Time of Prep:

The value for 2006 AND 2007 are extrapolated from Value Line's 2005 and 2008 Values where the 2007-2009 single number is interpreted as the number for 2008.

JAR 6, P.

Electric Companies  
VALUE LINE'S BOOK VALUE PROJECTIONS

Book Value Per Share Forecast by Value Line

	2005	2006	2007	2008	2009
Alliant Energy	\$23.15	\$24.00	\$24.77	\$25.53	\$26.30
Ameren Corp.	\$31.05	\$31.75	\$32.45	\$33.15	\$33.85
Cinergy	\$23.60	\$25.10	\$26.28	\$27.47	\$28.65
Const. Edison	\$30.00	\$30.65	\$31.30	\$31.95	\$32.60
Constell'n egy gp	\$29.20	\$31.40	\$34.57	\$37.73	\$40.90
Dominion Resources	\$36.35	\$39.25	\$42.08	\$44.92	\$47.75
DTE	\$33.20	\$34.50	\$36.58	\$38.67	\$40.75
Duke	\$17.70	\$18.30	\$19.20	\$20.10	\$21.00
Energy East	\$18.90	\$19.55	\$20.20	\$20.85	\$21.50
Entergy Corp.	\$40.45	\$42.65	\$45.03	\$47.42	\$49.80
FirstEnergy Corp	\$27.60	\$29.30	\$31.20	\$33.10	\$35.00
FPL Group	\$21.90	\$23.10	\$24.22	\$25.33	\$26.45
G't Plains Energy	\$15.80	\$16.25	\$17.17	\$18.08	\$19.00
Hawaiian Elec.*	\$15.30	\$15.30	\$15.87	\$16.43	\$17.00
MDU Resources*	\$15.50	\$15.50	\$16.92	\$18.33	\$19.75
Northeast Utilities	\$18.30	\$19.00	\$19.95	\$20.90	\$21.85
NSTAR	\$28.40	\$29.70	\$31.22	\$32.73	\$34.25
OGE Energy	\$14.55	\$15.00	\$15.67	\$16.33	\$17.00
Pepco Holdings	\$18.40	\$18.85	\$19.70	\$20.55	\$21.40
Pinnacle West Capital*	\$32.75	\$32.75	\$33.78	\$34.82	\$35.85
PPL Corp.	\$24.55	\$26.80	\$28.95	\$31.10	\$33.25
Progress Energy	\$32.00	\$33.00	\$33.88	\$34.77	\$35.65
Puget Energy Inc.*	\$17.60	\$17.60	\$18.40	\$19.20	\$20.00
SCANA Corp.	\$23.30	\$24.80	\$26.20	\$27.60	\$29.00
Sempra Energy*	\$23.05	\$23.05	\$25.78	\$28.52	\$31.25
Southern Co.	\$14.65	\$15.55	\$16.58	\$17.62	\$18.65
Vectren	\$15.00	\$15.60	\$16.15	\$16.70	\$17.25
Wisconsin Energy	\$22.75	\$24.30	\$25.95	\$27.60	\$29.25
WPS Resources	\$31.05	\$31.40	\$33.43	\$35.47	\$37.50
Xcel Energy Inc.*	\$13.50	\$13.50	\$13.92	\$14.33	\$14.75
AVERAGE	\$23.65	\$24.58	\$25.91	\$27.24	\$28.57

\*No data in Value Line for 2006 so assumed 2006 would be same as 2005

Source: Most Current Value Line at Time of Prep:

The value for 2006 AND 2007 are extrapolated from Value Line's 2005 and 2008 Values

**COMPARATIVE ELECTRIC COMPANIES**  
**Value Line's Projection of Dividends Per Share**

	2005	2006	2007	2008	2009	Compound Annual Growth from 2005 to 2009
			Value Line Estimate			
<b>AMOUNT:</b>						
Alliant Energy	\$1.08	\$1.14	\$1.20	\$1.26	\$1.32	5.14%
Ameren Corp.	\$2.54	\$2.54	\$2.54	\$2.54	\$2.54	0.00%
Cinergy	\$1.92	\$1.96	\$2.00	\$2.04	\$2.08	2.02%
Consl. Edison	\$2.28	\$2.30	\$2.32	\$2.34	\$2.36	0.87%
Constell'n egy gp	\$1.34	\$1.54	\$1.74	\$1.94	\$2.14	12.42%
Dominion Resources	\$2.68	\$2.76	\$2.84	\$2.92	\$3.00	2.86%
DTE	\$2.06	\$2.06	\$2.07	\$2.09	\$2.10	0.48%
Duke	\$1.10	\$1.10	\$1.17	\$1.23	\$1.30	4.26%
Energy East	\$1.13	\$1.21	\$1.29	\$1.37	\$1.45	6.43%
Entergy Corp.	\$2.21	\$2.41	\$2.61	\$2.81	\$3.01	8.03%
FirstEnergy Corp	\$1.24	\$1.72	\$1.81	\$1.91	\$2.00	12.69%
FPL Group	\$1.42	\$1.54	\$1.66	\$1.78	\$1.90	7.55%
G't Plains Energy	\$1.66	\$1.66	\$1.66	\$1.66	\$1.66	0.00%
Hawaiian Elec.	\$1.24	\$1.24	\$1.26	\$1.28	\$1.30	1.19%
MDU Resources*	\$0.74	\$0.74	\$0.78	\$0.82	\$0.86	3.83%
Northeast Utilities	\$0.67	\$0.73	\$0.81	\$0.89	\$0.97	9.69%
NSTAR	\$2.34	\$2.42	\$2.51	\$2.61	\$2.70	3.64%
OGE Energy	\$1.33	\$1.33	\$1.35	\$1.38	\$1.40	1.29%
Pepco Holdings	\$1.00	\$1.04	\$1.08	\$1.12	\$1.16	3.78%
Pinnacle West Capital*	\$1.91	\$1.91	\$1.99	\$2.07	\$2.15	3.00%
PPL Corp.	\$1.84	\$2.04	\$2.16	\$2.28	\$2.40	6.87%
Progress Energy	\$2.38	\$2.44	\$2.46	\$2.48	\$2.50	1.24%
Puget Energy Inc.*	\$1.00	\$1.00	\$1.04	\$1.08	\$1.12	2.87%
SCANA Corp.	\$1.56	\$1.66	\$1.74	\$1.82	\$1.90	5.05%
Sempra Energy*	\$1.00	\$1.00	\$1.00	\$1.00	\$1.00	0.00%
Southern Co.	\$1.46	\$1.52	\$1.58	\$1.64	\$1.70	3.88%
Vectren	\$1.19	\$1.23	\$1.27	\$1.31	\$1.35	3.20%
Wisconsin Energy	\$0.88	\$0.92	\$0.96	\$1.00	\$1.04	4.26%
WPS Resources	\$2.24	\$2.28	\$2.32	\$2.36	\$2.40	1.74%
Xcel Energy Inc.*	\$0.87	\$0.87	\$0.93	\$0.99	\$1.05	4.81%
<b>Average</b>	<b>\$1.54</b>	<b>\$1.61</b>	<b>\$1.67</b>	<b>\$1.73</b>	<b>\$1.80</b>	<b>4.10%</b>
		4.32%	3.83%	3.69%	3.56%	

\*No data in Value Line for 2006 so assumed 2006 would be same as 2005

Source: Most Current Value Line at Time of Prep:

The values for 2006 and 2007 are extrapolated from Value Line's 2005 and 2008 Values

where 2008 is interpreted as a single point from the 2007-2009 range provided by Value Line.

	2006	2007	2008	2009
<b>PERCENT CHANGE FROM PRIOR YEAR:</b>				
Alliant Energy	5.56%	5.26%	5.00%	4.76%
Ameren Corp.	0.00%	0.00%	0.00%	0.00%
Cinergy	2.08%	2.04%	2.00%	1.96%
Consl. Edison	0.88%	0.87%	0.86%	0.85%
Constell'n egy gp	14.93%	12.99%	11.49%	10.31%
Dominion Resources	2.99%	2.90%	2.82%	2.74%
DTE	0.00%	0.65%	0.64%	0.64%
Duke	0.00%	6.06%	5.71%	5.41%
Energy East	7.08%	6.61%	6.20%	5.84%
Entergy Corp.	9.05%	8.30%	7.66%	7.12%
FirstEnergy Corp	38.71%	5.43%	5.15%	4.90%
FPL Group	8.45%	7.79%	7.23%	6.74%
G't Plains Energy	0.00%	0.00%	0.00%	0.00%
Hawaiian Elec.	0.00%	1.61%	1.59%	1.56%
MDU Resources*	0.00%	5.41%	5.13%	4.88%
Northeast Utilities	8.96%	10.96%	9.88%	8.99%
NSTAR	3.42%	3.86%	3.71%	3.58%
OGE Energy	0.00%	1.75%	1.72%	1.69%
Pepco Holdings	4.00%	3.85%	3.70%	3.57%
Pinnacle West Capital*	0.00%	4.19%	4.02%	3.86%
PPL Corp.	10.87%	5.88%	5.56%	5.26%
<b>AVERAGE</b>	<b>5.57%</b>	<b>4.59%</b>	<b>4.29%</b>	<b>4.03%</b>

Source: Most current Value Line at time of prep. of schedule.

**COMPARATIVE GAS COMPANIES**  
**Value Line's Projection of Dividends Per Share**

	2005	2006	2007	2008	2009	Compound Annual Growth from 2005 to 2009
<b>AMOUNT:</b>			Value Line Estimate			
AGL Resources	\$1.24	\$1.26	\$1.27	\$1.29	\$1.30	1.19%
Atmos Energy	\$1.24	\$1.26	\$1.29	\$1.32	\$1.35	2.15%
Equitable Res	\$1.58	\$1.65	\$1.75	\$1.85	\$1.95	5.40%
Keyspan Corp.	\$1.83	\$1.87	\$1.93	\$1.99	\$2.05	2.88%
New Jersey Resources	\$1.36	\$1.40	\$1.44	\$1.48	\$1.52	2.82%
Nicor, Inc.	\$1.88	\$1.92	\$1.97	\$2.03	\$2.08	2.56%
N.W. Natural Gas	\$1.33	\$1.37	\$1.41	\$1.46	\$1.50	3.05%
Oneok Inc.	\$1.00	\$1.05	\$1.07	\$1.08	\$1.10	2.41%
Peoples Energy	\$2.18	\$2.20	\$2.23	\$2.25	\$2.28	1.13%
Piedmont Natural Gas	\$0.92	\$0.98	\$1.02	\$1.06	\$1.10	4.57%
Questar	\$0.88	\$0.88	\$0.89	\$0.91	\$0.92	1.12%
Southwest Gas	\$0.82	\$0.82	\$0.82	\$0.82	\$0.82	0.00%
WGL Holdings	\$1.33	\$1.34	\$1.36	\$1.38	\$1.40	1.29%
 Average	 \$1.35	 \$1.38	 \$1.42	 \$1.45	 \$1.49	 2.35%
		2.33%	2.54%	2.47%	2.41%	

Source: Most Current Value Line at Time of Prep:  
The values for 2006 and 2007 are extrapolated from Value Line's 2005 and 2008 Values  
where 2008 is interpreted as a single point from the 2007-2009 range provided by Value Line.

	2006	2007	2008	2009
<b>PERCENT CHANGE FROM PRIOR YEAR:</b>				
AGL Resources	1.61%	1.06%	1.05%	1.04%
Atmos Energy	1.61%	2.38%	2.33%	2.27%
Equitable Res	4.43%	6.06%	5.71%	5.41%
Keyspan Corp.	2.19%	3.21%	3.11%	3.02%
New Jersey Resources	2.94%	2.86%	2.78%	2.70%
Nicor, Inc.	2.13%	2.78%	2.70%	2.63%
N.W. Natural Gas	3.01%	3.16%	3.07%	2.97%
Oneok Inc.	5.00%	1.59%	1.56%	1.54%
Peoples Energy	0.92%	1.21%	1.20%	1.18%
Piedmont Natural Gas	6.52%	4.08%	3.92%	3.77%
Questar	0.00%	1.52%	1.49%	1.47%
Southwest Gas	0.00%	0.00%	0.00%	0.00%
WGL Holdings	0.75%	1.49%	1.47%	1.45%
 AVERAGE	 2.39%	 2.41%	 2.34%	 2.27%

Source: Most current Value Line at time of prep. of schedule.

Gas Companies FULL DCF METHOD Based on Market Price on 5/1/2005															
	(1) Year	(2) Year End Book	(3) Retention Rate	(4) Dividend Earnings Per Share	(5) Retained Earnings Per Share	(6) External Financing Rate	(7) Increment from Ext. Fin.	(8) Total Increment to Book	(9) Market Price	(10) Mkt to Book	(11) Expect. Ret. on Equity	(12) Cash Fl. from Stock Trans.	(13) Cash Fl. from Div.	(14) Total Cash Flow	
	[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	[K]	[L]	[M]	[N]	
First Stage	2005	\$19.07	40.97%	\$1.35	\$2.29	\$0.94			\$40.42	2.12		(\$40.42)		(\$40.42)	
	2006	\$20.25	43.13%	\$1.38	\$2.43	\$1.05		\$1.05	\$42.90	2.12	12.38%		\$1.38	\$1.38	
	2007	\$21.88	45.66%	\$1.42	\$2.61	\$1.19		\$1.19	\$46.37	2.12	12.40%		\$1.42	\$1.42	
	2008	\$23.52	47.87%	\$1.45	\$2.79	\$1.34		\$1.34	\$49.84	2.12	12.30%		\$1.45	\$1.45	
	2009	\$25.15	49.82%	\$1.49	\$2.97	\$1.48		\$1.48	\$53.30	2.12	12.20%		\$1.49	\$1.49	
Second Stage	2010	\$26.87	51.11%	\$1.53	\$3.12	\$1.60	0.40%	\$0.12	\$1.71	\$56.93	2.12	12.00%		\$1.53	\$1.53
	2011	\$28.69	51.11%	\$1.63	\$3.33	\$1.70	0.40%	\$0.12	\$1.83	\$60.80	2.12	12.00%		\$1.63	\$1.63
	2012	\$30.65	51.11%	\$1.74	\$3.56	\$1.82	0.40%	\$0.13	\$1.95	\$64.94	2.12	12.00%		\$1.74	\$1.74
	2013	\$32.73	51.11%	\$1.86	\$3.80	\$1.94	0.40%	\$0.14	\$2.08	\$69.36	2.12	12.00%		\$1.86	\$1.86
	2014	\$34.96	51.11%	\$1.99	\$4.06	\$2.08	0.40%	\$0.15	\$2.23	\$74.07	2.12	12.00%		\$1.99	\$1.99
	2015	\$37.34	51.11%	\$2.12	\$4.34	\$2.22	0.40%	\$0.16	\$2.38	\$79.11	2.12	12.00%		\$2.12	\$2.12
	2016	\$39.88	51.11%	\$2.26	\$4.63	\$2.37	0.40%	\$0.17	\$2.54	\$84.50	2.12	12.00%		\$2.26	\$2.26
	2017	\$42.59	51.11%	\$2.42	\$4.95	\$2.53	0.40%	\$0.18	\$2.71	\$90.25	2.12	12.00%		\$2.42	\$2.42
	2018	\$45.49	51.11%	\$2.58	\$5.28	\$2.70	0.40%	\$0.20	\$2.90	\$96.39	2.12	12.00%		\$2.58	\$2.58
	2019	\$48.58	51.11%	\$2.76	\$5.64	\$2.88	0.40%	\$0.21	\$3.09	\$102.94	2.12	12.00%		\$2.76	\$2.76
	2020	\$51.89	51.11%	\$2.95	\$6.03	\$3.08	0.40%	\$0.22	\$3.31	\$109.95	2.12	12.00%		\$2.95	\$2.95
	2021	\$55.42	51.11%	\$3.15	\$6.44	\$3.29	0.40%	\$0.24	\$3.53	\$117.43	2.12	12.00%		\$3.15	\$3.15
	2022	\$59.19	51.11%	\$3.36	\$6.88	\$3.51	0.40%	\$0.26	\$3.77	\$125.42	2.12	12.00%		\$3.36	\$3.36
	2023	\$63.21	51.11%	\$3.59	\$7.34	\$3.75	0.40%	\$0.27	\$4.03	\$133.95	2.12	12.00%		\$3.59	\$3.59
	2024	\$67.51	51.11%	\$3.83	\$7.84	\$4.01	0.40%	\$0.29	\$4.30	\$143.06	2.12	12.00%		\$3.83	\$3.83
	2025	\$72.11	51.11%	\$4.10	\$8.38	\$4.28	0.40%	\$0.31	\$4.59	\$152.80	2.12	12.00%		\$4.10	\$4.10
	2026	\$77.01	51.11%	\$4.37	\$8.95	\$4.57	0.40%	\$0.33	\$4.91	\$163.19	2.12	12.00%		\$4.37	\$4.37
	2027	\$82.25	51.11%	\$4.67	\$9.56	\$4.88	0.40%	\$0.36	\$5.24	\$174.30	2.12	12.00%		\$4.67	\$4.67
	2028	\$87.85	51.11%	\$4.99	\$10.21	\$5.22	0.40%	\$0.38	\$5.60	\$186.15	2.12	12.00%		\$4.99	\$4.99
	2029	\$93.83	51.11%	\$5.33	\$10.90	\$5.57	0.40%	\$0.41	\$5.98	\$198.82	2.12	12.00%		\$5.33	\$5.33
	2030	\$100.21	51.11%	\$5.69	\$11.64	\$5.95	0.40%	\$0.43	\$6.38	\$212.35	2.12	12.00%		\$5.69	\$5.69
	2031	\$107.03	51.11%	\$6.08	\$12.43	\$6.35	0.40%	\$0.46	\$6.82	\$226.79	2.12	12.00%		\$6.08	\$6.08
	2032	\$114.31	51.11%	\$6.49	\$13.28	\$6.79	0.40%	\$0.49	\$7.28	\$242.22	2.12	12.00%		\$6.49	\$6.49
	2033	\$122.09	51.11%	\$6.93	\$14.18	\$7.25	0.40%	\$0.53	\$7.78	\$258.70	2.12	12.00%		\$6.93	\$6.93
	2034	\$130.39	51.11%	\$7.41	\$15.15	\$7.74	0.40%	\$0.56	\$8.31	\$276.30	2.12	12.00%		\$7.41	\$7.41
	2035	\$139.26	51.11%	\$7.91	\$16.18	\$8.27	0.40%	\$0.60	\$8.87	\$295.10	2.12	12.00%		\$7.91	\$7.91
	2036	\$148.74	51.11%	\$8.45	\$17.28	\$8.83	0.40%	\$0.64	\$9.47	\$315.18	2.12	12.00%		\$8.45	\$8.45
	2037	\$158.86	51.11%	\$9.02	\$18.46	\$9.43	0.40%	\$0.69	\$10.12	\$336.62	2.12	12.00%		\$9.02	\$9.02
	2038	\$169.67	51.11%	\$9.64	\$19.71	\$10.07	0.40%	\$0.73	\$10.81	\$359.53	2.12	12.00%		\$9.64	\$9.64
	2039	\$181.21	51.11%	\$10.29	\$21.05	\$10.76	0.40%	\$0.78	\$11.54	\$383.99	2.12	12.00%		\$10.29	\$10.29
	2040	\$193.54	51.11%	\$10.99	\$22.48	\$11.49	0.40%	\$0.84	\$12.33	\$410.11	2.12	12.00%		\$10.99	\$10.99
	2041	\$206.71	51.11%	\$11.74	\$24.01	\$12.27	0.40%	\$0.89	\$13.17	\$438.01	2.12	12.00%		\$11.74	\$11.74
	2042	\$220.77	51.11%	\$12.54	\$25.65	\$13.11	0.40%	\$0.95	\$14.06	\$467.82	2.12	12.00%		\$12.54	\$12.54
	2043	\$235.79	51.11%	\$13.39	\$27.39	\$14.00	0.40%	\$1.02	\$15.02	\$499.64	2.12	12.00%		\$13.39	\$13.39
	2044	\$251.83	51.11%	\$14.30	\$29.26	\$14.95	0.40%	\$1.09	\$16.04	\$533.64	2.12	12.00%		\$14.30	\$14.30
	2045	\$268.97	51.11%	\$15.28	\$31.25	\$15.97	0.40%	\$1.16	\$17.13	\$569.94	2.12	12.00%	\$569.94	\$15.28	\$585.22
Internal Rate of Return												9.78%			

Source:

- [A] First Stage is average from Value Line. Second stage is prior years' book plus value from Col.[8]  
 [B] First Stage is (Col. [4]-Col.[3]/Col.[4]). First year of second stage computed by 1-dividends/earnings. Subsequent years uses same retention rate as first year  
 [C] First Stage is from Value Line. First year of second stage equal to same dividend growth rates as in last year of first stage.  
 Subsequent years of second stage is Col. [4] x (1-Col. [2])  
 [D] First Stage is from Value line. Second stage is average of current and prior year's value from Col. [1] x Col. [11]  
 [E] Col. [4] - Col. [3] [J] JAR 4, Page 1  
 [F] JAR 8 [K] First stage is Col. [4]/Avg. of Current and prior year's Col. [1]. Second stage is from JAR 5, Page 1  
 [G] Col. [5] + Col. [7] [L] - Col. [9] for year of purchase, + Col. [9] for year of sale.  
 [H] Col. [7] + Col. [8] [M] Col. [3]  
 [I] Col. [1] x Col. [10] [N] Col. [12] + Col. [13]

