

BEFORE THE  
STATE OF NEW JERSEY  
BOARD OF PUBLIC UTILITIES

**In the Matter of the Application of :**  
**Verizon New Jersey Inc. For Approval :**  
**(i) of a New Plan for an Alternative Form:**  
**of Regulation and (ii) to Reclassify Multi-: BPU Docket No. TO01020095**  
**line Rate Regulated Business Service as :**  
**Competitive Services, and Compliance :**  
**Filing :**

Direct Testimony  
of

**JAMES A. ROTHSCHILD**

On Behalf of the  
New Jersey Division of the  
Ratepayer Advocate

May 15, 2001

**VERIZON NEW JERSEY  
TESTIMONY OF JAMES A. ROTHSCHILD  
TABLE OF CONTENTS**

<b>I. STATEMENT OF QUALIFICATIONS OF JAMES A. ROTHSCHILD .....</b>	<b>1</b>
<b>II. PURPOSE.....</b>	<b>3</b>
<b>III. SUMMARY OF FINDINGS AND RECOMMENDATIONS.....</b>	<b>4</b>
<b>IV. CAPITAL STRUCTURE.....</b>	<b>16</b>
<b>V. COST OF COMMON EQUITY .....</b>	<b>29</b>
A. INTRODUCTION .....	29
B. SUMMARY OF CONCLUSIONS ON COST OF EQUITY .....	33
<b>VI DIVIDEND POLICY.....</b>	<b>37</b>
<b>VII. MERGER SAVINGS.....</b>	<b>39</b>
<b>APPENDIX A- TESTIFYING EXPERIENCE OF JAMES A. ROTHSCHILD.....</b>	<b>1</b>
<b>APPENDIX B IMPLEMENTATION OF BOTH THE DCF METHOD AND THE RISK PREMIUM/CAPM METHOD .....</b>	<b>1</b>
I. DCF METHOD.....	1
A. <i>Dividend Yields for DCF</i> .....	6
B. <i>Computation of Growth Rate</i> .....	7
C. RISK PREMIUM/CAPM METHOD.....	15
<b>APPENDIX C: REASON FOR USING GEOMETRIC AVERAGE AS APPROACH TO MEASURE HISTORIC ACTUAL RETURNS.....</b>	<b>1</b>

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

2

3 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

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

6

7 Q. WHAT IS YOUR OCCUPATION?

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

11

12 Q. PLEASE SUMMARIZE YOUR UTILITY REGULATORY EXPERIENCE.

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

24

1 Q. WHAT IS YOUR EDUCATIONAL BACKGROUND?

2 A. I received an MBA in Banking and Finance from Case Western University (1971)

3 and a BS in Chemical Engineering from the University of Pittsburgh (1967).

4

1 **II. PURPOSE**

2

3 Q. WHAT IS THE PURPOSE OF THIS TESTIMONY?

4 A. The purpose of this testimony is to present current cost of equity data that should  
5 be used by Verizon New Jersey for Plan for Alternative Regulation II (PAR II);  
6 explaining how that cost of equity data should be used; quantifying the merger  
7 savings with Verizon and both NYNEX and GTE; and recommending revisions to  
8 the existing PAR that should be used in formulating PAR II, including a proposal  
9 for sharing the merger savings with ratepayers. I will also comment on Verizon  
10 New Jersey's dividend policy.

11

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

2

3 Q. PLEASE SUMMARIZE YOUR FINDINGS AND RECOMMENDATIONS IN  
4 THIS CASE.

5 A. The regulatory environment has been working very much in the favor of Verizon  
6 New Jersey. Verizon Communications, Inc., the parent of Verizon New Jersey,  
7 along with the three other former Regional Bell Operating Companies (RBOC's)  
8 have strongly benefited from the cash flow and embedded customer base provided  
9 from regulated telephone subsidiaries such as Verizon New Jersey. This inherent  
10 strength has become obvious during the severe downturn recently experienced by  
11 the rest of the telecommunications industry.