Gas Companies FULL DCF METHOD Based on Market Price for Year Ended														
5/1/2005														
[1] Year	[2] Year End Book	[3] Retention Rate	[4] Dividend Per Share	[5] Earnings Per Share	[6] Retained Earnings Per Share	[7] External Financing Rate	[8] Increment to book from Ext. Fin.	[9] Total Increment to Book	[10] Market Price	[11] Mkt to Book	[12] Expect. Ret. on Equity	[13] Cash Fl. from Stock Trans.	[14] Cash Fl. from Div.	[15] Total Cash Flow
[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	[K]	[L]	[M]	[N]	[O]
First Stage	2005	\$19.07	40.97%	\$1.35	\$2.29	\$0.94								
	2006	\$20.25	43.13%	\$1.38	\$2.43	\$1.05								
	2007	\$21.88	45.66%	\$1.42	\$2.61	\$1.19								
	2008	\$23.52	47.87%	\$1.45	\$2.79	\$1.34								
	2009	\$25.15	49.82%	\$1.49	\$2.97	\$1.48								
	2010	\$26.86	51.10%	\$1.53	\$3.12	\$1.59	0.40%	\$0.11	\$1.70	\$54.99	2.05	12.00%	\$1.53	\$1.53
	2011	\$28.68	51.10%	\$1.63	\$3.33	\$1.70	0.40%	\$0.12	\$1.82	\$58.71	2.05	12.00%	\$1.63	\$1.63
	2012	\$30.62	51.10%	\$1.74	\$3.56	\$1.82	0.40%	\$0.12	\$1.94	\$62.69	2.05	12.00%	\$1.74	\$1.74
	2013	\$32.69	51.10%	\$1.86	\$3.80	\$1.94	0.40%	\$0.13	\$2.07	\$66.83	2.05	12.00%	\$1.86	\$1.86
	2014	\$34.91	51.10%	\$1.98	\$4.06	\$2.07	0.40%	\$0.14	\$2.21	\$71.46	2.05	12.00%	\$1.98	\$1.98
Second Stage	2015	\$37.27	51.10%	\$2.12	\$4.33	\$2.21	0.40%	\$0.15	\$2.36	\$76.30	2.05	12.00%	\$2.12	\$2.12
	2016	\$39.79	51.10%	\$2.26	\$4.62	\$2.36	0.40%	\$0.16	\$2.52	\$81.47	2.05	12.00%	\$2.26	\$2.26
	2017	\$42.49	51.10%	\$2.41	\$4.94	\$2.52	0.40%	\$0.17	\$2.69	\$86.99	2.05	12.00%	\$2.41	\$2.41
	2018	\$45.37	51.10%	\$2.58	\$5.27	\$2.69	0.40%	\$0.18	\$2.88	\$92.88	2.05	12.00%	\$2.58	\$2.58
	2019	\$48.44	51.10%	\$2.75	\$5.63	\$2.88	0.40%	\$0.20	\$3.07	\$99.17	2.05	12.00%	\$2.75	\$2.75
	2020	\$51.72	51.10%	\$2.94	\$6.01	\$3.07	0.40%	\$0.21	\$3.28	\$105.88	2.05	12.00%	\$2.94	\$2.94
	2021	\$55.22	51.10%	\$3.14	\$6.42	\$3.28	0.40%	\$0.22	\$3.50	\$113.05	2.05	12.00%	\$3.14	\$3.14
	2022	\$58.96	51.10%	\$3.35	\$6.85	\$3.50	0.40%	\$0.24	\$3.74	\$120.71	2.05	12.00%	\$3.35	\$3.35
	2023	\$62.95	51.10%	\$3.58	\$7.31	\$3.74	0.40%	\$0.25	\$3.99	\$128.88	2.05	12.00%	\$3.58	\$3.58
	2024	\$67.22	51.10%	\$3.82	\$7.81	\$3.99	0.40%	\$0.27	\$4.26	\$137.61	2.05	12.00%	\$3.82	\$3.82
	2025	\$71.77	51.10%	\$4.08	\$8.34	\$4.26	0.40%	\$0.29	\$4.55	\$146.93	2.05	12.00%	\$4.08	\$4.08
	2026	\$76.63	51.10%	\$4.35	\$8.90	\$4.55	0.40%	\$0.31	\$4.86	\$156.88	2.05	12.00%	\$4.35	\$4.35
	2027	\$81.82	51.10%	\$4.65	\$9.51	\$4.86	0.40%	\$0.33	\$5.19	\$167.51	2.05	12.00%	\$4.65	\$4.65
	2028	\$87.36	51.10%	\$4.96	\$10.15	\$5.19	0.40%	\$0.35	\$5.54	\$178.85	2.05	12.00%	\$4.96	\$4.96
	2029	\$93.27	51.10%	\$5.30	\$10.84	\$5.54	0.40%	\$0.38	\$5.92	\$190.96	2.05	12.00%	\$5.30	\$5.30
	2030	\$99.59	51.10%	\$5.66	\$11.57	\$5.91	0.40%	\$0.40	\$6.32	\$203.89	2.05	12.00%	\$5.66	\$5.66
	2031	\$106.33	51.10%	\$6.04	\$12.36	\$6.31	0.40%	\$0.43	\$6.74	\$217.70	2.05	12.00%	\$6.04	\$6.04
	2032	\$113.53	51.10%	\$6.45	\$13.19	\$6.74	0.40%	\$0.46	\$7.20	\$232.44	2.05	12.00%	\$6.45	\$6.45
	2033	\$121.22	51.10%	\$6.89	\$14.09	\$7.20	0.40%	\$0.49	\$7.69	\$248.18	2.05	12.00%	\$6.89	\$6.89
	2034	\$129.43	51.10%	\$7.35	\$15.04	\$7.69	0.40%	\$0.52	\$8.21	\$264.99	2.05	12.00%	\$7.35	\$7.35
	2035	\$138.20	51.10%	\$7.85	\$16.06	\$8.21	0.40%	\$0.56	\$8.77	\$282.94	2.05	12.00%	\$7.85	\$7.85
	2036	\$147.56	51.10%	\$8.38	\$17.15	\$8.76	0.40%	\$0.60	\$9.36	\$302.10	2.05	12.00%	\$8.38	\$8.38
	2037	\$157.55	51.10%	\$8.95	\$18.31	\$9.35	0.40%	\$0.64	\$9.99	\$322.56	2.05	12.00%	\$8.95	\$8.95
	2038	\$168.22	51.10%	\$9.56	\$19.55	\$9.99	0.40%	\$0.68	\$10.67	\$344.40	2.05	12.00%	\$9.56	\$9.56
	2039	\$179.61	51.10%	\$10.21	\$20.87	\$10.66	0.40%	\$0.73	\$11.39	\$367.72	2.05	12.00%	\$10.21	\$10.21
	2040	\$191.77	51.10%	\$10.90	\$22.28	\$11.39	0.40%	\$0.78	\$12.16	\$392.62	2.05	12.00%	\$10.90	\$10.90
	2041	\$204.76	51.10%	\$11.63	\$23.79	\$12.16	0.40%	\$0.83	\$12.99	\$419.21	2.05	12.00%	\$11.63	\$11.63
	2042	\$218.63	51.10%	\$12.42	\$25.40	\$12.98	0.40%	\$0.89	\$13.87	\$447.60	2.05	12.00%	\$12.42	\$12.42
	2043	\$233.43	51.10%	\$13.26	\$27.12	\$13.86	0.40%	\$0.95	\$14.81	\$477.91	2.05	12.00%	\$13.26	\$13.26
	2044	\$249.24	51.10%	\$14.16	\$28.96	\$14.80	0.40%	\$1.01	\$15.81	\$510.28	2.05	12.00%	\$14.16	\$14.16
	2045	\$266.12	51.10%	\$15.12	\$30.92	\$15.80	0.40%	\$1.08	\$16.88	\$544.83	2.05	12.00%	\$15.12	\$15.12
Internal Rate of Return													9.85%	

Source:

- [A] First Stage is average from Value Line. Second stage is prior years' book plus value from Col.[8]  
 [B] First Stage is (Col. [4]-Col.[3])/Col.[4]). First year of second stage computed by 1-dividends/earnings JAR 5, Page 1  
 [C] First Stage is from Value Line. First year of second stage equal to same dividend growth rates as in last year of first stage.  
 Subsequent years of second stage is Col. [4] x (1-Col. [2])  
 [D] First Stage is from Value line. Second stage is average of current and prior year's value from Col. [1] x Col. [11]  
 [E] Col. [4] - Col. [3] [J] JAR 4, Page 1  
 [F] JAR 8 [K] First stage is Col. [4]/Avg. of Current and prior year's Col. [1]. Second stage is from  
 [G] Col. [5] + Col. [7] [L] - Col. [9] for year of purchase, + Col. [9] for year of sale. JAR 5, Page 1  
 [H] Col. [7] + Col. [8] [M] Col. [3]  
 [I] Col. [1] x Col. [10] [N] Col. [12] + Col. [13]



JAR 7, Page 3

Gas Companies  
VALUE LINE'S EARNINGS PROJECTIONS

Earnings Per Share Forecast by Value Line

	2005	2006	2007	2008	2009
AGL Resources	\$2.30	\$2.40	\$2.52	\$2.63	\$2.75
Almos Energy	\$1.75	\$1.85	\$2.00	\$2.15	\$2.30
Equitables Res	\$3.45	\$3.65	\$3.98	\$4.32	\$4.65
Keyspan Corp.	\$2.35	\$2.50	\$2.73	\$2.97	\$3.20
New Jersey Resources	\$2.70	\$2.80	\$2.90	\$3.00	\$3.10
Nicor, Inc.	\$2.10	\$2.25	\$2.38	\$2.52	\$2.65
N.W. Natural Gas	\$2.10	\$2.25	\$2.33	\$2.42	\$2.50
Oneok Inc.	\$2.30	\$2.30	\$2.53	\$2.77	\$3.00
Peoples Energy	\$2.65	\$2.75	\$2.83	\$2.92	\$3.00
Piedmont Natural Gas	\$1.25	\$1.30	\$1.40	\$1.50	\$1.60
Questar	\$3.25	\$3.65	\$4.07	\$4.48	\$4.90
Southwest Gas	\$1.70	\$1.90	\$2.05	\$2.20	\$2.35
WGL Holdings	\$1.90	\$2.05	\$2.23	\$2.42	\$2.60

\$2.29	\$2.43	\$2.61	\$2.79	\$2.97
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Source: Most Current Value Line at Time of Prep:  
The value for 2006 AND 2007 are extrapolated from Value Line's 2005 and 2008 Values  
where the 2007-2009 single number is interpreted as the number for 2008.

JAR 7, Page 4

Gas Companies  
VALUE LINE'S BOOK VALUE PROJECTIONS

Book Value Per Share Forecast by Value Line

	2005	2006	2007	2008	2009
AGL Resources	\$19.15	\$20.20	\$21.43	\$22.67	\$23.90
Atmos Energy	\$19.50	\$20.75	\$22.58	\$24.42	\$26.25
Equitable Res	\$16.25	\$18.40	\$20.98	\$23.57	\$26.15
Keyspan Corp.	\$26.85	\$28.05	\$28.78	\$29.52	\$30.25
New Jersey Resources	\$18.75	\$21.10	\$23.67	\$26.23	\$28.80
Nicor, Inc.	\$17.35	\$17.65	\$18.02	\$18.38	\$18.75
N.W. Natural Gas	\$21.45	\$22.50	\$23.42	\$24.33	\$25.25
Oneok Inc.	\$16.65	\$15.00	\$16.77	\$18.53	\$20.30
Peoples Energy	\$23.40	\$24.45	\$25.92	\$27.38	\$28.85
Piedmont Natural Gas	\$11.45	\$11.90	\$12.52	\$13.13	\$13.75
Questar	\$19.60	\$24.10	\$29.47	\$34.83	\$40.20
Southwest Gas	\$20.05	\$20.85	\$21.63	\$22.42	\$23.20
WGL Holdings	\$17.50	\$18.25	\$19.28	\$20.32	\$21.35

AVERAGE	\$19.07	\$20.25	\$21.88	\$23.52	\$25.15
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Source: Most Current Value Line at Time of Prep.  
The value for 2006 AND 2007 are extrapolated from Value Line's 2005 and 2008 Values  
where the 2007-2009 single number is interpreted as the number for 2008.

**EXTERNAL FINANCING RATE**  
(Millions of Shares)

Electric Companies Selected by Company Witness	Common Stock Outstanding		Compound Annual	Adjusted For Capital Structure Change
	2005	2008-10		
Alliant Energy	117.60	124.00	1.33%	
Ameren Corp.	196.00	208.00	1.50%	
Cinergy	200.00	209.80	1.20%	
Const. Edison	244.60	254.20	0.97%	
Constell'n egy gp	177.00	179.00	0.28%	
Dominion Resources	335.00	340.00	0.37%	
DTE	176.00	164.00	-1.75%	
Duke	957.00	990.00	0.85%	
Energy East	148.00	152.00	0.67%	
Entergy Corp.	215.00	216.00	0.12%	
FirstEnergy Corp	329.84	329.84	0.00%	
FPL Group	392.60	405.60	0.82%	
Gt Plains Energy	74.40	79.00	1.51%	
Hawaiian Elec.	81.00	81.75	0.23%	
MDU Resources*	122.00	131.00	1.80%	
Northeast Utilities	130.00	135.00	0.95%	
NSTAR	53.60	54.00	0.19%	
OGE Energy	90.00	90.00	0.00%	
Pepco Holdings	192.00	200.00	1.03%	
Pinnacle West Capital*	91.60	91.60	0.00%	
PPL Corp.	189.10	185.00	-0.55%	
Progress Energy	250.00	258.00	0.79%	
Puget Energy Inc.*	100.50	102.00	0.37%	
SCANA Corp.	114.25	122.00	1.65%	
Sempra Energy*	255.00	264.00	0.87%	
Southern Co.	750.00	780.00	0.99%	
Vectren	76.20	77.40	0.39%	
Wisconsin Energy	117.00	117.00	0.00%	
WPS Resources	37.60	40.60	1.94%	
Xcel Energy Inc.*	402.50	434.00	1.90%	

Average	0.68%
Median	0.80%
Round to	0.80%

\*Common stock outstanding is 2005 and then 2007 - 2009, not 2008 - 2010  
Source: Most current Value Line at time of prep. of schedule.

Gas Distribution Companies Selected by Company Witness	Common Stock Outstanding		
	2005	2008-10	
AGL Resources	76.80	78.00	0.39%
Atmos Energy	82.00	97.00	4.29%
Equitable Res	60.00	56.00	-1.71%
Keyspan Corp.	172.00	166.00	-0.88%
New Jersey Resources	27.50	25.00	-2.35%
Nicor, Inc.	44.10	44.50	0.23%
N.W. Natural Gas	27.75	28.50	0.67%
Oneok Inc.	104.00	124.00	4.50%
Peoples Energy	38.00	35.00	-2.03%
Piedmont Natural Gas	77.00	73.00	-1.32%
Questar	85.00	87.50	0.73%
Southwest Gas	36.50	40.00	2.32%
WGL Holdings	48.70	48.70	0.00%

Average	0.37%
Median	0.23%
Round to	0.40%

**COST OF EQUITY INDICATED BY  
INFLATION RISK PREMIUM METHOD**

1 Interest rate on 20-year treasury bonds	4.55% [A]	August, 2025
2 Interest rate on long-term inflation indexed treasury bonds	<u>1.81% [A]</u>	January, 2025
3 Difference	2.74% Line 1 minus Line 2	
4 Round to	<u><u>3.00%</u></u>	

**RISK PREMIUM**

5 Historic Return on Common Stocks Net of Inflation	6.60%	to	7.00% [B]
6 Inflation expectation	<u>3.00%</u>		<u>3.00%</u> Line 4
7 Inflation Risk Premium Indicated Cost of Equity for Company of Average Risk	<u><u>9.60%</u></u>	to	<u><u>10.00%</u></u>
Mid-point	9.80%		

Sources:

[A] New York Times, May 17th, 2005.

[B] Page 12 of Stocks for the Long Run, Second Edition, by Jeremy J. Siegel, 2002, McGraw Hill.

RISK PREMIUM/CAPM METHOD  
EQUITY FOR COMMON STOCK :

JAR :

	Average Risk	Risk Premium Adjustment	Based upon a beta of 0.79 [E]
<i>Based on Long-term Treasury Bonds</i>			
Interest rate on 20 year treasury bonds	4.55% [A]		4.55%
Applicable Risk Premium	4.00% [B]	-0.86% [D]	3.14%
	<u>8.55%</u>		<u>7.69%</u>
<i>Based on Corporate Bonds</i>			
Interest on AAA rated corporate bonds	5.04% [C]		5.04%
Applicable Risk Premium	3.52% [B]	-0.76% [D]	2.76%
	<u>8.56%</u>		<u>7.80%</u>
<i>Based on Intermediate Term U.S. Treasury Bonds</i>			
Interest on 10 year U.S. Treasury Bonds	4.12% [A]		4.12%
Applicable Risk Premium	4.08% [B]	-0.88% [D]	3.20%
	<u>8.20%</u>		<u>7.32%</u>
<i>Based on U.S. Treasury Bills</i>			
Interest on 90 day U.S. Treasury Bills	2.78% [A]		2.78%
Applicable Risk Premium	5.72% [B]	-1.23% [D]	4.49%
	<u>8.50%</u>		<u>7.27%</u>
SUMMARY OF INDICATED RISK PREMIUM FOR EQUITY WITH AVERAGE RISK			
Lowest	8.20%		7.27%
Highest	8.56%		7.80%
Average	<u>8.45%</u>		<u>7.52%</u>

Sources:

- [A] New York Times, May 17, 2005. Interest rates as of May 16, 2005  
 [B] JAR 10, Page 2  
 [C] Yahoo Finance, May 24, 2005  
 [D] Amount in last column determined by multiplying the amount in the first column by the beta.  
 The amount in the middle column is the difference between the amount in the first column and the amount in the last column. Used AAA Corporate bonds.  
 [E] JAR 4, P.3.

RISK PREMIUM BASED UPON ANALYSIS OF  
HISTORIC RETURNS

JAR ,

Compound annual returns from 1926 through 1999:

Large Common Stocks	10.59%
Corporate Bonds	5.92%
Long-term U.S. Treasury Bonds	5.44%
Intermediate Term U.S. Treasury Bonds	5.36%
U.S. Treasury Bills	3.72%
Inflation	3.04%

Average difference from Long-term U.S. Treasury Bonds:

Large Common Stocks	5.15%
Corporate Bonds	0.48%
Long-term U.S. Treasury Bonds	0.00%
Intermediate Term U.S. Treasury Bonds	-0.08%
U.S. Treasury Bills	-1.72%
Inflation	-2.41%

Common Stock Risk Premium Consistent With Current Market Environment:

Long-term U.S. Treasury Bonds	4.00% or less	See graph on JAR 10, Page 3
Corporate Bonds	3.52% or less	Risk premium on large common stocks minus average difference from corporate bonds per above table.
Intermediate Term U.S. Treasury Bonds	4.08% or less	Risk premium on large common stocks minus average difference from corporate bonds per above table.
U.S. Treasury Bills	5.72% or less	Risk premium on large common stocks minus average difference from corporate bonds per above table.
Inflation	6.41% or less	Risk premium on large common stocks minus average difference from corporate bonds per above table.

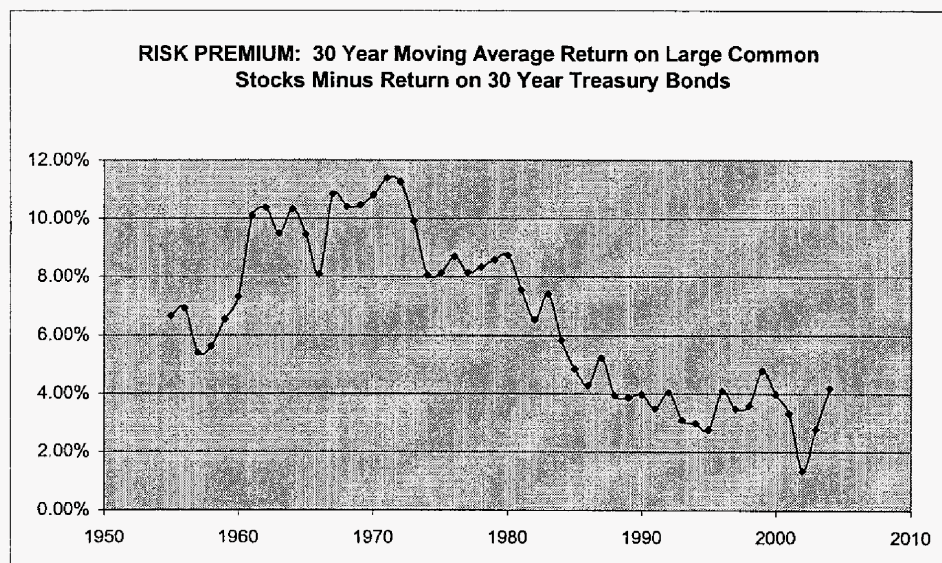
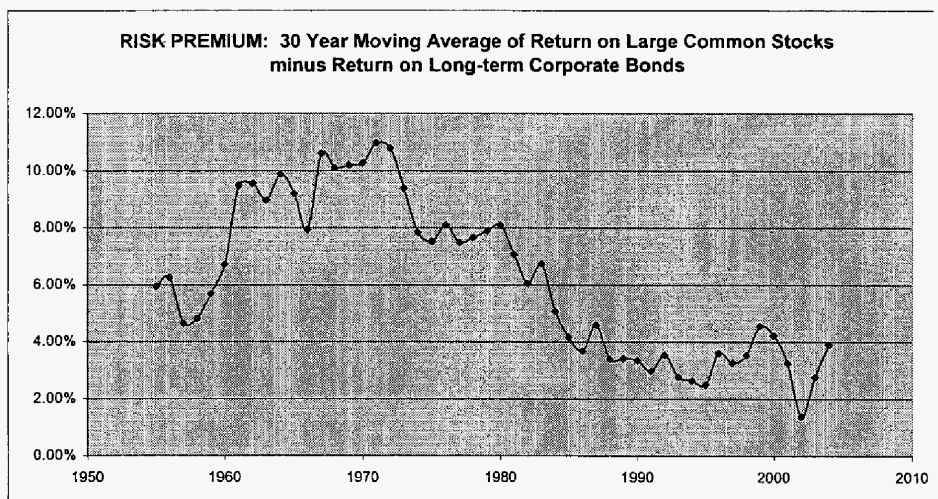
Value of \$100 Invested at end of 1925													
	Large Company Stocks	Long-Term Corporate Bonds	Long-term Government Bonds	Intermediate Term Government Bonds	U.S. Treasury Bills	Inflation	Large Company Stocks	Long-Term Corporate Bonds	Long-term Government Bonds	Intermediate Term Government Bonds	U.S. Treasury Bills	Inflation	\$100 Investment Esc. at Pub. Ut. Geom. Averag
													\$100 Investment Esc. at Pub. Ut. Geom. Averag
1925							100	100	100	100	100	100	
1926	11.82%	7.37%	7.77%	5.38%	3.27%	-1.49%	111.82	107.37	107.77	105.38	103.27	98.51	110.58
1927	37.49%	7.44%	8.93%	4.52%	3.12%	-2.08%	153.47	115.36	117.39	110.14	108.49	96.46	122.31
1928	43.81%	2.84%	0.10%	0.92%	3.56%	-0.87%	220.39	118.83	117.51	111.16	110.28	95.53	135.26
1929	-8.42%	3.27%	3.42%	8.01%	4.75%	0.20%	201.84	122.51	121.53	117.84	115.52	95.72	149.59
1930	-24.90%	7.08%	4.68%	6.72%	2.41%	-6.03%	151.58	132.29	127.19	125.76	118.31	89.94	165.43
1931	-43.34%	-1.85%	-5.31%	-2.32%	1.07%	-9.52%	85.88	128.84	120.44	122.84	119.57	81.38	182.95
1932	-8.19%	10.82%	16.84%	8.81%	0.96%	-10.30%	78.85	143.89	140.72	133.86	120.72	73.00	202.33
1933	53.99%	10.38%	-0.07%	1.83%	0.30%	0.51%	121.42	158.83	140.62	136.11	121.08	73.37	223.76
1934	-1.44%	13.84%	10.03%	9.00%	0.16%	2.03%	119.67	180.81	154.73	148.38	121.28	74.86	247.47
1935	47.67%	9.81%	4.98%	7.01%	0.17%	2.58%	179.72	198.19	162.43	158.78	121.48	77.10	273.66
1936	33.92%	6.74%	7.52%	3.06%	0.18%	1.21%	238.67	211.54	174.65	163.61	121.70	78.03	302.67
1937	-35.03%	2.75%	0.23%	1.58%	0.31%	3.10%	153.76	217.36	175.05	166.17	122.08	80.45	334.72
1938	31.12%	6.13%	5.53%	6.23%	-0.02%	-2.78%	201.61	230.69	184.73	178.52	122.05	78.22	370.18
1939	-0.41%	3.97%	5.94%	4.52%	0.02%	-0.48%	200.79	239.84	195.70	184.50	122.08	77.84	409.39
1940	-9.78%	3.35%	6.09%	2.96%	0.00%	0.98%	181.15	247.87	207.62	189.96	122.08	78.59	452.75
1941	-11.59%	2.73%	0.93%	0.50%	0.06%	9.72%	160.15	254.74	209.55	190.91	122.15	86.23	500.71
1942	20.34%	2.60%	3.22%	1.94%	0.27%	9.29%	192.73	281.37	216.30	194.81	122.48	94.24	553.74
1943	25.90%	2.83%	2.08%	2.81%	0.35%	3.16%	242.85	288.78	200.08	200.08	122.91	87.24	612.38
1944	19.75%	4.73%	2.81%	1.80%	0.33%	2.11%	290.57	281.48	227.00	203.68	123.31	89.26	677.26
1945	36.44%	4.08%	10.73%	2.22%	0.33%	2.25%	396.45	292.96	251.36	206.20	123.72	101.50	748.98
1946	-8.07%	1.72%	-0.10%	1.00%	0.35%	18.16%	364.46	298.00	251.11	210.28	124.15	119.83	828.33
1947	5.71%	-2.34%	-2.62%	0.91%	0.50%	9.01%	385.27	291.03	244.53	212.20	124.78	130.74	916.06
1948	5.50%	4.14%	3.40%	1.85%	0.81%	2.71%	406.46	303.07	252.84	218.12	125.79	134.28	1,013.09
1949	18.79%	3.31%	6.45%	2.32%	1.10%	-1.80%	482.83	313.11	269.15	221.14	127.17	131.86	1,120.40
1950	31.71%	2.12%	0.06%	0.70%	1.20%	5.79%	635.94	319.74	269.31	222.69	128.70	139.50	1,239.08
1951	24.02%	-2.69%	-3.93%	0.36%	1.49%	5.87%	788.69	311.14	258.73	223.49	130.81	147.69	1,370.32
1952	18.37%	3.52%	1.16%	1.63%	1.66%	0.88%	933.57	322.10	261.73	227.13	132.78	148.99	1,515.46
1953	-0.99%	3.41%	3.64%	3.23%	1.82%	0.62%	924.33	333.08	271.26	234.47	135.20	149.91	1,675.98
1954	52.62%	5.39%	7.19%	2.68%	0.86%	-0.50%	1,410.71	351.03	290.75	240.75	136.38	149.15	1,853.50
1955	31.56%	0.48%	-1.19%	-0.65%	1.57%	0.37%	1,855.84	352.72	287.01	239.19	138.50	149.71	2,048.83
1956	6.96%	-8.81%	-5.59%	-0.42%	2.48%	2.86%	1,977.68	328.70	270.97	238.18	141.81	153.99	2,286.95
1957	-10.78%	8.71%	7.48%	7.84%	3.14%	3.02%	1,764.49	357.33	291.18	256.85	146.36	158.64	2,507.08
1958	43.30%	-2.22%	-6.09%	-1.29%	1.54%	1.78%	2,529.57	349.39	273.45	253.54	148.62	161.44	2,772.61
1959	11.90%	-0.97%	-2.28%	-0.39%	2.95%	1.59%	2,832.11	348.00	287.27	252.56	152.00	163.86	3,086.29
1960	0.47%	9.07%	13.78%	11.78%	2.66%	1.48%	2,845.42	377.39	304.10	282.25	157.07	166.28	3,391.07
1961	26.89%	4.82%	0.97%	1.85%	2.13%	0.87%	3,610.55	395.58	307.05	287.47	160.42	167.40	3,750.25
1962	-8.73%	7.96%	8.80%	5.56%	2.73%	1.22%	3,295.35	427.03	328.20	303.46	164.80	169.44	4,147.48
1963	22.80%	2.19%	1.21%	1.64%	3.12%	1.65%	4,046.69	438.38	332.17	308.43	169.94	172.23	4,586.79
1964	16.48%	4.77%	3.51%	4.04%	3.54%	1.19%	4,713.59	457.19	343.83	320.90	175.96	174.28	5,072.62
1965	12.45%	-0.48%	0.71%	1.02%	3.93%	1.92%	5,300.43	455.09	346.27	324.17	182.67	177.63	5,609.92
1966	-10.06%	0.20%	3.65%	4.69%	4.76%	3.35%	4,767.21	456.00	358.91	339.37	191.58	183.58	6,204.12
1967	23.80%	-4.95%	-0.18%	1.01%	4.21%	3.04%	5,910.38	433.43	325.97	342.80	199.64	189.16	6,861.26
1968	11.06%	2.57%	-0.28%	4.54%	5.21%	4.72%	6,564.07	444.57	325.12	358.36	210.04	188.09	7,588.01
1969	-8.50%	-8.06%	-5.07%	-0.74%	6.58%	6.11%	6,006.13	408.80	308.63	355.71	223.85	210.19	8,391.74
1970	4.01%	18.37%	12.11%	16.88%	6.52%	5.49%	6,248.67	483.88	346.61	415.68	238.46	221.73	9,280.60
1971	14.31%	11.01%	13.23%	8.72%	4.39%	3.36%	7,140.91	536.91	391.79	451.93	248.83	229.18	10,283.60
1972	18.98%	7.26%	5.69%	5.16%	3.84%	3.41%	8,496.26	575.89	414.08	475.25	258.49	237.00	11,350.73
1973	-14.88%	1.14%	-1.11%	4.81%	8.93%	8.80%	7,280.71	582.48	409.48	487.16	278.40	257.85	12,553.00
1974	-26.47%	-3.06%	4.35%	5.69%	8.00%	12.20%	5,331.44	564.63	427.30	525.45	288.51	289.31	13,882.62
1975	37.20%	14.64%	8.20%	7.83%	5.80%	7.01%	7,314.74	587.30	466.51	566.59	315.82	308.59	15,353.07
1976	23.84%	18.65%	16.75%	12.87%	5.08%	4.81%	9,058.58	788.02	544.76	639.51	331.87	324.48	16,679.28
1977	-7.18%	-1.71%	-0.69%	1.41%	5.12%	6.77%	8,408.17	781.15	541.01	648.53	348.86	346.45	18,777.73
1978	5.56%	-0.07%	-1.18%	3.48%	7.18%	9.03%	8,959.75	780.60	534.82	671.16	373.91	377.74	20,785.68
1979	18.44%	-4.18%	-1.23%	4.09%	10.38%	13.31%	10,811.82	747.97	528.05	698.61	412.72	428.01	22,965.30
1980	32.42%	-2.76%	-3.95%	3.91%	11.24%	12.40%	14,052.31	727.33	507.19	725.93	459.11	481.09	25,398.90
1981	-4.91%	-1.24%	1.86%	9.45%	14.71%	8.64%	13,382.34	718.31	516.62	794.53	526.64	524.10	28,089.16
1982	21.41%	42.56%	40.35%	29.10%	10.54%	3.87%	16,223.22	1,024.03	725.13	1,025.74	582.15	544.38	31,064.38
1983	22.51%	5.26%	0.65%	7.41%	8.80%	3.80%	18,875.06	1,088.13	729.84	1,101.74	633.38	565.07	34,354.74
1984	6.27%	16.86%	15.48%	14.02%	9.85%	3.95%	21,121.23	1,271.59	842.82	1,258.21	695.77	587.39	37,993.61
1985	32.18%	30.05%	30.97%	20.33%	7.72%	3.77%	27,913.82	1,654.21	1,103.85	1,511.59	749.48	609.53	42,017.91
1986	18.47%	19.85%	24.53%	15.14%	6.18%	1.13%	33,069.50	1,982.57	1,374.62	1,740.45	795.55	616.42	46,468.47
1987	5.23%	-0.27%	-2.71%	2.90%	5.47%	4.41%	34,799.04	1,977.22	1,337.37	1,790.92	830.17	643.60	51,390.43
1988	16.81%	10.70%	9.67%	6.10%	6.35%	4.42%	40,648.75	2,188.78	1,466.69	1,900.17	862.46	672.05	56,833.73
1989	31.49%	16.23%	18.11%	13.29%	8.37%	4.65%	53,449.05	2,544.02	1,732.31	2,152.70	967.16	703.30	62,853.59
1990	-3.17%	6.78%	6.18%	9.73%	7.81%	6.11%	51,784.71	2,716.50	1,839.36	2,362.16	1,042.70	746.27	69,511.07
1991	30.55%	19.89%	18.30%	15.46%	5.60%	3.06%	67,565.78	3,258.81	2,194.36	2,727.35	1,101.09	769.11	78,873.72
1992	7.87%	9.39%	8.05%	7.19%	3.51%	2.90%	72,748.07	3,562.63	2,371.01	2,923.44	1,139.73	791.41	85,016.22
1993	9.99%	13.19%	18.24%	11.24%	2.90%	2.75%	80,015.61	4,032.54	2,803.48	3,252.04	1,172.79	813.17	94,021.16
1994	1.31%	-5.76%	-7.77%	-5.14%	3.90%	2.87%	81,063.81	3,800.26	2,585.85	3,084.68	1,218.53	834.86	103,979.95
1995	37.43%	27.20%	31.67%	16.80%	5.60%	2.54%	111,405.99	4,833.94	3,404.52	3,603.14	1,288.76	856.09	114,993.58
1996	23.07%	1.40%	-0.93%	2.10%	5.21%	3.32%	137,107.36	4,901.61	3,372.86	3,678.81	1,353.80	884.51	127,173.73
1997	33.36%	12.95%	15.85%	8.38%	5.26%	1.70%	182,846.37	5,536.37	3,907.46	3,887.10	1,425.01	899.55	140,644.04
1998	28.59%	10.76%	13.06%	10.21%	4.86%	1.61%	235,103.86	6,132.06	4,417.77	4,394.18	1,494.27	914.03	155,541.12
1999	21.04%	-7.45%	-8.96%	-1.77%	4.68%	2.68%	284,569.72	5,675.24	4,021.94	4,316.40	1,564.20	938.53	172,016.12
2000	-9.11%	12.87%	21.48%	12.59%	5.89%	3.39%	258,645.41	6,405.65	4,885.88	4,859.84	1,656.33	970.35	190,236.15
2001	-11.88%	10.65%	3.70%	7.62%	3.83%	1.55%	227,918.34	7,087.85	5,066.03	5,230.15	1,719.77	965.39	210,386.06
2002	-22.10%	16.33%	17.84%	12.93%	1.85%	2.38%	177,548.39	8,245.30	5,970.52	5,906.41	1,748.15	1,006.84	210,386.0

JAR 1

30 Year Moving Average					30 Year Moving Average				
Returns on Large Company Stocks Bonds	Returns on Long-Term Corporate Bonds	Returns on Long-term Government Bonds	Returns on Intermediate Term Government Bills	Returns on U.S. Treasury Bills	Risk Premium				
					Large Stocks vs. Long-Term Corporate Bonds	Large Stocks vs. Long-term Government Bonds	Intermediate Term Government Bills	U.S. Treasury Bills	
10.23%	4.29%	3.58%	2.95%	1.09%	1955	5.94%	6.65%	7.28%	9.13%
10.06%	3.80%	3.12%	2.76%	1.07%	1956	6.26%	6.93%	7.30%	8.99%
8.48%	3.84%	3.07%	2.86%	1.07%	1957	4.64%	5.41%	5.62%	7.42%
8.47%	3.67%	2.86%	2.79%	1.00%	1958	4.81%	5.62%	5.69%	7.48%
9.20%	3.52%	2.66%	2.57%	0.94%	1959	5.68%	6.54%	6.63%	8.26%
10.27%	3.56%	2.95%	2.73%	0.95%	1960	6.71%	7.32%	7.54%	9.32%
13.27%	3.78%	3.17%	2.87%	0.98%	1961	9.49%	10.10%	10.40%	12.29%
13.25%	3.69%	2.86%	2.77%	1.04%	1962	9.56%	10.39%	10.48%	12.21%
12.40%	3.43%	2.91%	2.78%	1.14%	1963	8.97%	9.49%	9.63%	11.28%
13.03%	3.14%	2.70%	2.61%	1.25%	1964	9.89%	10.33%	10.42%	11.78%
12.00%	2.81%	2.56%	2.41%	1.37%	1965	9.19%	9.45%	9.60%	10.63%
10.53%	2.59%	2.43%	2.46%	1.52%	1966	7.93%	8.10%	8.07%	9.00%
12.63%	2.33%	2.09%	2.44%	1.55%	1967	10.61%	10.84%	10.49%	11.28%
12.31%	2.21%	1.90%	2.39%	1.83%	1968	10.10%	10.41%	9.92%	10.48%
11.99%	1.79%	1.53%	2.21%	2.04%	1969	10.20%	10.46%	9.78%	9.95%
12.53%	2.25%	1.72%	2.64%	2.26%	1970	10.27%	10.81%	9.88%	10.27%
13.46%	2.52%	2.11%	2.91%	2.40%	1971	10.98%	11.39%	10.58%	11.09%
13.45%	2.67%	2.19%	3.02%	2.52%	1972	10.78%	11.26%	10.43%	10.93%
11.99%	2.81%	2.08%	3.08%	2.74%	1973	9.38%	9.91%	8.91%	9.25%
10.18%	2.35%	2.13%	3.21%	2.99%	1974	7.84%	8.05%	6.97%	7.19%
10.20%	2.68%	2.08%	3.39%	3.17%	1975	7.53%	8.12%	6.81%	7.03%
11.30%	3.21%	2.62%	3.78%	3.33%	1976	8.10%	8.69%	7.53%	7.97%
10.82%	3.35%	2.68%	3.79%	3.48%	1977	7.48%	8.14%	7.03%	7.34%
10.86%	3.20%	2.53%	3.85%	3.70%	1978	7.66%	8.33%	7.01%	7.16%
10.85%	2.95%	2.27%	3.91%	4.00%	1979	7.90%	8.58%	6.94%	6.85%
10.87%	2.78%	2.13%	4.02%	4.33%	1980	8.09%	8.74%	8.85%	6.54%
9.86%	2.83%	2.33%	4.32%	4.78%	1981	7.06%	7.68%	5.57%	5.13%
9.98%	3.93%	3.46%	5.15%	5.05%	1982	6.05%	6.53%	4.83%	4.93%
10.77%	4.03%	3.35%	5.29%	5.28%	1983	6.74%	7.41%	5.48%	5.49%
9.44%	4.38%	3.61%	5.66%	5.58%	1984	5.06%	5.83%	3.76%	3.86%
9.46%	5.29%	4.59%	6.34%	5.79%	1985	4.17%	4.86%	3.12%	3.67%
8.84%	6.17%	5.56%	6.85%	5.91%	1986	3.67%	4.28%	2.99%	3.93%
10.45%	5.87%	5.21%	6.69%	5.99%	1987	4.58%	5.24%	3.76%	4.46%
9.70%	6.31%	5.76%	6.64%	6.16%	1988	3.39%	3.94%	2.75%	3.54%
10.29%	6.88%	6.43%	7.40%	6.34%	1989	3.41%	3.86%	2.88%	3.85%
10.15%	6.80%	6.18%	7.34%	6.51%	1990	3.35%	3.97%	2.81%	3.64%
10.26%	7.28%	6.78%	7.79%	6.63%	1991	2.98%	3.48%	2.47%	3.63%
10.87%	7.33%	6.81%	7.84%	6.68%	1992	3.54%	4.05%	3.02%	4.21%
10.46%	7.69%	7.37%	8.17%	6.65%	1993	2.77%	3.09%	2.29%	3.81%
9.95%	7.31%	6.96%	7.64%	6.66%	1994	2.63%	2.99%	2.11%	3.28%
10.68%	8.19%	7.92%	8.36%	6.72%	1995	2.49%	2.77%	2.33%	2.96%
11.65%	8.24%	7.75%	8.27%	6.74%	1996	3.81%	4.09%	3.58%	5.11%
12.12%	8.86%	8.63%	8.52%	6.77%	1997	3.26%	3.49%	3.60%	5.35%
12.67%	9.14%	9.09%	8.71%	6.76%	1998	3.53%	3.58%	3.95%	5.91%
13.72%	9.17%	8.93%	8.68%	6.89%	1999	4.56%	4.79%	5.05%	7.03%
13.21%	8.99%	9.23%	8.54%	6.67%	2000	4.22%	3.99%	4.67%	6.54%
12.24%	8.98%	8.91%	8.50%	6.65%	2001	3.25%	3.33%	3.73%	5.58%
10.66%	9.28%	9.30%	9.76%	6.56%	2002	1.39%	1.36%	1.90%	4.08%
12.19%	9.42%	9.40%	8.69%	6.38%	2003	2.77%	2.79%	3.50%	5.81%
13.74%	9.84%	9.54%	8.57%	6.15%	2004	3.89%	4.20%	5.17%	7.59%
						4.87%	5.15%	5.23%	6.87%