12 The problems in the non-RBOC portion of the telecommunications industry  
13 became so extreme that the April 23, 2001 issue of *Business Week* magazine has a  
14 major story entitled "TELECOM MELTDOWN". The article contains the  
15 following quote (page 102):

16 Seven American [telecommunications] upstarts have filed for  
17 bankruptcy, and dozens more are expected. And the industry's debt  
18 looks like a ticking time bomb: Telecom players in the U.S. and Europe  
19 have nearly \$700 billion of it, and some analysts estimate that more  
20 than \$100 billion in junk bonds will end up in default or restructured.  
21 Ultimately, the telecom meltdown could be almost as costly as the \$150  
22 billion taxpayer bailout of the savings and loan industry in the late  
23 1980's.  
24

25 The referenced *Business Week* article is 11 pages long. Almost all of what  
26 appears in the article is relaying extremely bad news about business conditions in

1 the telecommunications industry. An exception to the discussion of severe  
2 problems in the telecommunications industry appears on page 106:

3  
4 Not all of telecom, however, is on the ropes. The local phone  
5 companies – SBC, Verizon, BellSouth and Qwest – have continued to turn in  
6 steady financial results, in part because they face relatively little competition in  
7 their core markets. At the same time, they’ve been able to capitalize on some  
8 of the fast-growing segments of the industry, such as data and wireless  
9 services. Verizon thinks the communications business is promising enough  
10 that it’s boosting its capital spending to \$18 billion this year from \$17.6 billion  
11 in 2000. “We’re going through a period where the fittest and the best-  
12 financed will do well,” says co-CEO Ivan Seidenberg.  
13  
14

15 The above quotes are typical of other opinions that have been expressed in the  
16 financial press regarding the telecommunications industry and are confirmed by  
17 stock price movements. The evidence is now more obvious than ever that the  
18 regulated telephone operations of Verizon have provided it with a huge advantage  
19 over the non-RBOC telecommunications companies. It has, in effect, been able to  
20 ride the checkbooks and advantages of the embedded customer base of the  
21 regulated companies onto establishing positions of extreme power within the  
22 telecommunications marketplace. In order for PAR II to properly balance the  
23 interests of investors and ratepayers, it needs to recognize what has been  
24 happening. Instead of going even further away from recognizing the important  
25 contribution of New Jersey ratepayers into the strength of Verizon by weakening  
26 PAR I, PAR II should fix the problems with PAR I. Instead of eliminating the  
27 profit sharing feature of PAR I, this ratepayer protection feature should be  
28 strengthened in PAR II. This strengthening should include:

1           **1. PERMANENT RATE REDUCTION.** A permanent rate reduction of  
2           \$175,249,046, or 12.3% of intrastate regulated services is needed to bring  
3           rates closer to the level that is required to balance the interests of investors  
4           and ratepayers. This rate reduction should be implemented as soon as  
5           possible. This rate reduction is conservative not only because it assumes the  
6           company's rate base and allocation factors are correct, but because it also  
7           does not include any of the high profits from the yellow page business. This  
8           reduction is consists of a reduction of \$56,189,053 to reflect the current  
9           return on equity in excess of the cost of equity and another \$119,059,993  
10          permanent rate reduction to reflect one-half of the intrastate share of the  
11          ongoing savings from both the Bell Atlantic-Nynex merger and the Bell  
12          Atlantic-GTE merger. See Schedule JAR 1, Page 3.

13  
14          **2. RATE REFUND.** A one-time refund to ratepayers of \$53 million to reflect a  
15          50% share of the cumulative merger savings allocated to New Jersey intrastate  
16          regulated operations. See Schedule JAR 11, Page 1.

17  
18          **3. MODIFICATION OF THE EARNINGS SHARING FORMULA.** The  
19          new formula should be based upon the current cost of equity rather than  
20          frozen at the old, much higher cost of equity level that existed back in 1992.  
21          It also should contain other features that I explain later in this section of my  
22          testimony.

23  
24          **4. CAPITAL STRUCTURE.** Recognition that the capital structure to use to  
25          compute the return on equity should contain no higher percentage of common  
26          equity than is utilized by Verizon, Inc. The facts obtained from the company  
27          in interrogatory responses show that the reported capital structure of Verizon  
28          New Jersey in no way reflects either the actual capital structure financing New  
29          Jersey regulated operations or the capital structure management would choose  
30          if it were designing a capital structure that it believed to be most appropriate  
31          for the regulated telephone operations in New Jersey.