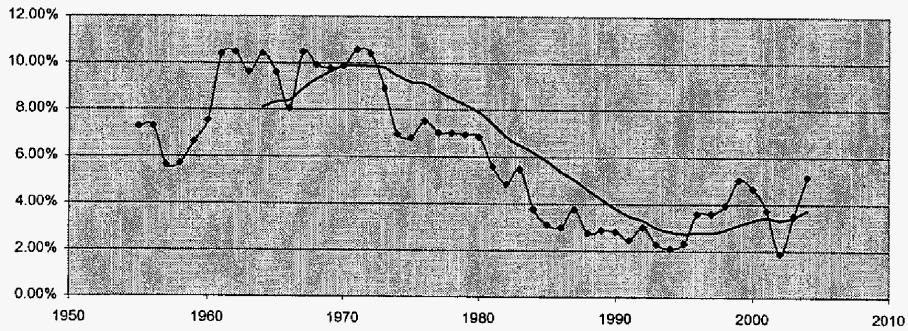
Source: JAR 10, Page 3



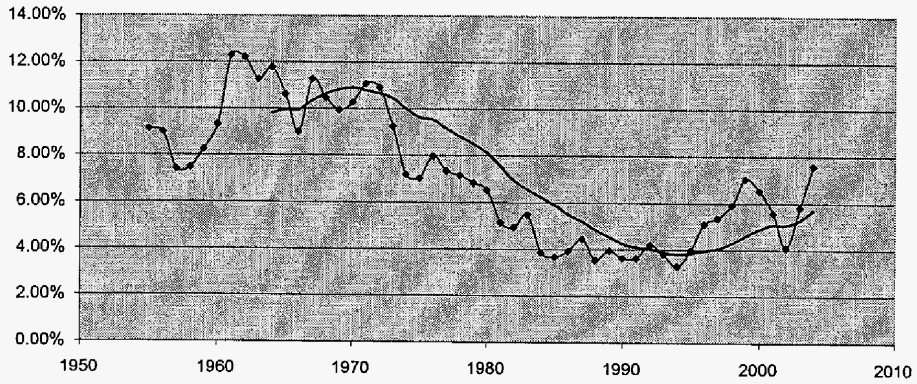


JAR-10  
P. 6

**RISK PREMIUM: 30 YEAR MOVING AVERAGE OF RETURN ON LARGE COMMON  
STOCKS MINUS RETURN ON INTERMEDIATE TERM TREASURY BONDS**

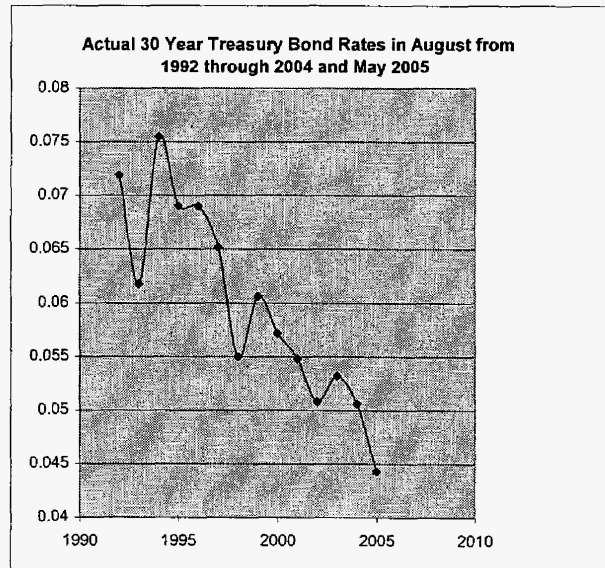


**RISK PREMIUM; 30-YEAR MOVING AVERAGE OF RETURN ON LARGE  
COMMON STOCKS VERSUS RETURN ON SHORT-TERM TREASURY  
BILLS**



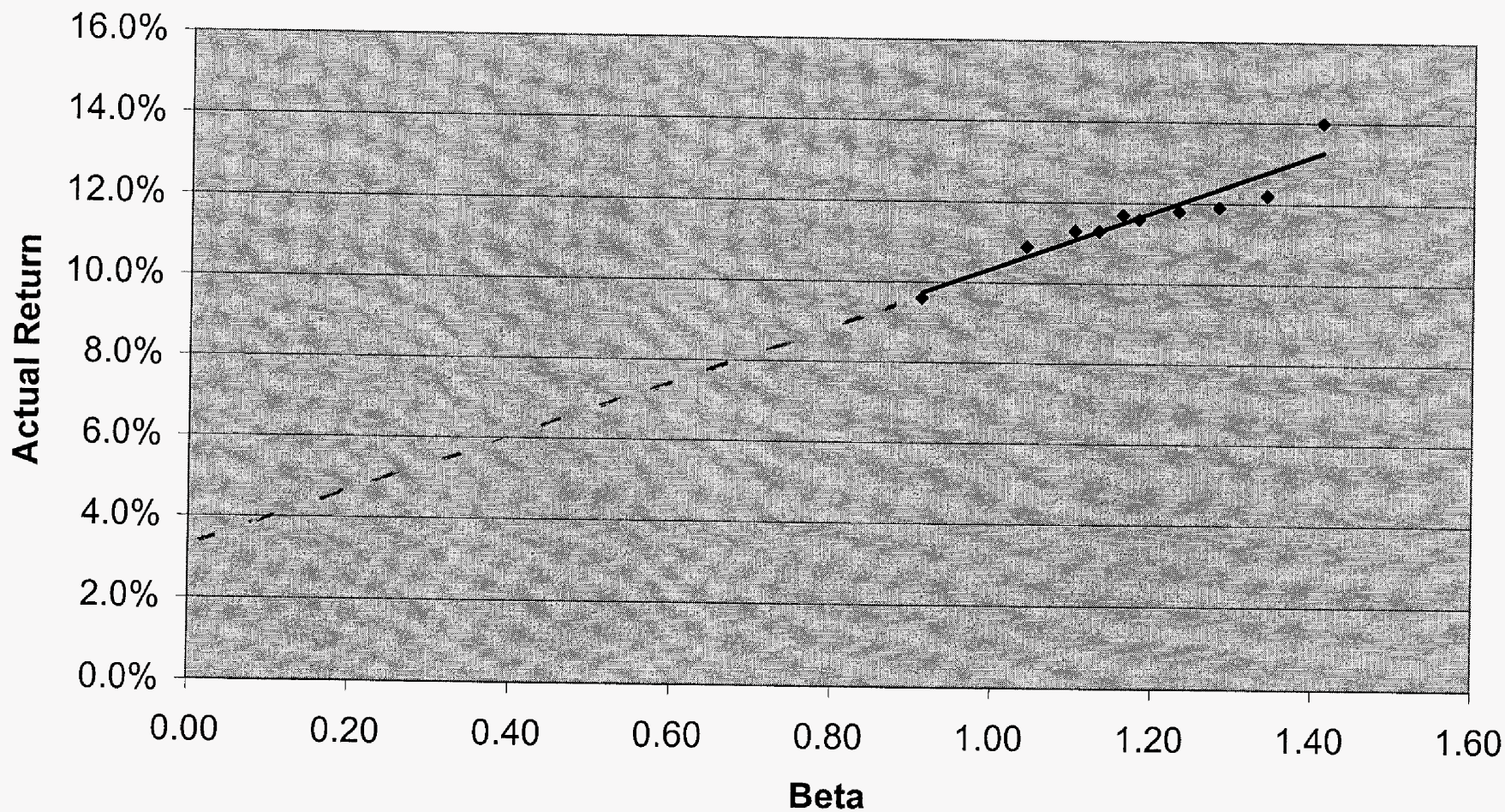
Actual 30 Year Treasury Rate in August	Forecast		Forecast for:		Actual		Difference Between Forecast and Actual		Difference Between Actual at time of VL forecast and Subsequent Actual 30 year Treasury Bond Rate	Source of Value Line Forecast	Source of Value Line Actual
	AAA Corporate Bond Rate	Long-term Treasury Rate			AAA Corporate Bond Rate	Long-term Treasury Rate	AAA Corporate Bond Rate	Long-term Treasury Rate			
1992	7.19%	9.30%	8.80%	1996	7.40%	6.70%	-1.90%	-2.10%	-0.49%	9/25/1992	8/29/1997
1993	6.18%	7.80%	7.00%	1997	7.30%	6.60%	-0.50%	-0.40%	0.42%	9/24/1993	8/28/1998
1994	7.55%	7.80%	7.00%	1998	6.50%	5.60%	-1.30%	-1.40%	-1.95%	8/26/1994	9/3/1999
1995	6.90%	7.50%	7.40%	1999	7.00%	5.90%	-0.50%	-1.50%	-1.00%	9/1/1995	9/1/2000
1996	6.90%	7.50%	7.00%	2000	7.70%	5.90%	0.20%	-1.10%	-1.00%	8/30/1996	8/31/2001
1997	6.52%	6.60%	6.00%	2001	5.90%	5.50%	-0.70%	-0.50%	-1.02%	8/29/1997	8/30/2002
1998	5.50%	6.50%	6.00%	2002	6.50%	5.40%	0.00%	-0.60%	-0.10%	8/28/1998	8/29/2003
1999	6.06%	6.30%	5.80%	2003	5.70%	5.00%	-0.60%	-0.80%	-1.06%	9/3/1999	8/27/2004
2000	5.72%	7.30%	6.00%	2004	5.70%	5.00%	-1.60%	-1.00%	-0.72%	9/1/2000	5/27/2005
2001	5.48%	8.00%	6.00%	2005	5.20%	4.50%	-2.80%	-1.50%	-0.98%	8/31/2001	5/20/2005
2002	5.08%	7.20%	6.50%	2005 **	5.20%	4.50%	-2.00%	-2.00%	-0.58%	8/30/2002	5/20/2005
2003	5.32%	6.50%	6.00%	2005 **	5.20%	4.50%	-1.30%	-1.50%	-0.82%	8/29/2003	5/20/2005
2004	5.06%	6.60%	6.00%	2005 **	5.20%	4.50%	-1.40%	-1.50%	-0.56%	8/27/2004	5/20/2005
2005	4.43%	5/30/2005									
							Average	-1.11%	-1.22%	-0.76%	
							Median	-1.30%	-1.40%	-0.82%	
							High	0.20%	-0.40%	0.42%	
							Low	-2.80%	-2.10%	-1.95%	
2005		6.80%	6.20%	2009						5/27/2005	

\*\* Less than longest forecast was used because actual data is not yet available for longer periods.





**Returns vs Beta from 1926-2004 for each size decile,  
geometric average** Source: Pages 128 and 140 of 2005 "Stocks, Bonds, Bills, and  
Inflation" by Ibbotson Associates



## Schedule JAR 13


COMPARISON OF GEOMETRIC RETURN VS ARITHMETIC RETURN USING  
DR. VANDER WEIDE'S HYPOTHETICAL EXAMPLE

Geometric Return		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Expected Wealth									
Period 1									
Period 2									
Result at End of Period 2									
Value of \$1 after period 1 Based on Geometric Return									
Value of \$1 after period 2 Based on Geometric Return									
Probability As Hypothesized by Dr. Vander Weide									
Expected Return									
Exhibit No. (JWW-7)									
Value in Col. 3 x 1 + Col. 4									
30.0000%									
8.1665%									
-10.0000%									
1.6900									
1.1700									
0.8100									
1.30									
1.30									
0.90									
0.90									
25%									
50%									
25%									
\$									
1.21									

Arithmetic Return		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Expected Wealth									
Period 1									
Period 2									
Result at End of Period 2									
Value of \$1 after period 1 Based on Geometric Return									
Value of \$1 after period 2 Based on Geometric Return									
Probability As Hypothesized by Dr. Vander Weide									
Expected Return									
Exhibit No. (JWW-7)									
Value in Col. 3 x 1 + Col. 4									
30.0000%									
10.0000%									
-10.0000%									
1.6900									
1.1700									
0.8100									
1.30									
1.30									
0.90									
0.90									
25%									
50%									
25%									
\$									
1.23									

Conclusion: Arithmetic Return Overstates Actual Return



1	<b>United Mileage Plus Visa® Card</b> <b>More Miles. Every Day.</b> <b>Earn Award Travel</b>		<b>15,000</b> <b>Bonus Miles</b> <b>United M</b> <b>Visa</b> <b>More Miles. Ev</b>
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**ALL-STAR ANALYSTS****In Search Of the Last Honest Analyst**

Our quest wasn't easy. But we did find a few standouts you can trust. Here, FORTUNE's third annual All-Stars.

FORTUNE

Monday, June 10, 2002

By David Rynecki



How do you know when management is lying?" asks Sallie Krawcheck, the chairman and CEO of research boutique Sanford C. Bernstein. Sitting in her clutter-free corner office, the 37-year-old Krawcheck waits for the perfect punch-line pause. Then, with the slightest of smirks, she leans forward to answer the question: "Their lips are moving."

The quip is telling—and not just because there is plenty of truth to it. No, what's really telling about this joke is the person telling it: a former brokerage analyst who now leads one of Wall Street's most venerated research firms.

During the boom the analyst's job was to cozy up to the company brass, not to question them. Or so the evidence would suggest. Recent disclosures of Merrill Lynch e-mails, in which allegedly independent researchers hyped stocks to the public while privately trashing them, are only the latest exhibits. The pumped-up stocks—no surprise—were those of companies with which Merrill had a lucrative investment-banking relationship. In a settlement with New York State's attorney general, the securities firm has agreed to pay a \$100 million civil penalty, reform its analyst-compensation system, and apologize for failing to address the obvious conflicts of interest. But as FORTUNE and others have pointed out, the numbers have long illustrated the failure of Wall Street research. Last June, during the height of the recession—when even the most optimistic CEOs were unable to hide the bad news—investment analysts couldn't find a stock they couldn't tout. Of 26,451 buy, hold, and sell recommendations, only 213 were sells.

In fact, stock research sank so low during the bubble that it actually became a contrary indicator of a stock's performance. Researchers at the University of California and Stanford reviewed almost 40,000 stock recommendations from 213 brokerages during the year 2000. The most highly rated stocks had a -31% return for the year, according to the study. Meanwhile, the stocks least favorably recommended (that is, the sells) soared an annualized 49%—a differential of 80 percentage points.

Given that, er, performance, one can't help wonder if there are any analysts on Wall Street worth listening to these days.

Which brings us back to Sallie Krawcheck. For years her firm, Sanford Bernstein, has been doing independent stock research for thousands of institutional clients the way it's supposed to be done. The firm does no investment banking whatsoever. But more important still, its sophisticated takes on companies are far more often right than wrong. In other words, this Wall Street firm makes its clients money (see The Bernstein Way).

Other brokerage houses that do little if any banking, such as A.G. Edwards in St. Louis and the newly revamped Prudential Financial, have also been proving their relevance in the recent market turmoil. Both are turning out researchers who consistently make the tough calls.

With these admittedly modest signs of encouragement, we embarked on our annual quest: to see if we could find a few good men and women on Wall Street—analysts who are not only honest but gutsy enough to share that candor with the rest of the world. We looked for researchers who have been not just dead-on with their calls but also accurate across a span of companies in a given sector—and in both bear and bull markets.

To find these elite stock pickers, we returned to Zacks Investment Research in Chicago, which compiles a database of nearly 28,000 stock ratings from some 2,900 investment analysts. For the third year in a row, Zacks provided us with annualized returns for analysts based on the sum total of their upgrades and downgrades, and also crunched the data from the historical records. We began with a handful of consistent earners in each sector, and then sifted through them. The most important quality we looked for was candor. Specifically, we sought out those not afraid to bash the companies they cover. Next, we asked ourselves a key question: As private investors, would we want to pay for this person's wisdom? And make no mistake, that's exactly what you're doing when you use a full-service brokerage—you're paying a premium to trade stocks that you could trade online for pennies.

Finally, we tapped each of our pros for his or her strategies—and favorite stock—for the coming year. In case you were wondering, the portfolio of picks from last year's All-Stars was up an impressive 13% as of press time, compared with a drop of 13% for the S&P 500. Here, our 2002 FORTUNE All-Stars.

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9/24/02

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## Will Grubman Case Tone Down the Exaggeration by Analysts?

By RANDALL SMITH  
And SUSANNE CRAIG

**Y**ESTERDAY'S REGULATORY ACTION against Salomon Smith Barney ratchets up the pressure on stock analysts tempted to tout companies that are investment-banking clients of the securities firms that employ them.

The settlement is notable in large part because it involves so many practices that long have been common on Wall Street.

It alleges, for instance, that superstar analyst Jack Grubman failed to disclose to investors the risks of buying Winstar Communications Inc. shares, that he and a colleague set unrealistic stock-price targets, that they didn't advise investors of their qualms, and that they passed research reports to Winstar to vet before publicly disseminating them.

None of this was unique to Salomon's re-

search reports on Winstar. Indeed, wildly optimistic price targets—virtually all of which turned out to be inaccurate—were issued by many analysts at many firms during the technology-stock bubble. In most cases, the analysts only belatedly lowered their price targets and withdrew their “buy” recommendations, long after a stock already had plummeted. Many failed to share doubts they may have had about a company's or industry's prospects, and often submitted their reports to a company's executives before publishing them—sometimes bowing to pressure to soften caveats in their mostly glowing reports.

Together with the \$100 million penalty paid by

Merrill Lynch & Co. in the spring to settle conflict-of-interest charges by New York state Attorney General Eliot Spitzer, as well as a raft of rule changes adopted this year by the Securities and Exchange Commission, the Grubman case should have a sobering effect, taking some of the most extreme hyperbole from analysts' reports.

Under the newest settlement, Salomon, a unit of Citigroup Inc., agreed to pay a \$5 million fine to the National Association of Securities Dealers to resolve allegations that it issued materially misleading reports in 2001 on Winstar.

So, how much is Wall Street going to have to change to accommodate the new regulatory outlook?

**Journal Link:** Read the NASD complaint against analyst Jack Grubman, as well as the letter of acceptance by Salomon, in the *Online Journal* at [WSJ.com/JournalLinks](http://WSJ.com/JournalLinks).

## NASD Puts Analysts on Notice

Continued From Page C1

change to accommodate the new regulatory outlook?

“Hopefully, this will have the effect of making analysts more cautious about

HEARD ON  
THE STREET

what they're recommending, and more faithful to their private views in their public pronouncements,” says Mary Schapiro, vice chairman and president of regulatory policy and oversight at the NASD. She adds, however, that the Salomon case was unusual. “This was not a case where an analyst was bullish about the stock and at the end of the day it turns out not to have been a great stock. This was a case where there was no reasonable basis for the target price that they gave.” The NASD won't elaborate, but it has other cases on its plate.

Exactly how Wall Street will change remains to be seen.

The NASD action against Mr. Grubman puts analysts on notice that their written reports—as well as blast voice-mails and other communications with investors—must be realistic and based in fact. The new rules of the road should also effectively reduce the paychecks of star analysts who have benefited financially from helping their firms attract investment-banking business. So for those analysts keen on incisive and solid research, the regulatory actions give them more freedom to go against investment-banking clients and issue “sell” ratings.

“In conversations with analysts, I have noticed a much greater willingness to speak freely and openly, and in some cases negatively, about companies they follow, and that's a change from a year ago, let's say,” says Jonathan Cohen, a former Internet-stock analyst at Merrill Lynch. Mr. Cohen was replaced by the more-bullish Henry Blodget, whose sometimes derogatory e-mails about stocks Merrill was recommending were at the heart of the Spitzer probe.

One of the most convinced that change could be in the offing is Mike Corasaniti, director of research at boutique investment firm Keefe, Bruyette & Woods Inc. and an adjunct professor in the business department of Columbia University. He says yesterday's fine could substantially alter the face of research on Wall Street.

Not only may firms be less likely to set target prices, but the suggestion that there should be greater disclosure surrounding the risks associated with investing in a company could add volumes to

each research report. “You might want to buy stock in paper companies, because reports are going to end up being a lot longer,” he says. Normally, he says a analyst will outline investing risks in his or her initial report, and update them in subsequent reports only if changes occur.

He says Mr. Grubman is an “extreme exception” to the rule among Wall Street analysts, but is now setting the standard for behavior. “A lot of us would have gone to medical school instead if we were interested in all this litigation, it is very unfortunate,” he says.

However, other veterans are skeptical that the new rules can separate analysts quite so easily from compensation based on underwriting or merger advice. David Dreman, chairman of money manager Dreman Value Management in Jersey City, N.J., doubts there will be major changes without more drastic action. “It seems to me you would almost have to separate the investment banking from research to curb the abuses,” he says.

Mr. Dreman believes the fines being paid, from yesterday's \$5 million penalty against Salomon, or the \$100 million Merrill had to pay, are so small relative to the hundreds of millions of dollars these firms stand to make on investment-banking deals that change will be difficult even in the face of new rules. “The bottom line is how much revenue does a analyst bring in,” he says. “That is the value of research to these firms.”

During the 1980s and 1990s, analysts often served as quasiadvocates for companies that hired their firms for investment-banking work, accompanying them on road shows to sell their stock, setting up one-on-one meetings between management and institutional investors, and proffering their access to management to give an unofficial version of the companies' view of business developments.

While some professional money managers seemed to accept this “investor relations” role of the underwriter's analysts as the company's voice on Wall Street the practice obviously led to a skewed version of the truth in some cases—misleading some individual investors, who suffered huge losses when the stock-market bubble burst and who may have taken the analyst's views at face value.

In the Winstar case, Mr. Grubman acted as a partisan for the company in a protracted battle with short seller Manuel Asensio, short sellers sell borrowed shares, hoping to replace them later with cheaper ones after a stock drops in price.

By sticking to his guns to the bitter end, Mr. Grubman wound up keeping an unrealistically high price target.



C1

## Massachusetts Claims CSFB Stock Reports Led Investors Astray

By SUZANNE CRAIG

**S**OME CREDIT SUISSE First Boston stock research analysts had an internal code to describe which stocks to avoid, but there was one problem: They didn't let all investors in on the secret.

That is one of the allegations made yesterday by Massachusetts state securities regulators, in the latest set of claims that Wall Street analysts issued overly rosy research reports to win lucrative investment-banking business. William Galvin, secretary of the Commonwealth of Massachusetts, filed an administrative complaint against the big securities firm, owned by Credit Suisse Group.

~~The complaint alleges that CSFB analysts~~  
allowing its investment bankers to control the  
research process. ~~CSFB analysts~~  
in order to win business from clients.

In the complaint, Massachusetts accused CSFB of routinely trashing stocks privately while publicly recommending them to investors, and of allowing investment bankers to control almost every aspect of the research process. Moreover, Mr. Galvin alleges the firm's analysts misled investors about the initial public offerings of companies that the firm helped to finance.

In one example of research doublespeak, known internally as the "Agilent Two-Step," CSFB analyst Tim Mahon told a colleague in an e-mail how to handle his desire to slap a "neutral" rating on a company stock: "That's when in writing you have a buy rating ... but verbally everyone knows your position."

CSFB said in a prepared statement that Mr. Mahon's e-mail was a misinterpretation of his position.  
Please Turn to Page 5M, Column 2

10/22/02

# State Files CSFB Complaint

Continued From Page C1

Galvin's complaint was "riddled with misleading statements and inaccuracies" and that his office took out of context a handful of statements from among millions of pages of documents the firm provided. Mr. Quattrone and Mr. Mahon, through a company spokeswoman, declined to comment.

The complaint, which echoes one filed earlier this year by New York Attorney General Eliot Spitzer against Merrill Lynch & Co., will no doubt add to investor concern that Wall Street peddles research it didn't believe only to get its hands on the much more lucrative investment banking fees. In May, Merrill agreed to pay a \$100 million penalty and change how it monitors and pays its stock analysts to settle the allegations against it.

"The presumption that every firm engaged in this behavior is fair," says Roy Smith, a professor of finance at New York University. "It reminds me of how we used to talk in the locker room after a football game. That talk happens all the time, but it would sure be embarrassing if anyone ever recorded it."

The latest civil charges come amid an industrywide push by regulators to reach a global settlement on conflicts on research. CSFB recently rejected settlement requests from Massachusetts, saying Mr. Galvin's efforts threaten to undermine the industry efforts to find a way to separate research from investment banking. Earlier this month, CSFB says, it proposed to state and federal regulators a structure that would sever its research department from the firm's investment-banking division.

Indeed, Mr. Galvin faced pressure from other regulators before filing the case. He says that as late as Friday, Mr. Spitzer had called, hoping to talk Mr. Galvin out of publicly discussing his complaints about CSFB. Mr. Galvin, however, remains unconvinced that a global settlement negotiated behind closed doors is the right route. Said Mr. Galvin

in an interview: "These firms have to pay a public price."

The state is seeking a fine of \$2 million. It also is looking to prod CSFB to separate its research department from investment banking; ban analysts from marketing investment-banking services, and insure that compensation for analysts isn't tied to investment-banking business.

Among the complaints certain regulators have with CSFB: When Mr. Quattrone joined CSFB in mid-1998, he obtained an unusual degree of autonomy for his group, which included research analysts reporting jointly to him and the firm's top research executives.

The action is another blow to CSFB, which agreed to pay \$100 million in January to settle civil charges by the Securities and Exchange Commission and National Association of Securities Dealers that the firm's brokers charged excessive commissions to hedge funds in exchange for allocations of hot initial public offerings. CSFB neither admitted nor denied wrongdoing.

Massachusetts already had referred its findings to New York's Mr. Spitzer for possible criminal charges under New York's Martin Act, which allows criminal sanctions without proof of intent to commit a crime. Massachusetts was handed the authority to investigate CSFB earlier this year when state regulators divided investigations into the research activities of securities firms.

Mr. Galvin said in the interview that he was taken aback by how "brazen" all the Wall Street firms appear to have been in their pursuit of investment-banking spoils. For instance, he points to one e-mail in which a CSFB venture-capital client sent a note to Mr. Quattrone, noting that the banker had promised CSFB would invest money in a venture, anywhere from \$1 million to \$3 million, "to help justify valuations." CSFB says that it has funds routinely invested in private companies and that nothing is improper about those investments.

In another e-mail, CSFB analyst Kevin McCarthy says that, partly because of pressure from various investment bankers, he "put his reputation on the line to sell this piece of crap calling in favors from very important clients" and that the issue turned out to be an "embarrassment" to him and the firm.

Some of the e-mails detailed in yesterday's complaint already had surfaced. In one, former CSFB Internet analyst Lise Buyer explained CSFB had a policy of doling out shares of hot initial public offerings of stock to investment-banking clients in a bid to win business.

"If you take your company public with Bank X, you will most likely receive shares of Bank X's next 5 (a random number) deals. So it becomes something of a 'you scratch my back, I will scratch yours.'"

CSFB says Ms. Buyer, as an analyst,

10/22/02

# **STOCKS, BONDS, BILLS, AND INFLATION 1986 YEARBOOK**

**MARKET RESULTS FOR 1926-1985**

**IBBOTSON ASSOCIATES  
CAPITAL MANAGEMENT RESEARCH CENTER  
Chicago, Illinois**

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# CONTENTS

	<u>Page</u>
List of Exhibits.....	iv
Acknowledgements.....	v
I. INTRODUCTION.....	1
A. Description of this Volume.....	1
B. Highlights of the 1985 Markets.....	4
C. Companion Services.....	5
II. HISTORICAL RETURNS.....	7
A. Overview.....	7
B. Description of Basic Series.....	15
C. Presentation of the Data.....	22
III. COMPONENTS OF SECURITY RETURNS.....	33
A. Description of Derived Series.....	34
B. Presentation of the Data.....	42
C. Component Time Series Behavior.....	48
IV. HIGHLIGHTS OF THE HISTORICAL DATA.....	55
A. Common Stocks.....	55
B. Small Capitalization Stocks.....	57
C. Long-Term U.S. Government Bonds.....	59
D. Long-Term Corporate Bonds.....	60
E. U.S. Treasury Bills and Inflation.....	61
V. HOW TO USE THE SBBI DATA: QUESTIONS AND ANSWERS.....	65
APPENDIX A: Rates of Return for all Yearly Holding Periods From 1926 to 1985.....	93
APPENDIX B: Monthly Returns and Cumulative Wealth Indices, January 1926 to December 1985.....	110
APPENDIX C: Brochure Describing the Stocks, Bonds, Bills, and Inflation Yearbook, Quarterly, and Monthly Publications and SBBI/PC for Microcomputers.....	147

**V. HOW TO USE THE SBBI DATA:  
QUESTIONS AND ANSWERS**

Over the last several years, we have been asked numerous questions about the historical data and especially about the use of historical data to forecast future returns of stocks, bonds, bills, and inflation. The 1982 edition of the Ibbotson-Sinquefield monograph explained in some detail the philosophy, method, and results of the forecasting techniques we developed. In this volume, consideration of the future is limited to this chapter, wherein we try to convey the forecasting technique in an intuitive and not too technical manner. We also include here answers to some of the most frequently asked questions about using SBBI data for estimating debt and equity cost of capital (used in regulated rate setting, security analysis, etc.); discount rates for valuing future cash flow streams; and company- and project-specific cost of capital for capital budgeting and project selection.

1. Q. The 1982 edition of the Ibbotson-Sinquefield Stocks, Bonds, Bills, and Inflation presented a lognormal model for forecasting the future. This volume, like the last two Yearbooks, excludes the model. Why the difference?

A. Since forecast returns in nominal terms are based on changing U.S. government bond yield curves, forecasts tend to become out of date rather quickly. Thus it is more appropriate to include



numerical Market Consensus Forecasts<sup>TM</sup> in our Quarterly Service, which is distributed less than 20 days after quarter-end, and only discuss the principles in a Yearbook intended as a year-long reference source.

2. Q. Do you still use the lognormal model of forecast returns presented in the 1982 volume?

A. We use both the lognormal model and a simulation model. Both equity risk premia and small stock premia have distributions which differ substantially from the lognormal. It is therefore conceptually better to use a "bootstrapping" technique -- one which uses the actual past distribution without attempting to characterize it as normal, lognormal, etc. The simulation model presented in the July 1976 Journal of Business article and the 1977 Ibbotson-Sinquefeld monograph is one of the simplest and best bootstrapping models, and we have used it extensively in the Quarterly Service beginning with the second quarter of 1984.

For assets with very wide variability of returns, such as small stocks, however, the simulation model gives counter-intuitive results. We therefore continue to use the lognormal model as a check on the results of the simulation model.

3. Q. Without getting into specifics, what is your philosophy of forecasting asset returns?

A. Our approach is to infer the market's forecast of asset returns as contained in two sources of market data. One source is the historical data on security and component returns, and the other source is the estimates of future interest rates as revealed in a U.S. government bond yield curve.

We believe that the component historical returns which have followed a random walk in the past will continue to do so in the future, whereas the component returns which have followed a trend will continue to follow trends in the future. We believe that the yields on bonds reflect consensus forecasts of nominal interest rates as well as inflation rates.

This approach to forecasting is consistent with efficient capital market theory. This theory suggests that the market price of an asset reflects all the information currently available about the asset. Stated another way, securities are fairly priced.

We also prefer to look at efficient market forecasts as probability distributions rather than as specific predictions. To give a hypothetical example, we might forecast that common stock returns in the year 1990 will be 15 percent. While this (in the confines of the hypothetical example) would reflect the market's expected return on that category of asset, it would be more useful

to know that common stocks have a 5 percent probability of returning as little as -20 percent or worse, and a 5 percent probability of returning as much as 50 percent or better in that year. These estimates of the variability of asset returns should be based on historical observations of the variability of the relevant component returns.

4. Q. Can efficient market forecasting techniques be used to make any money in the market?

A. No, they are market consensus forecasts, or readings of what the market itself is forecasting, so that they cannot be used to beat the market. Market consensus forecasting is useful, though, in evaluating the risks involved in investing in various classes of securities and in determining the expected rewards from taking these risks.

5. Q. Give an example of your forecasting method.

A. Common stock total returns are (from Chapter IV) the sum of the equity risk premium, the real riskless interest rate, and the inflation rate. The equity risk premium has historically followed a random walk centered on an arithmetic mean of 8.4 percent, or 6.2 percent compounded annually.



The real riskless rate and the inflation rate both follow trends; that is, these two series have high serial correlations, and this year's rate is statistically related to last year's rate. The real riskless rate is now at historically high levels, but we expect that it will follow its historical pattern of gradually reverting toward its long-term mean of 0.4 percent.

(This type of behavior for a return series is called an autoregressive process.) Therefore, we expect declining (but positive) real riskless rates in the future. The average rate over multiple future years is a mixture of high rates in near-term years and lower rates in far-off years, so that our forecast of the average rate would depend on the number of years forecasted.

The inflation rate, which also statistically follows a trend, varies a great deal from year to year. To forecast future inflation on the basis of past trends would give only a very approximate forecast. Fortunately, the market clearly expresses its own forecasts of the inflation rate in the yield curve. If there were no inflation, the yield curve would reflect (1) the real riskless rate, which historically has been near zero percent; (2) the maturity premium, which can be estimated for each time to maturity; and (3) the default premium for the class of bonds under examination. But the market prices bonds in such

a way that the investor will be compensated for inflation as well as for the other factors. By looking at the difference between the observed yield curve and what the yield curve would be if inflation were not a factor, we can observe the market's assessment of future inflation. Since the yield curve changes daily, we will not make a specific inflation forecast here. However, we can safely state that the market expects inflation rates will be higher during the remainder of the twentieth century than rates were on average in the period 1926-1985.

Our forecast of total common stock annual returns for a given long-run future period, then, is the sum of the expected equity risk premium (6.2 percent), the expected real riskless rate over that future period as given by the autoregressive process, and the expected rate of inflation for that future period as given by the present yield curve.

6. Q. Your forecast method uses the yield curve to forecast expected one-year interest and inflation rates each year into the future. How well has this procedure worked in the past?

A. Yield curve forecasts have not been very accurate in the past. However, after allowing for maturity premiums, the interest rate forecasts have been unbiased. After removing real

interest rates, the inflation forecasts have also been unbiased. Furthermore, we know of no way to make more accurate forecasts. We can also estimate the degree of our forecasting error.

7. Q. You have stated that you expect the equity risk premium to remain at its historical mean because it follows what is known in statistics as a random walk. Is there also an intuitive, fundamental reason why you expect this?

A. We assume that both (1) the equilibrium price, or market compensation, for a given amount of risk, and (2) the amount of risk in common stocks will not change over time.

8. Q. Much academic work suggests that the returns on common stocks follow a random walk, while you assume that instead, equity risk premiums follow a random walk. Can they both follow a random walk?

A. The returns on common stocks have been broken down into two components -- the returns from holding a riskless security (Treasury bills) plus the return from the risk premium. The returns from holding Treasury bills do not follow a random walk.

Thus, equity risk premiums and common stock returns cannot both follow a random walk. We assume the expected return from taking risk (the equity risk premiums) is constant through time, i.e., it is the risk premium that behaves randomly. Since most of the variability from common stock returns arises from the risk premium, some researchers have mistakenly concluded that the whole of the common stock return follows a random walk. Our view is that only the risk premium component follows a random walk.

9. Q. Do you expect any of the other component returns to follow a random walk and remain at the same levels on average as in the past?

A. Yes. We expect small stock, default, and maturity premia to follow random walks in the future.

10. Q. You have said that the equity risk, small stock, default, and maturity premiums can be predicted using the assumption of a random walk around historical levels; the real riskless rate can be predicted using the historical trend; and the inflation rate can be forecasted, using present bond yield information. Is this all the information that you need to make your forecasts?

A. Yes. Since all of the total asset return series are made up of these components, we can add the appropriate ones together and forecast the return on each category of asset.

11. Q. Most forecasts incorporate estimates of GNP, employment, productivity, and other such macro-economic variables. You seem to ignore them completely. Why?

A. The various macro- and micro-economic variables determine the prices of securities. In fact, the prices of securities are themselves forecasts of what goes on in the economy. Since we use the prices of securities as the inputs into efficient market forecasts, these economic variables are implicitly contained in our forecasts.

12. Q. We see many forecasts from economists, financial analysts, long-range planners, etc. Are market consensus forecasts in any way superior to theirs, and if so, how?

A. If the assumption of market efficiency is correct, then at the very least Market Consensus Forecasts are not inferior to theirs. In fact, the forecasts of economists, financial analysts, long-range planners, etc., help to determine the prices in the market. Since we use these prices, we are, once again, implicitly incorporating their forecasts into the Market Consensus Forecasts.

13. Q. You treat all years in the historical period equally. Would it not be better to emphasize recent events by weighting recent returns more heavily than distant returns?

A. In the absence of any particular reason to weight particular years more heavily than others, we believe it is appropriate to weight all of the historical years equally. In general, our model attempts to maintain a spirit of neutrality or objectivity in the forecast it produces. Any particular weighting scheme runs the risk of imparting subjectivity and biases into the historical data.

14. Q. During the last 60 years, there was a severe depression, three wars, a period of pegged interest rates, several periods of wage and price controls, periods of inflation and deflation, etc. Are you suggesting that these events will happen in the future with the same frequency as they have in the past?

A. We are not forecasting which specific events will occur in the future since we have no way of knowing what will happen. However, we do believe that historical events are not unrepresentative of the types of events that will occur in the future. Thus, we expect the rate of return effects of these event-types to be experienced again.

15. Q. The variability of stock market returns does not seem to be constant over the historical period. It seems to have been more variable during the depression and less variable more recently.

Also, bond returns appear to have become more variable recently.

Does the market consensus forecasting method take this into account?

A. In principle it would be possible to take the changes in variability into account. However, this would make the forecasting procedures much more complicated with only limited benefits.

16. Q. Why do you choose a 60-year period over which to measure your historical results?

A. The 60-year period of time is itself arbitrary. We need a period long enough to include all types of events. We limit the period only because it is more difficult to obtain high-quality data prior to 1926.

17. Q. Your historical results show that the stock market had a compounded annual return of 9.8 percent over the last 60 years. The yield on high quality corporate bonds is now somewhat higher than that. What incentive is there to take the additional risk in buying stocks?

A. The relevant relationships are between risky and riskless asset returns, or between asset returns and inflation. Stocks have outperformed riskless U.S. Treasury bills by a geometric average (the correct average to compare with a bond yield) of 6.2 percent per year, and have yielded a 6.6 percent compound annual return in excess of inflation. High-grade corporate bonds have returned less

than 2 percent in excess of either Treasury bills or inflation. Since we expect these relationships to continue in the future, stocks should be expected to outreturn bonds. They will, however, have more risk.

At the present time, expected returns on both stocks and bonds are substantially higher than their historical returns, due to the impoundment of high market-anticipated inflation in the expected return on both types of assets. Stock market historical returns, which impound only the relatively low historical inflation rate of 3.1 percent, cannot be compared with high current expected returns on either stocks or bonds (the current bond yield being the expected bond return).

18. Q. During the last 60 years, the rate of inflation has been only 3.1 percent, whereas you regard that high long-term bond yields indicate a significantly higher expectation of inflation in the future. How do different levels of inflation rates affect your estimates of returns on common stocks, long-term government bonds, and long-term corporate bonds?

A. The forecast returns on stocks and bonds are in nominal terms and thus impound the different levels of expected inflation. Since we project substantially higher inflation than we have experienced in the past, the expected returns on the various assets are also higher than the historical returns.



19. Q. You say that future nominal returns on common stocks will incorporate significantly higher expected inflation rates than have been realized historically. Yet, the experience of the last two decades suggests the opposite: that high inflation rates are accompanied by poor stock market returns. How do you reconcile recent events with your forecasting procedure?

A. When high inflation rates are anticipated -- that is, reflected in today's yield curve -- these higher rates tend to be impounded in the returns of common stocks. During some periods, such as the decade of the seventies, unanticipated increases of inflation occur. There is some evidence that unanticipated inflation tends to be detrimental to stock returns since it generally happens during periods of great uncertainty. Since our model uses the yield curve to forecast inflation rates, only anticipated inflation rates are incorporated into our projected common stock returns. We admit that there is even some evidence that stock returns are negatively related to anticipated inflation. However, the bull market of 1979-1980 (during high inflation) ran counter to that evidence, as did the minor bear market of late 1983-early 1984 which occurred in a period of relative price stability. We suspect that if researchers were to look again today, they would not find the relationship. In any case, we ignore this evidence since it is counter to our efficient capital market assumption.

20. Q. The yield curve changes every day. Do your forecasts also change every day, and if so, what good are they?

A. It is true that the yield curve changes every day, and it is also true that changes in the yield curve will change our forecasts every day. The yield curve reflects the changing anticipations of the market place, which continually revises its estimates. It is therefore necessary that we incorporate the latest yield curve into our forecasts. As a practical matter, the yield curve changes are relatively small during short periods of time, so that it is not necessary for us to make abrupt changes in our forecasts.

Furthermore, our forecasts are very stable in real terms because it is the inflation rate component of the yield curve which is by far the most variable.

21. Q. You say that the real rate of interest has been historically 0.4 percent and you use the past series to estimate the future. How does this reconcile with the more conventional estimate that the real rate of interest is in the range of 3 to 4 percent?

A. These estimates were obtained by comparing the yields on high-grade corporate bonds to concurrent inflation rates. We have seen by our analysis that a long-term bond yield incorporates year-by-year expectations (forward rates) over the life of the bond. The components of these interest rates are the expected inflation rate, the expected real interest rate, the expected maturity

premium, and -- for corporate bonds -- the expected default premium. Thus, subtracting expected inflation rates from a corporate bond yield still leaves the default premium and the maturity premium as well as the real interest rate. Even more important, today's corporate yield reflects future anticipations of these three components and therefore should not be matched with concurrent inflation rates.

22. Q. Last year's (1985) real riskless rate was approximately 4 percent. How does this conform to your statement that the real riskless rate is near zero?

A. The real riskless rate varies from year to year and may be positive, as from July 1980 to December 1985, or negative, as in most of the 1970's. On average, the rate has been near zero -- 0.4 percent. We find that the real riskless rate tends to drift toward its long-term mean, so that our long-term forecast of the rate is closer to zero than is the present rate.

23. Q. How many years into the future can you forecast?

A. As far out as there is a long-term bond available to be inserted into the yield curve. For Treasury bonds, there is typically a 30-year bond, so that one could make 30-year forecasts.

24. Q. Some government bonds have much lower yields than others even though they have approximately the same maturity dates. Which bonds should we use to make up the yield curve?

A. Many of the government bonds trade at unusual prices because of their special tax status. For example, some bonds are called flower bonds and enable the holder to pay estate taxes by tendering the bond at par value. As these bonds are not bought primarily for their yields but for their tax benefits, they are not included in the yield curve.

25. Q. In what ways are your forecasts consistent with efficient capital markets?

A. Our forecasts employ the market efficiency assumption in two principal ways. First, we use the yield curve to forecast future expected interest and inflation rates. Since the prices of the bonds that make up the yield curve are market determined, our interest and inflation rate forecasts are market determined. Secondly, our forecasts of the four risk premiums are based on the assumption of random walk behavior. Neither of the above procedures represents an attempt to outguess the market.