32  
33



1 Q. ARE YOUR RECOMMENDATIONS IN THIS CASE SUBJECT TO  
2 REVISION?

3 A. Yes. The company refused to answer some of the interrogatory requests that  
4 relate to cost of capital. After receiving and analyzing the interrogatory responses,  
5 if appropriate I will prepare updated testimony.

6

7 Q. WHAT IS THE PROPER METHOD TO MEASURE THE ACTUAL RATE OF  
8 EARNINGS ACHIEVED BY VERIZON NEW JERSEY?

9 A. The consolidated capital structure of Verizon Communications, Inc. provides a  
10 conservatively high estimate of the level of common equity in the capital structure  
11 actually financing the regulated operations of Verizon New Jersey. Therefore, I  
12 recommend that the Verizon Communications consolidated capital structure be  
13 used to form the basis for the actual earned return on equity computations. This  
14 consolidated capital structure contains a lower percentage of common equity than  
15 the percentage shown on the books of Verizon New Jersey. Yet, the regulated  
16 portion of New Jersey operations is of lower risk than the unregulated operations.  
17 Therefore, if the regulated operations were stand-alone, they should be expected  
18 to have less equity and more debt than the combined Verizon New Jersey  
19 operations. It is improper to arbitrarily use the Verizon New Jersey reported  
20 capital structure as a proxy for the actual capital structure financing New Jersey  
21 regulated operations. Using the Verizon Communications capital structure is  
22 more appropriate since it at least represents the capital structure where common  
23 equity is actually raised from public investors. But, even the Verizon

1 Communications consolidated capital structure still overstates the amount of  
2 common equity in the capital structure that is appropriate for the regulated New  
3 Jersey operations because the unregulated operations of Verizon are more risky.  
4 This higher risk causes Verizon Communications consolidated capital structure to  
5 contain more equity than if all of the operations owned by Verizon  
6 Communications were of comparable risk to Verizon's regulated operations in  
7 New Jersey. In order to present an actual capital structure rather than a more  
8 controversial hypothetical capital structure, I have proposed the use of the  
9 Verizon Communications consolidated capital structure. Because of the lower  
10 risk of the regulated New Jersey operations than the risk of the consolidated  
11 Verizon operations, this Verizon Communications consolidated capital structure is  
12 a proxy with a conservatively high level of common equity to assign to Verizon  
13 New Jersey's regulated operations. Given the risk differences between the entire  
14 businesses owned by Verizon Communications, Inc. as compared to the regulated  
15 New Jersey operations, the Board could be justified in using a capital structure  
16 containing a lower percentage of common equity than I have used. However, no  
17 justification exists for using a capital structure for actual return on equity or cost  
18 of equity computations for Verizon New Jersey's regulated operations that  
19 contains any higher percentage of common equity than is being used by the  
20 consolidated Verizon Communications, Inc. Determining the appropriate capital  
21 structure to assign to Verizon New Jersey's regulated operations is important  
22 because the amount of common equity attributed to Verizon New Jersey's

1 operations greatly influences the actual earned return on book equity  
2 computation.

3

4 Q. DOES UNDERSTATING THE RETURN ON EQUITY ACTUALLY  
5 FINANCING VERIZON NEW JERSEY OPERATIONS HARM NEW JERSEY  
6 RATEPAYERS?

7 A. Yes. Understating the return on equity of Verizon New Jersey directly harms  
8 ratepayers because it deprives them of the earnings sharing to which they are  
9 entitled under alternative regulation. The understatement only helps investors  
10 because the understatement of Verizon New Jersey earnings does NOT result in  
11 any understatement of the earnings of Verizon Communications, Inc. The ease  
12 with which the capital structure of a subsidiary such as Verizon New Jersey can  
13 be manipulated means that whenever the actual return on equity of Verizon New  
14 Jersey is measured for earnings cap purposes or for regulated rate of return  
15 purposes, the starting point of the analysis should be the consolidated Verizon  
16 capital structure. As stated earlier, the appropriateness of using the consolidated  
17 capital structure for measuring return on equity for Verizon (known as Bell  
18 Atlantic at the time) has been established both by the FCC and by the Washington,  
19 D.C. Public Service Commission.