26. Q. The ranges of some of your forecasts seem to be far too wide to be of any practical value. What good are such wide forecasts?

A. Knowing the risk contained in the various asset categories over various periods of time in the future can be just as important and useful as knowing the expected returns for those assets. Wide forecasts simply reflect the large risks inherent in some of the assets, particularly common stocks and small stocks. Forecasts that understate risks are not only useless, but can lead to harmful investment decisions.

27. Q. In a world of ERISA, where pension funds have to be actuarially funded, should your forecasts have any bearing on actuarial assumptions?

A. Any assumptions that affect the funding of pension plans should be based on realistic forecasts. In that regard, our forecasts and our forecasting procedure have an obvious bearing on the assumptions used in pension planning.

28. Q. Most portfolios are made up of combinations of stocks, corporate bonds, government bonds, etc. How do you use your procedures to estimate returns of the various portfolio mixes?

A. Just as we estimate the returns from common stocks as the combination of the risk-free component plus a risk premium for stocks, we can compute the returns for a portfolio mix by adding the forecast returns given by our model for stocks, corporate bonds, and Treasury bills, each weighted by their weights in the portfolio.

Returns from selected portfolio mixes are printed in some of the tables in the Winter edition of our Quarterly Service. It is not possible to add sorted percentiles of components, since our portfolios are more diversified than individual components. A number of commercially available software programs, called asset allocation programs, calculate probability distributions of expected returns for multi-asset portfolios, taking into account the covariances between the assets held (i.e., the effects of portfolio diversification).

29. Q. Your stock market total returns are from investing in Standard and Poor's Composite Index. Suppose an investor held a high-beta or a low-beta portfolio -- how would this affect his historical and future returns?

A. Empirical evidence suggests that high-beta portfolios outperform low-beta portfolios on average. This has happened over the last 60 years and we would also anticipate that it will happen in the future. The expected reward is not without its cost, since higher beta portfolios have higher risks or wider distributions of returns.

30. Q. If an investor did not hold the market but rather held a highly undiversified portfolio, how would this have affected his historical and future returns?

A. On average, undiversified portfolios have neither outperformed nor underperformed diversified portfolios historically. However, the risks of undiversified portfolios are larger than the risks of diversified portfolio. This will also be true in the future; that is, undiversified portfolios will have on average about the same expected return, but wider distributions of return or higher risk.

31. Q. Suppose that we have an undiversified portfolio that we strongly believe can outperform the markets indicated in your work. Are your procedures of any use in estimating the possible returns from superior money managers?

A. If we strongly believe that a portfolio can outperform the market, then it is only necessary to insert the increased expectations into the model so that the expected return is increased by the amount that one expects the portfolio to outperform the market. The risks are also increased by the amount of the additional risk incurred as a result of holding something other than the market.

32. Q. You have shown that, historically, the bond maturity premium is near zero (0.6 percent). Do you expect investors to be paid this amount in the future for taking the additional risk of long-term

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A. No; we expect they will receive higher compensation for this risk. Over the post-World War II period, investors underestimated

inflation. The result was that long-term bondholders suffered large unanticipated capital losses. Since these losses were both unanticipated and measurable as such, we can add back the annual rate of loss to the historical maturity premium to estimate what the expectancy was. The annual rate of capital loss, or addback, is 1.0 percent. Adding this to the historical maturity premium of 0.6 percent, we believe that investors expect a substantially greater maturity premium (1.6 percent) than was experienced over 1926-1985. All these returns are geometric means; the arithmetic mean returns are slightly higher.

33. Q. Are long-term bonds more risky today than they were in earlier years?

A. In the past few years, long-term bonds have been considerably more risky than in earlier years. This does not necessarily mean that they will continue to be as risky in the future. However, as long as inflation rates are high and/or volatile, we expect long-term bonds to be riskier than they were historically.

34. Q. Suppose an investor held neither short-term bills nor 20-year bonds, but rather a mixed portfolio of various maturity bonds -- what would have been the effect on historical and future returns?

A. The returns from short-term bills do not reflect any maturity premium whereas the returns on a 20-year bond reflect a 20-year maturity premium. The historical returns of most intermediate-term



bonds have been somewhere in between the returns of short-term bills and 20-year bonds. The expected returns of intermediate-term bonds may reflect a partial maturity premium.

35. Q. Long-term bonds, Guaranteed Investment Contracts (GIC's), and various immunization and dedication strategies are purported to reduce risk for investors with long-term time horizons. Do they work?

A. If investors are interested in minimizing nominal risk over a long-term time horizon, these strategies would work if structured properly. Only a few investors, however -- say, pension funds with obligations denominated in nominal terms with no inflation provision -- are interested in reducing risk in nominal (as opposed to real) terms. Most investors are interested in reducing risk in real terms only. Thus, even for these investors with long-term horizons, investing in short-term securities is a less risky strategy. If the market is dominated by investors who perceive short-term investments as less risky, then we would expect that holders of long-term bonds will be compensated for their taking on interest rate risk.

36. Q. If we were to hold lower quality bonds than the high quality long-term corporate bonds listed in your paper, how would this affect bondholder expected returns?

A. Lower quality bonds have higher yields and higher default risks than high quality bonds. Since investors are paid a premium for

taking default risk, holders of lower quality bonds in general have higher expected returns and higher variability than the holders of higher quality bonds.

37. Q. Can the SBBI historical data and forecasts be used to estimate the debt and equity costs of capital, and the weighted average cost of capital, for a firm?

A. Yes. The cost of capital is equal to the expected rate of return, or forecast mean. (This is the market required cost of capital, before any flotation costs or other market inefficiency costs which might be imputed.) For a stock having an amount of economy risk similar to that of the market as a whole, the equity cost of capital is equal to the riskless rate plus the arithmetic mean of the equity risk premium. This can be done in either nominal or real terms, depending on what result is desired.

In the SBBI framework, the debt cost of capital is equal to the riskless rate plus the arithmetic means of the maturity and default premia, where the debt in question has a maturity of 20 years and default risk similar to that of the long-term, high-grade index used to generate the corporate bond series. A much better way to estimate the debt cost of capital, however, is simply to observe the yield to maturity on the debt, since that yield is the market observable cost of capital for the debt and incorporates all risk and non-risk factors in the debt.

The weighted average cost of capital is simply the weighted average of the debt and equity costs of capital, where the weights

are determined by some reasonable method. Market value weights are theoretically the best to use, but that is not always practical.

All costs of capital discussed in this answer are short-term, because they use the 30-day Treasury bill rate as the riskless rate. In other words, they assume that investors perceive short-term bills as the riskless security, as we have done throughout this book.

38. Q. How would you estimate the long-term cost of capital?

A. For debt, one uses the yield to maturity. For equity, there are several satisfactory ways, with none of them clearly superior to the others. Some persons have simply taken the long-term government bond yield to maturity as the long-term riskless rate, and the excess return of equities over long-term government bonds as the long-term equity risk premium. The difficulty with this method is that we believe long-term government bond returns contain a maturity premium. Subtracting out an estimate of the maturity premium, however, involves some estimation difficulties and does not literally produce a riskless-equivalent long-term rate. Thus the details of estimating the long-term cost of capital are not totally resolved, and the method used is likely to be that most compatible with the specific application at hand.

39. Q. How would you estimate the cost of capital for a stock having risks different from that of the market?

A. The Capital Asset Pricing Model (CAPM), or beta model, produces a simple and useful result. The model may be expressed, in its simplest form, as

$$ECOC = r_f + B(r_p) ,$$

where ECOC is the equity cost of capital;  $r_f$  is the riskless rate; B is the beta of the stock; and  $r_p$  is the equity risk premium.

There are other risks and non-risk costs of capital inherent in stocks, but measuring them requires complex and largely untested models such as Arbitrage Pricing Theory, developed by Stephen Ross, and the New Equilibrium Theory outlined by Ibbotson, Diermeier and Siegel. There is some evidence that the beta impounds some of these risks so that the CAPM result is usually quite satisfactory.

40. Q. How would you estimate the cost of capital for a bond or other debt instrument having maturity and/or default risks different from those of the market?

A. We would use the market observable yield to maturity on the debt instrument. One could conceivably construct an SBBI-based method using adjusted maturity and default premia. The market observable yield to maturity, however, would be superior because it already impounds the various characteristics of the debt in question.

41. Q. Why do you use the arithmetic mean risk premium, instead of the geometric mean (compound annual return)?

A. We are interested here in expected year-by-year rates of return. In order to achieve a given compound annual return over the long run, it is necessary to expect, in each separate year, a somewhat higher return -- the arithmetic mean. For example, if you had a stock with annual returns of +30 percent, then -10 percent, then +30, -10, +30, -10 et cetera forever, the expected return or forecast mean in every year would be the arithmetic mean of +30 and -10, or 10 percent. The compound annual return to an investor holding this stock, however, would be only 8.3 percent per year. Thus, given this stock's level of variability (a standard deviation of 20 percent, roughly that of the actual stock market, although the "evenness" of returns in our example is not realistic), it is necessary to have an expectancy of 10 percent every year -- the arithmetic mean -- in order to achieve the geometric mean -- 8.3 percent -- over a multi-year period. Since we are interested in the year-by-year expectancy, the arithmetic mean is the relevant rate of return.

42. Q. Can the cost of capital methodology you have just described be used in regulatory ratesetting?

A. Yes. The required rate of return in a regulatory context is the cost of capital as described above, using the arithmetic mean risk premium. Some adjustments may have to be made. One widely held

view is that the cost of capital should be adjusted for flotation costs, since these must be paid by the issuer to attract and retain capital. In addition, certain regulatory environments may offer the shareholder the opportunity to earn less than the allowed rate of return but not more. (If the shareholder earns more, future returns might be reduced by the regulating body.) Under this asymmetrical condition, the allowed rate of return must be higher than the cost of capital in order for the regulated business to attract and maintain capital. There are other regulatory risks which may require the allowed rate of return to be higher than the cost of capital.

43. Q. Can the cost of capital be used as a discount rate for reducing future values (say, dividends, wages, or cash flows) to a present value in the customary valuation formulas?

A. Yes. The cost of capital, calculated using the arithmetic mean and the appropriate time horizon, is the discount rate for valuation. It is important that the numerator (the future value being reduced) be the statistical expectancy of the future value, weighting in all good and bad scenarios. A common error is to use the "realistic best case" or some other measure which is not the statistical expectancy in the numerator. If the numerator is estimated properly, then the cost of capital, adjusted for the riskiness of the future values using the beta model or some other satisfactory model, is the correct discount rate. Possible uses

include security valuations, valuation of businesses or real estate for planning, transaction, or tax purposes, and many other uses.

44. Q. How would you use the cost of capital for project selection?

A. In a situation where there is no significant budget constraint, one should accept all projects whose internal rate of return exceeds the project-specific cost of capital. The internal rate of return on a project, business unit, or acquisition is the discount rate (found by iteration, or trial and error) which equates the present value of all cash inflows, including the investment, with the present value of all cash outflows. If this discount rate, or internal rate of return, exceeds the project-specific cost of capital, then the project has a positive net present value and should be accepted because it would create value for the company.

The project-specific cost of capital is usually estimated using the CAPM, where one seeks to find a set of publicly traded companies which are comparable in business type, size, and risk to the project under consideration. One then uses the average beta of the comparable companies as a proxy for the beta of the project. Where no such comparable companies can be found, it may be necessary to use accounting-based models of project beta.



# Financial Advisers and Fuzzy Math

By KAJA WHITEHOUSE

Dow Jones Newswires

Next time your financial adviser makes a prediction for an average rate of return during an investment pitch, you might want to doublecheck the math.

Some financial advisers rely too heavily on a formula known as arithmetic average, which can be misleading when investing for the long term. Financial advisers who use this formula may be overstating your potential profit and leading you to take risks you might otherwise avoid, academics and other financial professionals say. Errors tend to widen when it comes to very volatile securities, like emerging-markets stocks.

Arithmetic math involves a very simple formula, which is probably why so many people rely on it. To decide an average return, you add up all the return percentages and divide the results by the number of percentages.

It's a perfectly valid way to determine an average, as long as it's used to frame a stand-alone one-year return, said Knut Larsen, a partner with Brigus Group, a Toronto education service for financial advisers.

The classic example to illustrate the flaws with arithmetic math goes like this: You start with an investment of \$100 and it grows 100% the first year and loses 50% the next year. To calculate the total return using arithmetic math, you would add the returns from both years—in this case 100 minus 50—and divide them by two, or the number of returns.

That leaves you with the illusion of a 25% profit, when in reality you're right back where you started—with \$100. After rising 100% the first year, you had \$200; but a drop of 50% cut that in half, back down to \$100.

The alternative is known as geometric

average, or compound annual return. This takes compounding and volatility into consideration.

Unfortunately, geometric average is a complicated formula, involving cube roots, so it may not be possible to figure out the results without a spreadsheet. But the point is to educate yourself on the issue, not to memorize complex formulas, Mr. Larsen said. Simply understanding when one formula should be used over the other, and knowing the flaws of arithmetic math is a good start, he said.

## S&P 500 index annual returns from 1927 until now are lower using geometric math.

When comparing the two results, the arithmetic average generally ends up being higher than the geometric average, said Campbell Harvey, a finance professor with Duke University's Fuqua School of Business. For example, annual returns on the S&P 500 index from 1927 until now are about 12% using arithmetic math, and 10% using geometric math. That's a two percentage point difference.

The deviation isn't always enough to get worked up about, but it depends on factors such as volatility, and even fees and interest. For example, the greater the volatility of the security in question, the greater the spread will be between the two results, Mr. Harvey said.

He recalls feeling struck once by an advertisement touting Brazilian stocks at

tached to data showing "incredible returns" of about 50% a year. Knowing Brazil is a volatile market, Mr. Harvey went back and applied geometric math to the returns. His findings produced an average return closer to zero.

Volatility can affect the portfolio in negative ways because a severe drop makes it that much harder to catch up on the reduced amount, even if returns are phenomenal thereafter. But when using arithmetic average, all that is known is the one-year average return, not total results.

Misleading return projections using arithmetic math are common in the insurance world, said Peter Katt, an insurance analyst in Mattawan, Mich. Some products require high return forecasts to make the products work, and this is one way to get around that, he said, adding that consumers need to educate themselves.

"I deal with very bright clients and advisers, and they have no idea what I'm talking about" when referring to the different formulas for calculating results, he said.

It may seem like a lot of financial hocus-pocus, but sometimes the misrepresentations aren't intentional, Mr. Larsen said. He published a primer on the subject this summer after bumping into a financial adviser who legitimately didn't know the effects arithmetic math was having on his planning. The adviser had a client who suffered a portfolio loss of 45%, and the adviser believed the client would need an annual return of 15% a year to get back to the original investment in three years. In reality, he would have to prepare for a return of more like 22% a year, according to Mr. Larsen's calculations.

## FCC Moves Closer to Portable Wireless Numbers

By MARK WIGFIELD  
And CARL BIALIK

Dow Jones Newswires

WASHINGTON—The Federal Communications Commission moved closer to letting customers loan their telephone num-

FCC still didn't resolve a disparity that will prevent many landline customers who "cut the cord" from transferring the number to a wireless phone.

"The FCC has simultaneously man-

is ported, in cases where two wireless carriers can't agree on the terms and conditions of porting, they must do so with no conditions.

The FCC has delayed implementing



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# Corporate Ratings Criteria

**2005**

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## Parent/Subsidiary Links

**A**ffiliation between a stronger and a weaker entity will almost always affect the credit quality of both, unless the relative size of one is insignificant. The question rather is how close together the two ratings should be pulled on the basis of affiliation.

### General Principles

In general, economic incentive is the most important factor on which to base judgments about the degree of linkage that exists between a parent and subsidiary. This matters more than covenants, support agreements, management assertions, or legal opinions. Business managers have a primary obligation to serve the interest of their shareholders, and it should generally be assumed they will act to satisfy this responsibility. If this means infusing cash into a unit previously termed a stand-alone subsidiary, or finding a way around covenants to get cash out of a protected subsidiary, then management can be expected to follow these courses of action to the extent possible. It is important to think ahead to various stress scenarios and consider how management would likely act under those circumstances. If a parent supports a subsidiary only as long as the subsidiary does not need it, such support is meaningless.

A weak entity owned by a strong parent usually—although not always—will enjoy a stronger rating than it would on a stand-alone basis. Assuming the parent has the ability to support its subsidiary during a period of financial stress, the spectrum of possibilities still ranges from ratings equalization at one extreme to very little or no help from the parent's credit strength at the other. The

greater the gap to be bridged, the more evidence of support is necessary.

The parent's rating is, of course, assigned when it guarantees or assumes subsidiary debt. Guarantees and assumption of debt are different legal mechanisms that are equivalent from a rating perspective. Cross-default and cross-acceleration provisions in bond indentures also can be important rating considerations. They can provide a powerful incentive for a stronger entity to support debt of a weaker affiliate, because they trigger default of the stronger unit in the event of a default by the weaker affiliate. Bear in mind, however, that cross-default provisions can disappear if the debt that contains the provisions is retired or renegotiated.

A strong subsidiary owned by a weak parent generally is rated no higher than the parent. The key reasons:

- The ability of and incentive for a weak parent to take assets from the subsidiary or burden it with liabilities during financial stress; and
- The likelihood that a parent's bankruptcy would cause the subsidiary's bankruptcy, regardless of its stand-alone strength.

Both factors argue that, in most cases, a "strong" subsidiary is no further from bankruptcy than its parent, and thus cannot have a higher rating. Experience has shown

that bankrupt industrial companies file with their subsidiaries more often than not.

For rating purposes, the risk of "substantive consolidation" is a side issue. Consolidation in bankruptcy, sometimes referred to as substantive consolidation, occurs when assets of a parent and its subsidiaries are thrown together by the bankruptcy court into a single pool and their value allocated to all creditors without regard for any distinction between the two legal entities. In such cases, creditors of a subsidiary may lose all claim to the value associated with that particular subsidiary. Much more often, a parent and its subsidiaries will all file, but each legal entity will be kept separate in the bankruptcy proceeding. Creditors keep their claim to the assets of the specific legal entity to which they extended credit. Because corporate ratings address default risk, the key issue is not consolidation, but rather whether a bankruptcy filing will occur. Nonconsolidation opinions are, therefore, of more value with respect to recovery ratings and issue ratings of subsidiary debt, because those opinions address the likelihood of substantive consolidation, rather than the likelihood of simultaneous bankruptcies for parent and subsidiary. Perhaps the willingness to obtain such an opinion might also serve as some evidence of management intent regarding a subsidiary's independence.

Protective covenants apparently protect a subsidiary from its parent by restricting dividends or asset transfers. In general, this type of covenant is given very limited weight in a rating determination. Reasons for limited value of protective covenants:

- They do not affect the parent's ability to file the subsidiary into bankruptcy;
- It is very difficult to structure provisions that cannot be evaded; and
- Ultimately, courts usually cannot force a company to obey the covenant. During severe financial stress, especially prior to a bankruptcy, a weak parent may have a powerful incentive to strip a stronger subsidiary. The court can, at best, only award monetary damages after the fact to a creditor who has incurred a loss (when the issue defaults) and chooses to sue.

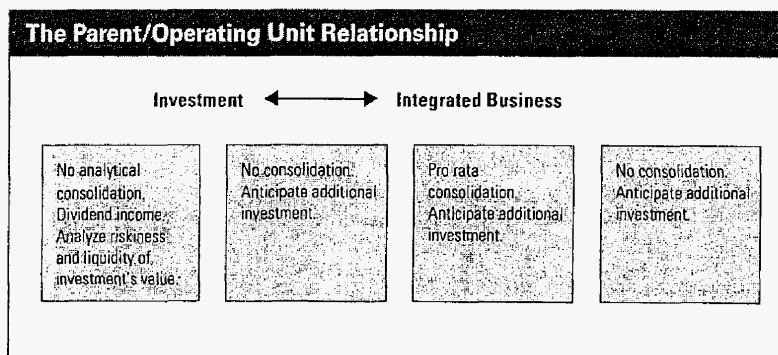
### Subsidiaries/Joint Ventures/ Nonrecourse Projects

With respect to the parent's credit rating, affiliated businesses' operations and their debt may be treated analytically in several different ways, depending on the perceived relationship between the parent and the operating unit. These alternatives are illustrated by the spectrum below.

The same alternatives may apply when companies invest in joint ventures that issue debt in their own name, and when companies choose to finance various projects with nonrecourse debt. These analytical issues also may apply when companies take pains to finance some of their wholly owned subsidiaries on a stand-alone, nonrecourse basis, especially in the case of noncore or foreign operations.

Sometimes, the relationship may be characterized as an investment. In that case, the operational results are carved out; the parent gets credit for dividends received; the parent is not burdened with the operation's debt obligations; and the value, volatility, and liquidity of the investment are analyzed on a case-specific basis. The quality of the investment dictates how much leverage at the parent company it can support.

At the other end of the spectrum, operations may be characterized as an integrated business. Then, the analysis would fully consolidate the operation's income sheet and balance sheet; and the risk profile of the operations is integrated with the overall business risk analysis. Or, the business may



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Solomon B. Samson  
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## Regulation

The regulatory relationship can be a benign one—or it can be adversarial. It affects virtually all corporates to one extent or another, and is obviously critical in the case of utilities—where it is a factor in all assessments of business risk.