20

21 Q. THE BOARD LAST ESTABLISHED THE EARNINGS SHARING  
22 PARAMETERS IN 1992. ARE THEY STILL APPROPRIATE TODAY?

1 A. The concept of an earnings sharing plan is more important than ever, but the  
2 formula as it stands is obsolete. The financial world is vastly different than it was  
3 back in 1992 when the BPU first established the return on equity levels at which  
4 earnings sharing should begin. If the cost of equity had gone up since 1992, it is  
5 hard to imagine that Verizon New Jersey would not have been crying loudly that  
6 to protect investors, the earnings sharing parameters (if they were to be  
7 implemented) would have to be increased. Now that the cost of equity has come  
8 down, the BPU's responsibility to balance the interests of investors and ratepayers  
9 means that it should listen to the ratepayer's cries that the lower cost of capital  
10 means that the earnings sharing threshold should be reduced. A simple updating  
11 of the BPU's 1992 Order re Verizon New Jersey should recognize that the cost of  
12 equity has dropped by about 2.3%, or 160 basis points, since the time of that  
13 decision. Also, rather than using a zone above the cost of equity as the point  
14 earnings sharing should begin, a truer 50/50 sharing of the benefits would occur if  
15 that earnings sharing were to start at BA-NJ's current cost of equity rather than at  
16 a zone above that cost. Therefore, I propose that the new earnings cap should be  
17 10% on equity. Earnings above 10% should be shared between investors and  
18 ratepayers.

19

20 Q. IS THERE ANY ADDITIONAL EVIDENCE IN THIS CASE THAT  
21 CONFIRMS THE REASONABILITY OF YOUR 10% COST OF EQUITY  
22 COMPUTATION?

1 A. Yes. The “Joint Proxy Statement for 1999 Annual Meetings of Shareholders and  
2 Prospectus” (the prospectus) made available for review by the company in  
3 response to RPA-34 contains a valuation report conducted by Salomon Smith  
4 Barney dated July 27, 1998. As is shown on page 141 of the prospectus, my 10%  
5 cost of equity recommendation is the exact mid-point of the 9% to 11% DCF  
6 range used by Salomon Smith Barney in its valuation computations. As shown on  
7 page 150 of the same document, Merrill Lynch used an 8.5% to 10.5% range for  
8 its DCF computations for its report also dated July 27, 1998. Therefore, the mid-  
9 point of the range used by Merrill Lynch is 9.5% or 0.5% below my equity cost  
10 estimate. In July 1998, the interest rate on long-term treasury bonds was about  
11 5.6%, or very close to the same as it is now.

12

13 Q. HAS VERIZON NEW JERSEY ACTUALLY EARNED MORE THAN THE  
14 EARNINGS SHARING THRESHHOLD?

15 A. Yes. Verizon investors have profited handsomely in recent years, but ratepayers  
16 have gotten nothing from the promised earnings sharing. Considering how well  
17 Verizon stockholders have done, the absence of any ratepayer sharing of earnings  
18 shows that the existing alternative ratemaking procedure has been biased in favor  
19 of investors at the expense of ratepayers. Since the alternative regulation plan  
20 was implemented in 1992, the actual returns achieved by Verizon common  
21 stockholders has been above the level intended by the earnings cap. In two years  
22 (1994 and 2000), the total return was below the earnings cap, but in all the other  
23 years, the earnings were substantially higher than the earnings cap. The earnings

1 level above which earnings sharing is supposed to occur was 13.7%. See pages  
2 44-45 of the Board's Decision in Docket TO92030358. Yet, the average annual  
3 return achieved by Verizon Stockholders averaged 14.56%, or 86 basis points  
4 above the level that was supposed to trigger earnings sharing. As shown on  
5 Schedule JAR 3, Verizon (Bell Atlantic) stockholders earned the following  
6 returns from 1993 through 2000:

<b>Year</b>	<b>Annual Total Return</b>
1993	30.69%
1994	-3.83%
1995	13.30%
1996	15.32%
1997	18.32%
1998	39.77%
1999	20.77%
2000	-9.56%

7

8 The average return of 14.56% that I cited is based upon the compound annual  
9 return over the period, a number that is lower than the 15.60% arithmetic average  
10 of the annual returns shown in the above table. See Schedule JAR 4.

11

12 Q. PLEASE EXPLAIN WHY YOU HAVE RECOMMENDED THAT MERGER  
13 SAVINGS BE SHARED WITH RATEPAYERS.

14 A. Ratepayers have been supporting 100% of the costs of what was originally New  
15 Jersey Bell and is now known as Verizon New Jersey for many decades. Without  
16 this ratepayer support, Verizon New Jersey would never have existed and merger  
17 savings would never have been possible. Because of this support, ratepayers are  
18 entitled to benefit from the merger savings. While a strong case could be made

1 that ratepayers are entitled to 100% of the savings, if they were given 100% of the  
2 savings Verizon New Jersey's management might not have sufficient incentive to  
3 properly manage costs. Therefore, it is reasonable to share the savings, but it is  
4 unreasonable to give 100% of the savings to investors. The BPU should abide by  
5 its responsibility to balance the interests of investors and ratepayers and require  
6 Verizon New Jersey to pass on to New Jersey ratepayers both a one-time refund  
7 to reflect their proportionate share of the historical merger savings from the Bell  
8 Atlantic/NYNEX merger and a permanent rate reduction to reflect their  
9 proportionate share of the ongoing savings from both the Bell Atlantic/NYNEX  
10 merger and the Bell Atlantic/GTE merger. The one-time refund should be \$53  
11 million, an amount equal to half of the total actual savings from the merger. The  
12 permanent reduction has been estimated as another \$100 million per year, an  
13 amount equal to half of the expected ongoing merger savings. Absent this sharing,  
14 investors would get it all and ratepayers would get nothing.

15

16 Q. DID THE EARNINGS SHARING PLAN FROM PAR I WORK PROPERLY?

17 A. No. The old earnings sharing formula gave nothing to ratepayers while investors  
18 received profits considerably in excess of the cost of equity. The old earnings  
19 sharing allocated 100% of the excess earnings to investors and 0% to ratepayers.  
20 This was improper. The Ratepayer Advocate proposes a modification to the  
21 earnings sharing mechanism for 2001 and beyond. The new earnings sharing plan  
22 for alternative ratemaking that I propose would make it easier for regulators to  
23 fairly allocate excess earnings between investors and ratepayers. The new

1 recommended plan, which can be referenced as the full earnings sharing formula,  
2 is as follows:

3 **a)The return on equity achieved by the regulated operations of**  
4 **Verizon New Jersey based upon a return on equity computation**  
5 **using the consolidated Verizon capital structure, not the Verizon**  
6 **New Jersey capital structure.** The portion for sharing should be  
7 equal to the actual return on Verizon New Jersey operations that  
8 exceeds 10% on Verizon's consolidated equity be used to establish the  
9 amount available for the sharing with ratepayers. Then, 25% of this  
10 earnings in excess of 10% should be passed on to New Jersey  
11 ratepayers.

12 **b) The total return earned by Verizon common stockholders.** To  
13 the extent that the total return (dividend yield plus stock price  
14 appreciation) achieved by Verizon common stockholders (measured  
15 based upon the average actual NYSE closing stock price of Verizon  
16 for the ten trading days before and ten trading days after January 1,  
17 2001 or whatever date the new alternative ratemaking plan is  
18 implemented) exceeds 10%, 25% of the proportionate value applicable  
19 to New Jersey regulated operations should grossed up for income  
20 taxes and then passed on to ratepayers.

21

22 I have recommended that only 25% of the savings from each of the above  
23 categories be passed on to ratepayers rather than the more traditional 50%. This was



1 done because I proposed that ratepayers receive a sharing benefit from both of the  
2 above computations. Therefore, if the excess earnings appears equally in both the  
3 return on book equity computation and the computation of the actual return to  
4 stockholders, ratepayers will receive no more than 50% of the total benefit from  
5 excess earnings. This new plan give the BPU an opportunity to provide meaningful  
6 protection to ratepayers from having rates be so high that the company continues to  
7 earn excessively high profits.