Evaluation of governmental involvement/regulation encompasses legislative, administrative, and judicial processes at the local and national levels. This evaluation considers the current environment—and the potential for change. For example, a system that requires legislative action to modify regulations is more stable—and is viewed more positively—than one that is subject to ministerial whim, as exists in some Asian countries. Similarly, a regulatory framework enacted with regard to a recently privatized system is more prone to be revisited by government regulators. The impact of regulation runs the gamut—from regulation's providing of direct, tangible support to its being a hindrance. For a utility business profile to be considered "well above average" usually requires strong evidence of government support or regulatory sheltering. Support can be explicit—such as in Canada and in other locales where a government guarantees a utility's obligations. Or it can take the form of strong and obvious implicit support, such as in Greece.

Japanese investor-owned utilities have historically been insulated from competition and been protected by a very cooperative, coordinated, rate-setting process. Other governments may facilitate the utility's access to external sources of capital, especially where the utility is a direct instrument of government policy. In the U.S., municipally owned utilities have also been sheltered—at least they have in the past. (Deregulation has unleashed competitive pressures, but politics makes it difficult to make adjustments that would affect either residential rates or the city's own general fund.)

Short of such outright support, regulatory treatment should be transparent and timely and should allow for consistent performance—if it is to be viewed positively in the ratings context.

### Aspects of Regulation

The role of the regulator is evident in:

- Rate setting,
- Operational oversight, and
- Financial oversight.

*Setting rates* is obviously important. To support credit quality, a utility must be assured of earning a fair—and consistent—rate of return. Different regulators can be more—or less—generous with respect to the levels allowed—or with respect to which assets are included in the "returns" calculations. They can choose to overlook—or to penalize—a utility for any service shortcomings in service.

*Operational regulation* pertains to technology, to environmental protection considerations, safety rules, facility siting, and service levels—and the freedom a company has to pursue initiatives involving each of these areas. Regulatory inflexibility can hamstring the utility in its attempt to be competitive. For example, if a utility faces new competition for its large users, it may want to lower the rates it charges its commercial/industrial customers—and make up its lost revenues by raising the rates at the expense of residential customers. The regulators may object and insist that residential rates continue to be subsidized—creating a problem for the company.

Financial oversight refers to the regulator's ability to maintain—and interest in maintaining—a particular level of credit quality at the utility. This is a separate consideration from how benign the relationship might be in other respects. If the situation warrants it, the rating evaluation may rely on the regulator to enforce—or at least encourage—a certain level of financial strength at the utility. In this respect, the regulator's role can take different forms:

- Approval is the most basic element. That a utility requires approval to sell debt or pay dividends creates an obstacle with respect to its fiscal aggressiveness.

■ STANDARD & POOR'S

- Influence refers to the economic incentives that a regulator can provide to maintain a certain level of credit quality. In jurisdictions with rate-of-return regulation, regulators can effectively mandate their view of an "appropriate" balance sheet by specifying return on equity. Even when regulation is not classic "rate base rate of return"—such as with price cap or banded rate of return—regulators may still desire a minimum level of credit quality. In past Standard & Poor's surveys, regulators articulated a concern about credit quality's falling below 'A'. Now, however, attitudes are changing about regulating with an eye toward credit quality.

- Regulatory mandate—the explicit demand of a specified level of credit quality—is rare today. In the past, some regulators would impose penalties if a company's credit rating dropped below the desired minimum.

As competition intensifies, regulators have focused on service quality, and are less concerned with credit quality. (After all, even a bankrupt utility can continue to deliver services!) Of course, not all regulatory jurisdictions will follow the trend in identical fashion. In the U.S., there are currently few instances where ratings rely heavily on regulators to maintain credit quality; outside the U.S., however, there is a greater basis for depending on regulators in this regard.

### Regulatory Separation

Utilities are often owned by companies that own other, riskier businesses or that are saddled with an additional layer of debt at the parent level. Corporate rating criteria would rarely view the default risk of an unregulated subsidiary as being substantially different from the credit quality of the consolidated economic entity (which would fully take into account parent-company obligations). Regulated subsidiaries can be treated as exceptions to this rule—if the specific regulators involved are expected to create barriers that insulate a subsidiary from its parent.

In those cases that benefit from regulatory insulation, the rating on the subsidiary is more reflective of its "stand-alone" credit profile. (As a corollary, the parent-company rating is negatively affected—since it is deprived of full

access to the subsidiary's assets and cash flow.) With utilities' competition and consolidation increasing and with shifts to new forms of regulation that are coming into existence, however, there is less reason to expect such regulatory intervention. Just as there is less and less basis to rely generally on regulators to maintain a level of credit quality—as discussed above—so, too, there is less basis for regulatory separation.

Rating policy has evolved in tandem with these trends. The bar has been raised with respect to factoring in expectations that regulators would interfere with transactions that would impair credit quality. To achieve a rating differential for the subsidiary requires a higher standard of evidence that such intervention would be forthcoming.

In the past, the mere existence of regulation was given considerable weight when determining the adequacy of protection for the subsidiary's assets and cash flow. Now Standard & Poor's analyzes regulatory insulation on a case-by-case basis. The key is a regulator's demonstrated willingness to protect creditworthiness. Some examples of U.S. state jurisdictions where protective measures have been implemented are Oregon, New York, Virginia, and California.

The Oregon Public Utilities Commission approved the Enron Corp./Portland General

Electric Co. merger, based on various restrictive conditions. Likewise, the New York Public Service Commission, in approving the Keyspan Energy/Long Island Lighting Co. merger, required a cap on leverage, a prohibition of certain types of loans, and a limit on holding-company investment in nonutility operations. Outside the U.S., regulators in many countries still play a more significant role in the finances of utilities—making the case for regulatory separation in those countries. Moreover, some recent transactions—notably in the U.K.—have employed (or at least have considered employing) structural insulation techniques to achieve "ring-fencing" for the acquired utility subsidiary. In these instances, setting up independent directors, minority ownership stakes, and so forth combine with regulatory oversight to insulate the subsidiary and achieve higher ratings.



## Cover Story

buy! buy!

# HOW CORRUPT IS WALL STREET?

New revelations  
have investors  
baying for blood,  
and the scandal  
is widening

**W**hen Debases Kanjilal, a Queens (N.Y.) pediatrician, picked up his phone in early 2001 to call lawyer Jacob H. Zaman-sky, he had no idea he would whip up a full-fledged hurricane on Wall Street. Kanjilal claimed he lost \$500,000 investing in Infospace Inc., an Internet stock he says his Merrill Lynch & Co. broker urged him not to sell when it was trading at \$60 a share. By the time he sold, it was down to \$11. Zaman-sky filed a novel arbitration claim against Merrill in March, 2001, in which he argued that its star Net analyst, Henry Blodget, had misled investors by audaciously promoting the stocks of com-  
ies with which the firm had invest-  
at banking relationships. That lawsuit  
ed directly to an investigation by New  
York State Attorney General Eliot  
Spitzer, who stunned Merrill and its Wall

Street brethren three weeks ago when he made public some shocking e-mail ex-  
changes between Merrill analysts and  
bankers.

That was just the start. Now, Spitzer is investigating Salomon Smith Barney, Morgan Stanley Dean Witter, and at least three others. The Securities & Exchange Commission has launched a probe into practices at 10 firms, while the Justice Dept. is pondering an inquiry of its own. And plaintiffs' lawyers are advertising for clients and filing new suits daily.

The widening scandal has plunged Wall Street into crisis. The resulting furor is more thunderous than the one unleashed by Michael R. Milken's junk-bond schemes in the 1980s, the Prudential Se-

curities limited-partnership debacle in the early '90s, or price-fixing on the Nasdaq later in the decade. In part, that's be-  
cause many more individuals lost money  
in the recent market collapse than on  
earlier scandals.

But uproar over the relationships be-  
tween analysts and their investment  
banking colleagues has also grown be-  
cause it comes on the heels of several  
other scandals that raise big questions  
about how Wall Street operates. Already,  
probes are under way into Wall Street's  
shady initial public offering allocation  
practices, as well as its crucial role in  
setting up and selling the partnerships  
that led to Enron Corp.'s collapse. Worse,  
execs at many firms may have made a  
bundle investing in the partnerships, even  
as those same firms advised clients to  
hold Enron stock virtually until it went  
bankrupt. It all makes Wall Street seem  
rigged for the benefit of insiders as nev-  
er before.

The damage goes way beyond the tat-

## Cover Story HOW CORRUPT IS WALL STREET?

tered reputations of the firms and their beleaguered analysts. The entire economy depends on the financial system to raise and allocate capital. And that financial system, in turn, is built on the integrity of its information. Should investors lose confidence in that information, it could deepen and prolong the bear market, as wary investors hesitate to put money into stocks. And it could easily put a damper on the economy if companies are less willing—or less able—to raise capital on Wall Street. “One of the precious things we have is the integrity of the financial markets. If that changes it could have dramatic repercussions on the dollar, on domestic inflation, on the economy,” says Felix G. Rohatyn, former managing director of Lazard Frères & Co.

Wall Street has always struggled with conflicts of interest. Indeed, an investment bank is a business built on them. The same institution serves two masters: the companies for which it sells stock, issues bonds, or executes

**“We have failed to live up to the high standards that are our tradition, and I want to take this opportunity to apologize publicly to our clients, our shareholders, and our employees”**

**David Komansky, CEO of Merrill Lynch**

mergers; and the investors whom it advises. While companies want high prices for their newly issued stocks and low interest rates on their bonds, investors want low prices and high rates. In between, the bank gets fees from both and trades stocks and bonds on its own behalf as well, potentially putting its own interests at odds with those of all its customers.

But in recent years, those inherent conflicts have grown worse, as the sums to be made by overlooking them have grown enormous. That's because since the repeal of Depression-era banking laws, megabanks such as Citigroup and J.P. Morgan Chase are allowed to do everything from trading stocks to lending money and managing pension funds.

Chinese walls—jargon for the

strict separation of the different lines of business conducted under the same roof—were supposed to keep the bankers honest and free from corruption. But a series of scandals since the early 1980s has eaten away at those foundations. The final blow, however, was the tide of money that flooded over

### A Heap of Trouble for Wall Street

Where the investigations are focused:



Wall Street during the great tech bubble. Between the last quarter of 1998 and the first quarter of 2000, the tech-heavy Nasdaq market index soared from 1,500 to more than 5,000. Many investors made out like bandits. So did the investment banks. During the same period, according to Thomson Financial/First Call, Wall Street earned \$10 billion in fees by raising nearly \$245 billion for 1,300 companies, many of them profitless tech outfits that later blew up. The bubble burst in the spring of 2000, wiping out more than \$4 trillion in investor wealth. “The fact is that a bubble market allowed the creation of bubble companies, entities designed more with an eye to making money off investors rather than for them,” wrote famed investor Warren E. Buffett in his annual report to Berkshire Hathaway shareholders last year.

Staking their claim in the gold rush, Wall Street firms ramped up in the late '90s, hiring hordes of analysts, many of them inexperienced. New investment bankers were hired as well. A feeding frenzy set in as rivals fought to grab a big share of the market to bring companies public. At the same time, a new cult of equities came to life, as individuals invested in stocks as never before. True, many investors ignored common sense. Still, as analysts applauded stocks, trumpeting their picks on CNBC and other media, investors bought. “Investors took

**STATES** New York Attorney General Eliot Spitzer is leading the charge. California, New Jersey, and nine other states have joined in investigating analysts' interest. New York could bring criminal charges.

**CONGRESS** Senator Paul Sarbanes, D-Md., chairs the Banking Committee. Hearings include tough conflict-of-interest rules. Congress may pursue more hearings on analysts. The House has asked big Wall Street firms to testify on their role in setting up Enron.

PHOTOGRAPH BY MARY BRYAN-BROWN; ART RAMON/SIPA PRESS



everything at face value, which was understandable. There wasn't a lot of information, and it was of varying quality," says Michael E. Kenneally, co-chairman and chief investment officer at Bank of America Capital Management Inc.

Only now are the ugly details of the conflicts at play being laid bare. In some of the e-mail turned up by Spitzer, analysts disparage stocks as "crap" and "junk" that they were pushing at the time. The e-mails are so incendiary that they threaten to thrust Wall Street into the sort of public-relations nightmare that Philip Morris, Ford, Firestone, and Arthur Andersen have endured in recent years. All the ingredients are present: publicity-hungry attorneys general, packs of plaintiffs' lawyers, and potential congressional hearings. "The last thing the industry wants is...the drip-drip-drip of new stories every week," says Howard Schiffman, a former SEC Enforcement Div. lawyer now practicing privately in Washington.

More explosive documents may be on the way. Both Spitzer and the SEC are seeking from more than a dozen firms papers and e-mail related to analysts' recommendations and their potential conflicts of interest. While nobody knows what evidence will emerge, other firms will have their own smoking guns. And analyst pay is likely to emerge as a hot-button issue (page 40). Zamansky, for instance, claims that he has seen contracts from investment banks promising analysts 3% to 7% of all the investment banking revenues that they help to generate. That would be clear proof that analysts were being paid to help the firms'



**“If Wall Street knows what is good for it and what is good for this country, it will very definitely clean up its act”** Felix Rohatyn, former managing director of Lazard Frères

banking clients, often at the expense of investors who expected objective advice.

The financial implications of this mess are enormous. Based on the evidence that has already emerged, Merrill is facing potential fraud claims by every retail investor who purchased any stock that Blodget & Co. may have insincerely recommended. If analysts covering other industries at the firm harbored similar doubts about the companies they hawked, the number of claimants will expand exponentially. Should other financial firms have similarly embarrassing documents in their

files, Wall Street could easily be facing billions in potential liability. In a report released on Apr. 24, as the fiasco was unfolding, Prudential Financial analyst David Trone estimated the issue could cost Merrill alone \$2 billion.

Heads could roll, too. If prosecutors conclude that firms are guilty of systemic fraud—rather than harboring a small group of rogues—research directors and other high-ranking execs could be vulnerable. That's why the way analysts were paid is such an explosive issue. In egregious cases, criminal prosecutions are possible. Although regulators have never thrown an analyst in jail for fraudulently recommending a stock, experts say that could happen if public outrage flames high enough. Spitzer, whose tough New York securities statutes give him unusually broad power to file criminal suits, says he won't stop short of structural reform. "I'm continuing to negotiate [with Merrill]," he told *BusinessWeek* on May 1. "They've been fruitful discussions,

**“If Wall Street knows what is good for it and what is good for this country, it will very definitely clean up its act”**

**Felix Rohatyn, former managing director of Lazard Frères**

but negotiations can break down over a range of things. At this moment, we have significant issues that have not been resolved.”

Over the long run, a risk bigger than legal penalties could be new restrictions that Spitzer or others place on the way investment banks do business. On May 8, the SEC is scheduled to approve new rules forcing analysts to limit and disclose contacts with investment banker colleagues. But there's good reason to question whether these steps will be enough to satisfy the industry's critics—some of whom seek a separation between investment banking

SEC Chairman Harvey L. Pitt is expected to approve new rules to disclose contacts with investment banker colleagues. The SEC is also investigating several cases of stocks they privately traded against their own interests. On Apr. 30, the SEC announced a probe asking 10 Wall Street firms to turn over documents. The SEC is also looking into the allocation of IPO shares.



**NASD** With the SEC, the NASD hit Credit Suisse First Boston with \$100 million in penalties for unfairly distributing shares of IPOs. And the NASD has notified FleetBoston Financial's Robertson Stephens brokerage and J.P. Morgan & Chase that it is looking into commissions charged to investors who got hot IPO stocks.

**PLAINTIFFS' LAWYERS** Several hundred or more arbitration claims are likely to follow in the wake of the Spitzer investigation. Class actions have also been filed on issues ranging from IPO allocations to analyst independence.



## Cover Story HOW CORRUPT IS WALL STREET?

and analysis. At the moment, such radical change is a long shot. But if the Democrat-controlled Senate latches on to the analyst issue, it could trigger embarrassing hearings or proposals for more stringent rules. "Other shoes will drop," says one securities-industry lobbyist. "If [Salomon's Jack] Grubman or [Morgan Stanley's] Mary Meeker turns up [in similar evidence], the sky is the limit" for this issue. "It has big legs."

It was never much of a secret that analysts who work at investment banks often work against investors. Sell ratings now make up less than 2% of analysts' recommendations, up from around 1% during the bull market, according to First Call. Analysts are un-

der pressure from the companies they cover, as well as from big institutional clients who may own the stock, to give positive ratings. Michael Mayo, senior bank analyst at Prudential Financial, recently told the Senate Banking Committee that he had been exhorted to stay bullish throughout his career, from both his former employers and the companies he covers. Otherwise, he said, he doesn't get the same access that others do, which gives him a harder time making nuanced stock calls. "It's like playing basketball with one hand tied behind your back," says Mayo. Analysts also need to shine in surveys such as *Institutional Investor's* annual rankings, in which money managers vote for their favorite stockpick-

ers, so they spend too much time lobbying clients rather than crunching numbers. "Analysts get focused on saying what they think the client wants to hear to win the vote," says Henry J. Herrmann, chief investment officer at Waddell & Reed Inc., a money manager.

The biggest factor now contaminating the system is compensation. To an ever-increasing degree, analysts' pay is tied to how much investment banking business they bring in. According to a Merrill memo released by Spitzer, Blodgett detailed how he and his team had been involved in 52 investment banking transactions from December, 1999, to November, 2000, earning \$115 million for the firm. Shortly thereafter, Blod-

## HOW ANALYSTS' PAY PACKETS GOT SO FAT

It has been a frustrating 15 months for Daniel Peris, an analyst at Argus Research Corp. in New York. His efforts to cover AOL Time Warner Inc. have hit one brick wall after another. Unlike analysts at big-name investment banks, Peris was one of the few bearish voices on the stock for much of last year. He has been yelled

at by AOL's investor-relations reps for spouting off in the press; he has been granted scant contact with senior management, and his calls seeking basic information are returned by low-level employees—often weeks later. "I'm sitting here in obscurity," he says. His consolation: Clients who followed his advice did better than those who followed more bullish calls.

What sets Peris apart from peers is that he works for an independent research firm that doesn't trade or do investment banking. And that means he has also missed out on the big bucks raked in by most other high-tech analysts. While AOL admits it gives priority to bigger firms, the company says it returns all analysts' calls, regardless of banking ties. Since the mid-90s, those ties earned many Wall Street analysts fat paychecks by helping investment bankers win lucrative

business, such as underwriting or merger deals. "The analysts who brought in deals drove huge changes in research compensation," says Joan Zimmerman, partner at New York's Rhodes Associates, an executive search firm.

Salaries for Wall Street's researchers skyrocketed with the surging stock market. Fueled primarily by the tech

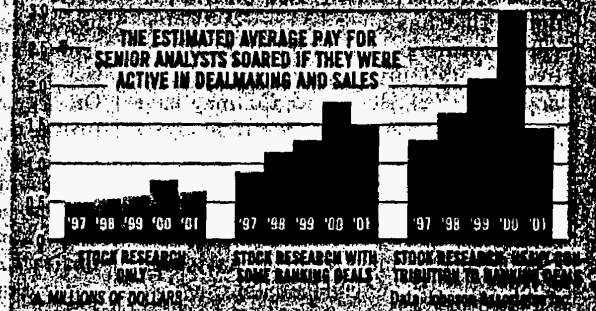
ment banking revenues, and [pay packages] started going up at a much faster pace as well," says C. David Bushley, a financial-services consultant at Buck Consultants Inc.

Senior analysts had no trouble pulling in a million in 2000, the blowout year. Those with a decade of experience tripled that by contributing heavily to the deal flow. A few hotshots at each firm earned anywhere from \$12 million to \$24 million. Even neophytes easily earned six-figure paychecks.

So how exactly are Wall Street analysts compensated? Increasingly, by year-end bonuses. A fixed portion of income is related strictly to old-school research duties, but the more that analysts are in fee-generating businesses, the higher their take-home pay. "The sales part of an analyst's job became huge," says compensation consultant Alan Johnson of Johnson Associates Inc.

Wall Street denies there's any direct link between pay and deals. "There isn't anything you can track in a statistical, quantifiable way," says Lehman Brothers Inc. spokesman William Ahearn. Goldman Sachs & Co. and Merrill Lynch & Co. also insist they have never paid analysts directly for generating investment banking business. "Their compensation is based on the overall profitability of the firm," says Merrill spokeswoman Susan McCabe. "The sales part of a deal and gotten a check."

### BIG DEALS, BIG BUCKS



and initial-public-offering boom, equity analysts' pay jumped fourfold in a decade—and with it, all pretense that research was being written to benefit the investor. Because analysts' pay is tied so closely to the banking business, the Chinese Walls intended to keep them apart crumbled. "Technology drove a higher percentage of invest-

**Rich Rewards** "The analysts who brought in d

get's pay package shot up from \$3 million to \$12 million. Charles L. Hill, First Call's director of research, says that when he was a retail analyst 20 years ago, if he helped investment bankers with a new client, he would get a small reward at year's end: "But it was the frosting on the cake. Now, it is the cake."