8

1 **IV. CAPITAL STRUCTURE**

2

3 Q. YOU HAVE RECOMMENDED THAT THE CONSOLIDATED CAPITAL  
4 STRUCTURE OF VERIZON BE USED TO MEASURE THE ACTUAL  
5 RETURN ON EQUITY ACHIEVED BY VERIZON NEW JERSEY'S  
6 REGULATED OPERATIONS RATHER THAN THE REPORTED CAPITAL  
7 STRUCTURE OF VERIZON NEW JERSEY. HOW DO THESE TWO  
8 CAPITAL STRUCTURES COMPARE?

9 A. As of 12/31/2000, the actual capital structure of Verizon Communications, Inc.  
10 consolidated consisted of 37.63% common equity, or 11.91% less than the  
11 49.54% level of common equity shown by Verizon New Jersey. My source for the  
12 balance sheet information was the 2000 10 K reports to the U.S. Securities and  
13 Exchange Commission.

14

15 Q. WHY SHOULD THE BOARD USE THE VERIZON COMMUNICATIONS  
16 CONSOLIDATED CAPITAL STRUCTURE FOR COST OF CAPITAL AND  
17 EARNINGS TESTING PURPOSES?

18 A. Ideally, the Board should use the capital structure for the regulated operations of  
19 Verizon New Jersey that would produce the lowest overall cost of capital in the  
20 long-run<sup>1</sup>. It is a basic principle of finance that the lower the business risk of a  
21 company, the less common equity it can safely use in its capital structure. When  
22 the level of common equity is lowered, there is a corresponding increase in the  
23 amount of debt. Business risk impacts the amount of debt a company can

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<sup>1</sup> The capital structure that will produce the lowest overall cost of capital in the long-run considers both the cost of equity and the resultant cost of debt. Therefore, it is NOT true that the capital structure with the lowest overall cost of capital in the long-run is one with unrealistically low levels of common equity.

1 prudently carry because debt payments have to be made in accordance with the  
2 contract (or bond indenture) in both good times and bad times. If a company  
3 should fail to make its debt payments or the company's bondholders could force  
4 the company into bankruptcy. Therefore, a lower business risk lowers the chance  
5 that the company could experience problems in making its debt payments.

6 It would only be proper to consider using Verizon New Jersey's reported  
7 capital structure as a proxy for the regulated portion of Verizon New Jersey's  
8 operations if 1) the capital structure were not impacted by the higher business risk  
9 of the unregulated activities and 2) if the capital structure of Verizon New Jersey  
10 were a fully arms-length determined capital structure that could provide a window  
11 on what management of Verizon actually believes will produce the lowest overall  
12 cost of capital. The reported capital structure of Verizon New Jersey does neither  
13 of these things.

14

15 Q. HAS VERIZON NEW JERSEY MADE ANY ATTEMPT TO DESIGN THE  
16 CAPITAL STRUCTURE OF VERIZON NEW JERSEY SO THAT IT WILL  
17 PRODUCE THE OVERALL COST OF CAPITAL?

18 A. No. In interrogatory RPA-44, Verizon New Jersey was asked how it determined  
19 what capital structure is appropriate for it to use. Interrogatory RPA-45 asked  
20 Verizon New Jersey if it believed it was appropriate for it to utilize a higher  
21 percentage of common equity in the capital structure. Verizon New Jersey  
22 answered both of those interrogatories by referencing its answer to RPA-42.  
23 RPA 42. RPA 42 explains that Verizon Communications requires that Verizon  
24 New Jersey set its capital structure with only the goal of being able to achieve a  
25 specific bond rating. The response to RPA-42 correctly notes that a bond rating  
26 determines the cost of debt financing. However, a capital structure for a fully  
27 independent and completely competitive company with good management would

1 take a broader perspective than just the cost of debt. A healthy competitive  
2 market forces companies to be cost efficient in all areas, including the cost of  
3 capital. The cost of debt is but one component of the cost of capital. The other  
4 very important component of the cost of capital is the cost of equity. Yet, as  
5 shown in the responses to the interrogatories, Verizon Communications, not  
6 Verizon New Jersey, keeps control of the overview perspective that includes the  
7 key cost tradeoffs between the mix of debt and equity in the capital structure of  
8 Verizon New Jersey.