It would be an exaggeration to say analysts alone are to blame for Wall Street's woes. There's a much deeper problem involving everyone from credulous investors to deal-happy investment bankers and execs looking to fatten their wallets. "It's finally dawning on people that this incentive system we've given managers based on the value of stock options has encour-

aged management to puff up their companies a lot," says Robert J. Shiller, an economics professor at Yale University and author of the 2000 best-seller *Irrational Exuberance*.

Even so, experts say a lot of the corruption oozing from Wall Street has to do with an erosion in investment banking ethics and practices. It goes clear back to 1975, when fixed trading commissions were ended. Until

APR. 3, 2000



BusinessWeek



OCT. 5, 1999

then, investment banks had been able to make big bucks off pricey trading commissions. Slashed commissions meant the firms were forced to derive more revenues from

investment banking business. "There's a real sense of sadness over what has happened in investment banking. It's not about what's right for a client, it's all about jamming a deal down a client's throat," says an ex-analyst who recently joined a hedge fund. Consider Enron, which has paid \$323

to investment banking during the year." Superstar Internet Analyst Henry Blodget replied, listing his team's involvement in generating about \$115 million in revenue from 52 deals, including an IPO pitch for Pets.com. Blodget's compensation jumped from \$3 million in 1999 to \$12 million in 2001. He resigned in December, citing a "lifestyle change."

Attorney Jacob J. Zaman-sky, who has already sued two investment banks on behalf of investors, says he has seen employment contracts for analysts that promised specific compensation related to the volume of investment banking deals they pulled in. Specifically, he says, he saw confidential contracts that promised a \$2 million bonus to analysts if they brought in \$30 million in banking fees, and others that promised 3% to 7% of investment banking

revenue. Banks such as Credit Suisse First Boston, PaineWebber, before merging with UBS, and Donaldson, Lufkin & Jenrette have paid analysts up to 2% of the banking fees generated at the peak of the market. The idea was an incentive to produce sales and to lure talent from the competition.

The banks insist that analysts' pay is based on complex formulas. Part hinges

on the accuracy of analysts' stock recommendations and earnings estimates, part depends on "votes" about their value from investors. Sometimes they'll earn a premium if the sector they cover is viewed as key to the firm, or if they cover the largest industries. Analysts are graded for how much access they have to top brass at companies, and for getting inside scoops.

It's very different from the old days when analysts' compensation was linked to the trading commissions their stock picks generated. That world changed for good when the fixed-commission system was swept away in 1975, forcing banks to find other ways of bankrolling expensive research staffs. Now, compensation experts are scratching their heads over how regulators could sever the ties between deals and analysts' pay. It's not as if the two sides of the bank would stop talking to each other, points out Michael I. Franzino, senior practice managing partner at headhunters Heidrick & Struggles. "Is the head of investment banking going to go over to equities research and say, 'We need a little help here?' Yes!"

Franzino may be right. Research departments once generated enough money to pay for their own bonuses. They earned it from investors willing to pay for objective info. Now that the advice is "free," investors are getting exactly what they pay for.

By Mara Der Hovanesian, with Louis Lavelle and Tom Lowry in New York



True, it's a bit more subtle than that. New York State Attorney General Elliot Spitzer found that in the fall of 2000, Morgan Stanley asked its analysts to tally up all investment banking deals on which they had helped. In an Oct. 13 memo from Merrill Equity Research Director Deepak Rai, the company was not again unveiling contributions

drove huge changes in research compensation," says a high-level headhunter



## Cover Story HOW CORRUPT IS WALL STREET?

million to Wall Street in underwriting fees since 1986, according to Thomson. Goldman, Sachs & Co. pocketed \$69 million of that, while Salomon made off with \$61 million, and Credit Suisse First Boston took \$64 million. Indeed, two of CSFB's investment bankers, after helping to design Enron's off-the-books partnerships, sat on one of the partnerships' boards. According to a complaint filed in Houston Federal Court on Apr. 8, investment bankers generated megaprofits from secretly investing in Enron's hidden partnerships. Meanwhile, many analysts continued recommending the stock to the bitter end: 11 out of 16 analysts who follow Enron had buys or strong buys less than a month before the company's bankruptcy filing.

Enron may be an extreme example. Still, in the past, tradition and ethics played a large role in keeping investment bankers loyal to their corporate clients. Indeed, Wall Street itself used to have much more of an interest in guarding its reputation. Says Jay Ritter, a finance professor at the University of Florida: "These days, bankers are far more focused on short-term profits than on their long-term reputations."

That's likely to get worse as investment banking business continues to dry up. The amount being raised in initial public offerings is way off its 2000 highs. Now there are far fewer mergers and follow-on offerings taking place. Because of this, it's unlikely that Wall Street, after all its hiring during the tech bubble, can sustain its profitability. Goldman Sachs estimates that five of the top investment banks on Wall

Street will have to get by on \$2 billion less than the \$16 billion in net revenues they racked up in 1999. If investment banks roll back to 1999 staffing levels, Putnam Lovell Securities estimates that banks will have to shrink their payrolls by 5%—

yond that, regulators may need to go after the firms' top brass—the folks who set the procedural as well as ethical tone. And the Street should take great pains to monitor itself in an effort to restore investors' confidence.

"If Wall Street knows what is good for it and what is good for this country, it will very definitely clean up its act," says Rohatyn. Adds George H. Boyd III, head of equities at New York's Weiss, Peck & Greer: "This is an industry of trust; it's one of its key assets. If [Wall Street] loses it, it is going to have to invest in getting [that trust] back and putting in the controls to rebuild it. Without that trust, there's nothing."

Merrill Lynch apparently knows this. At its annual shareholder meeting on Apr. 26, Chairman and CEO David H. Komansky took an unprecedented stand on the analyst debacle, saying: "We have failed to live up to the high standards that are our tradition, and I want to take this opportunity to publicly apologize to our clients, our shareholders, and our employees." Other apologies may follow, as firms desperately try to assuage potentially litigious investors and unyielding regulators. But for Wall

### Where Does the Buck Stop?

Investigations into Wall Street's conflicts of interest have so far focused on analysts. Among brokerage bosses, only Merrill Lynch Chairman and CEO David H. Komansky has shouldered blame and apologized. Others, however, may soon have some explaining to do:

#### SANFORD WEILL

Chairman and CEO of Citigroup

His bank has issued \$17 billion in telecom IPOs since 1997, thanks in part to Jack Grubman. The rainmaker analyst pushed now-bankrupt firms such as Teligent and Global Crossing, which Citigroup's Salomon Smith Barney took public. Now, Spitzer's office is eyeing Grubman. Weill said in the bank's last conference call that investor confidence is important.

#### JOHN MACK

CEO of Credit Suisse First Boston

When he took over in July, the bank was already under investigation for unfairly allocating IPOs. Mack finished reining in the empire of star-tech banker Frank Quattrone and later settled with regulators for \$100 million. He said on Apr. 22 that Wall Street research departments needed to be restructured.

#### PHILIP PURCELL

Chairman and CEO of Morgan Stanley

The bank earned \$264 million underwriting tech companies during the boom, one of the biggest takes on Wall Street. In August, a federal judge dismissed eight investors' claims against Morgan Stanley and its star Internet analyst Mary Meeker for misleading them over Amazon.com and eBay stock. But it may not get the same result with Spitzer.

putting over 13,000 out of work.

But no matter how much Wall Street shrinks, its credibility must grow again. Firms have already taken some steps, such as eliminating direct reporting by analysts to investment bankers. But the Street and the SEC still must hammer out a solid, enforceable code of conduct. And if strong reforms in how analysts are compensated aren't pursued, focusing on increased disclosure will do little to end the abuses. Be-

Street, just saying sorry at this stage may prove to be too little, too late.

By Marcia Vickers and Mike France, with Emily Thornton, David Henry, and Heather Timmons in New York and Mike McNamee in Washington

#### BusinessWeek online

Full interviews with Eliot Spitzer and Felix Rohatyn can be found at [www.businessweek.com](http://www.businessweek.com)

**Behind the Scandal "These days, bankers are far more focused on short-term profits than their long-term reputation," says one finance professor**

**INDEX**

Interrogatory Response #112 (Progress Annual Report Capitalization Ratio)

Interrogatory Response #126 (Progress Energy Business Risk)

Interrogatory Response #135 (Van Der Weide Response OPC #135)

Production of Document Response # 86 (S&P Research Progress Energy)

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

RECEIVED

In re: Petition for rate increase by  
Progress Energy Florida, Inc.

Docket No. 050078-EI

JUN 03 2005

Office Of  
Public Counsel

**PROGRESS ENERGY FLORIDA'S RESPONSES TO  
CITIZENS' THIRD SET OF INTERROGATORIES (NOS. 112-170)**

Progress Energy Florida, Inc. ("PEF"), responds and objects to Citizens' Third Set of Interrogatories to PEF (Nos. 112-170), as follows:

**GENERAL RESPONSES AND OBJECTIONS**

PEF incorporates and restates its General Responses and Objections to Citizens' Third Set of Interrogatories (Nos. 112-170), served on May 23, 2005, as if those responses and objections were fully set forth herein.

**INTERROGATORIES**

112. Page 7 of the 2004 Progress Energy Annual Report to Stockholders contained in Section F of the Minimum Filing Requirements states that "In 2004, we improved our balance sheet by reducing our debt-to-capitalization ratio to 57.6 percent. We're on track to reach our goal of 55 percent." Regarding this statement:

- a) Please specify if the 57.6% number includes any purchased power contracts as debt in the computation. If yes, please state how much and show a copy of the workpapers used to make this computation. If not, please state what the percentage would be if purchased power contracts were included and show a copy of the workpapers used to make this computation.
- b) Please specify if the 55% number includes any purchased power contracts as debt in the computation. If yes, please state how much and show a copy of the workpapers used to make this computation. If not, please state what the percentage would be if purchased power contracts were included and show a copy of the workpapers used to make this computation.
- c) Please explain how the goal of 55% was obtained.

**Answer:**

a) No. See table below.

b) No. See table below.

<i>as of 12/31/2004</i>	<b><i>PGN Consolidated</i></b>	
LT Debt (includes QUIPS)	9,522	52.0%
ST Debt - CP	684	3.7%
Money Pool Debt	-	0.00%
Current portion LTD	349	1.9%
Total Debt	\$ 10,555	57.6%
Minority Interest	36	0.2%
Preferred Stock	93	0.5%
Common Equity	7,633	41.7%
Total Capitalization	\$ 18,317	100%

c) The goal of 55% was based primarily on leverage guidelines and median ranges for BBB rated electric utility holding companies.

126. Is the business risk of Progress Energy Florida higher or lower than the business risk of Progress Energy's consolidated operations? Please provide the basis for the answer provided.

Answer:

Progress Energy Florida has approximately the same business risk as Progress Energy's consolidated operations. PEF and Progress Energy are both primarily in the electric utility business. While Progress Energy does have some investments in more competitive markets than PEF, it also has greater ability to diversity its investment risk than PEF.



135. Does Dr. Vander Weide believe that S&P would increase the bond rating of PEF if PEF increased its financial ratios but the consolidated Progress Energy did not? If yes, please provide the basis for this conclusion.

Answer:

Since S&P's bond ratings are based on both qualitative and quantitative factors, Dr. Vander Weide cannot state with certainty that S&P would assign a higher bond rating to PEF if its financial ratios were to improve, but the consolidated Progress Energy's financial ratios did not improve.

STANDARD  
& POOR'S

RATINGS DIRECT

Return to Regular Format

## Research:

### Summary: Florida Power Corp d/b/a Progress Energy Florida Inc

Publication date: 12-Apr-2004

Credit Analyst: Todd A Shipman, CFA, New York (1) 212-438-7676

Credit Rating: BBB/Stable/A-2

#### Rationale

The ratings on Florida Power Corp. (d/b/a Progress Energy Florida) reflect the consolidated credit profile of its parent Progress Energy Inc. The 'BBB' corporate credit ratings on Progress Energy and its utility subsidiaries reflect weakened utility financial performance stemming from the economic downturn and rate reduction, compounded by overcapacity in the Southeast, which has weakened the financial performance of the unregulated generation portfolio, and high financial leverage. The company's tax-advantaged synthetic fuel business also has the effect of reducing the company's cash flow in the intermediate term.

The wholly owned subsidiaries include Carolina Power & Light Co. (CP&L; d/b/a Progress Energy Carolinas), Florida Power, and Progress Ventures. The average business position is supported by the relatively stable regulated utilities, CP&L and Florida Power, which contribute about 80% of the consolidated company's net income. Long-term growth prospects remain strong in the vibrant Florida service area while the negative trend in North Carolina's industrial sales is expected to stabilize in the near term, after four years of significant declines. The merchant generation operations remain high risk.

At year-end 2003, adjusted total debt to capital was 62% and consolidated adjusted funds from operations (FFO) interest coverage was around 3x. Standard & Poor's expects adjusted debt to capital to decline to 55% as debt is repaid, and adjusted FFO interest coverage to remain at current levels, which is weak for the rating.

Progress Energy's unregulated businesses, which include Progress Ventures and Progress Fuels, have a higher risk profile than the operating utilities primarily due to its merchant power exposure. Despite having a significant portion of its near-term capacity of 3,100 MW under contract, the unregulated generation's EBITDA contribution to the consolidated entity over the next few years is expected to be minimal, mainly because of the generation capacity surplus in the Southeast.

Synthetic fuel production generates significant net income after considering the effect of the Section 29 tax credits (10% of FFO). The IRS is reviewing this program and has stopped issuing private letter rulings. The range of possible IRS conclusions includes revocation of all tax credits generated to date (\$1.243 billion at the end of 2003), tightening the standards, or reducing or even completely eliminating all future tax credits. Although it is difficult to predict the IRS outcome, the company believes there is no precedent to retroactively revoke tax credits, and a change in IRS policy is unlikely. Assuming tax credits are not revoked retroactively, the remaining possible outcomes could be neutral to slightly positive to Progress Energy's credit rating in the near term. Any reduction or closing of the synthetic fuel productions would decrease the cash operating loss, which ranges between \$130 million and \$160 million annually. In addition, the company would draw down the accrued tax credits, consuming about \$150 million annually and increasing cash flow.

#### Liquidity.

Progress Energy's liquidity position is adequate. The company has three credit lines at the holding and operating companies totaling \$1.6 billion. As of year-end 2003, the company did not have any commercial paper outstanding. The company used the \$400 million proceeds from the sale of North Carolina Natural Gas, which were received in September 2003, to temporarily reduce its outstanding commercial paper. Upcoming maturities at CP&L and Florida Power will be refinanced with term debt issues.

#### Outlook

The stable outlook reflects the stable nature of the regulated utilities and the reasonably predictable

PEF-RC- 015735

financial performance of Progress Energy over the next several years. Although the tax-driven synthetic fuel operations are expected to somewhat weaken Progress Energy's cash flow protection measures over the next few years, Standard & Poor's recognizes that there is a long-term benefit to such investment. Still, the stable outlook relies on the company's ability to continually improve its financial metrics until they reach ratings-appropriate levels.

**APPENDIX A TESTIFYING EXPERIENCE OF JAMES A. ROTHSCHILD**

**THROUGH DECEMBER 31, 2004**

**ALABAMA**

Continental Telephone of the South; Docket No. 17968, Rate of Return, January, 1981

**ARIZONA**

Southwest Gas Corporation; Rate of Return, Docket No. U-1551-92-253, March, 1993  
Sun City West Utilities; Accounting, January, 1985

**CONNECTICUT**

Aquarion Water Company, Docket No. 04-02-14, Rate of Return, June 2004  
Connecticut American Water Company; Docket No. 800614, Rate of Return, September, 1980  
Connecticut American Water Company, Docket No. 95-12-15, Rate of Return, February, 1996  
Connecticut Light & Power Company; Docket No. 85-10-22, Accounting and Rate of Return, February, 1986  
Connecticut Light & Power Company; Docket No. 88-04-28, Gas Divestiture, August, 1988  
Connecticut Light & Power Company, Docket No. 97-05-12, Rate of Return, September, 1997  
Connecticut Light & Power Company, Docket No. 98-01-02, Rate of Return, July, 1998  
Connecticut Light & Power Company, Docket No. 99-02-05, Rate of Return, April, 1999  
Connecticut Light & Power Company, Docket No. 99-03-36, Rate of Return, July, 1999  
Connecticut Light & Power Company, Docket No. 98-10-08 RE 4, Financial Issues, September 2000  
Connecticut Light & Power Company, Docket No. 00-05-01, Financial Issues, September, 2000  
Connecticut Light & Power Company, Docket No. 01-07-02, Capital Structure, August, 2001  
Connecticut Light & Power Company, Docket No. 03-07-02, Rate of Return, October, 2003  
Connecticut Natural Gas; Docket No. 780812, Accounting and Rate of Return, March, 1979  
Connecticut Natural Gas; Docket No. 830101, Rate of Return, March, 1983  
Connecticut Natural Gas; Docket No. 87-01-03, Rate of Return, March, 1987  
Connecticut Natural Gas, Docket No. 95-02-07, Rate of Return, June, 1995  
Connecticut Natural Gas, Docket No. 99-09-03, Rate of Return, January, 2000

1 Southern Connecticut Gas, Docket No. 97-12-21, Rate of Return, May, 1998  
2 Southern Connecticut Gas, Docket No. 99-04-18, Rate of Return, September, 1999  
3 United Illuminating Company; Docket No. 89-08-11:ES:BBM, Financial Integrity and  
4 Financial Projections, November, 1989.  
5 United Illuminating Company; Docket No. 99-02-04, Rate of Return, April, 1999  
6 United Illuminating Company, Docket No. 99-03-35, Rate of Return, July, 1999  
7 United Illuminating Company, Docket No. 01-10-10-DPUC, Rate of Return, March 2002  
8  
9

10 **DELAWARE**  
11

12 Artesian Water Company, Inc.; Rate of Return, December, 1986  
13 Artesian Water Company, Inc.; Docket No. 87-3, Rate of Return, August, 1987  
14 Diamond State Telephone Company; Docket No. 82-32, Rate of Return, November, 1982  
15 Diamond State Telephone Company; Docket No. 83-12, Rate of Return, October, 1983  
16 Wilmington Suburban Water Company; Rate of Return Report, September, 1986  
17 Wilmington Suburban Water Company; Docket No. 86-25, Rate of Return, February, 1987  
18  
19  
20

21 **FEDERAL ENERGY REGULATORY COMMISSION (FERC)**  
22

23 Koch Gateway Pipeline Company, Docket No. RP97-373-000 Cost of Capital, December,  
24 1997  
25 Maine Yankee Atomic Power Company, Docket No. EL93-22-000, Cost of Capital, July,  
26 1993  
27 New England Power Company; CWIP, February, 1984. Rate of return.  
28  
29 New England Power Company; Docket No.ER88-630-000 & Docket No. ER88-631-000,  
30 Rate of Return, April, 1989  
31 New England Power Company; Docket Nos. ER89-582-000 and ER89-596-000, Rate of  
32 Return, January, 1990  
33 New England Power Company: Docket Nos. ER91-565-000, ER91-566-000 , FASB 106,  
34 March, 1992. Rate of Return.  
35 Philadelphia Electric Company - Conowingo; Docket No. EL-80-557/588, July, 1983. Rate  
36 of Return.  
37 Ocean State Power Company, Ocean States II Power Company, Docket No. ER94-998-000  
38 and ER94-999-000, Rate of Return, July, 1994.  
39 Ocean State Power Company, Ocean States II Power Company, Docket No ER 95-533-001  
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41 Ocean State Power Company, Ocean State II Power Company, Docket No. ER96-1211-  
42 000 and ER96-1212-000, Rate of Return, March, 1996.  
43 Southern Natural Gas, Docket No. RP93-15-000. Rate of Return, August, 1993, and revised  
44 testimony December, 1994.  
45 Transco, Docket No. RP95-197-000, Phase I, August, 1995. Rate of Return.  
46  
47 Transco, Docket Nos. RP-97-71-000 and RP97-312-000, June, 1997, Rate of Return.  
48  
49

**FLORIDA**

Alltel of Florida; Docket No. 850064-TL, Accounting, September, 1985  
Florida Power & Light Company; Docket No. 810002-EU, Rate of Return, July, 1981  
Florida Power & Light Company; Docket No. 82007-EU, Rate of Return, June, 1982  
Florida Power & Light Company; Docket No. 830465-EI, Rate of Return and CWIP, March, 1984  
Florida Power & Light Company, Docket No. \_\_\_\_\_, Rate of Return, March 2002  
Florida Power Corporation; Docket No. 830470-EI, Rate Phase-In, June, 1984  
Florida Power Corp.; Rate of Return, August, 1986  
Florida Power Corp.; Docket No. 870220-EI, Rate of Return, October, 1987  
Florida Power Corp; Docket No. 000824-EI, Rate of Return, January, 2002  
GTE Florida, Inc.; Docket No. 890216-TL, Rate of Return, July, 1989  
Gulf Power Company; Docket No. 810136-EU, Rate of Return, October, 1981  
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## CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of the foregoing Direct Testimony of James A. Rothschild has been furnished by electronic mail and U.S. Mail on this 13<sup>th</sup> day of July, 2005, to the following:

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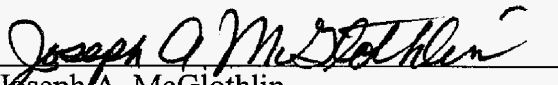
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