9

10 Q. DO THE CAPITAL STRUCTURE ACTIVITIES OF VERIZON NEW JERSEY  
11 IMPACT THE CAPITAL STRUCTURE OF VERIZON COMMUNICATIONS?

12 A. If Verizon New Jersey issues debt, that debt shows up both on the balance sheet  
13 of Verizon New Jersey and Verizon Communications, Inc. Therefore, as the  
14 parent of Verizon New Jersey, Verizon Communications, Inc. has a vested  
15 interest in the level of debt financing done by Verizon New Jersey. The more debt  
16 financing done by Verizon New Jersey, the more equity Verizon Communications,  
17 Inc. must have to keep its consolidated balance sheets in the desired capital  
18 structure ratios.

19

20 Q. DOES VERIZON NEW JERSEY SELL ANY OF ITS OWN COMMON  
21 STOCK TO THE PUBLIC?

22 A. No. All of the common equity of Verizon New Jersey is owned by Verizon  
23 Communications, Inc. All of the common equity of Verizon New Jersey is raised  
24 by Verizon Communications, Inc.

25

26

1 Q. IF VERIZON NEW JERSEY NEEDS MORE COMMON EQUITY, DOES  
2 VERIZON COMMUNICATIONS NECESSARILY RAISE THIS COMMON  
3 EQUITY THROUGH EITHER RETAINING EARNINGS OR SELLING NEW  
4 COMMON EQUITY TO THE PUBLIC?

5 A. No. Verizon Communications has raised much of its common equity through  
6 sales of common equity to the public. But, it has also raised what internal  
7 bookkeeping categorizes as equity through the issuance of debt. If the only  
8 source of “equity” at the subsidiaries owned by Verizon Communications, Inc.  
9 was either common stock sales or retained earnings, then the sum of the equity of  
10 the subsidiaries owned by Verizon Communications would have no more equity  
11 than the sum of the total common equity balance of all of its subsidiaries.  
12 However, as acknowledged by the company in response to RPA-44 that the sum  
13 of the common equity balances of the subsidiaries of Verizon Communications are  
14 added together, the total equity is “...considerably more than the total  
15 consolidated equity of Verizon.” This means that the equity shown in the  
16 subsidiaries is considerably more than the actual amount of common equity plus  
17 retained earnings that represents the total of the actual equity invested in the  
18 company by equity investors.

19

20 Q. IF VERIZON COMMUNICATIONS USES ITS FUNDS TO BUY BACK  
21 COMMON STOCK, WHAT IMPACT DOES THAT HAVE ON ITS  
22 COMMON EQUITY BALANCE?

23 A. If Verizon Communications uses its funds to repurchase common stock, this  
24 represents a return of invested funds from the company back to those  
25 stockholders that decide to sell the company common stock. The effect of such a  
26 transaction is, other things being equal, for the level of common equity in the  
27 capital structure to decline.

1 Q. DOES A STOCK BUYBACK REDUCE THE LEVEL OF COMMON EQUITY  
2 ON THE BOOKS OF THE SUBSIDIARIES OWNED BY VERIZON  
3 COMMUNICATIONS?

4 A. Even though a stock buyback in reality represents a reduction in the level of  
5 common equity actually obtained from equity investors, the stock buyback does  
6 not influence the amount of common equity carried on the books of the  
7 subsidiaries of Verizon. This fact was acknowledged by Verizon New Jersey in  
8 its response to RPA-46 d.

9

10 Q. IS VERIZON COMMUNICATIONS ABLE TO USE LESS COMMON  
11 EQUITY IN ITS CAPITAL STRUCTURE BECAUSE THE HIGHER EQUITY  
12 RATIOS AT ITS REGULATED SUBSIDIARIES SUCH AS VERIZON NEW  
13 JERSEY ?

14 A. Yes.

15

16 Q. IS IT GENERALLY ACCEPTED THAT BUSINESS RISK IMPACTS THE  
17 PERCENTAGE OF EQUITY IN THE CAPITAL STRUCTURE IT IS  
18 APPROPRIATE FOR A COMPANY TO USE?

19 A. Yes.

20

21 Q. WAS VERIZON NEW JERSEY ABLE TO JUSTIFY ITS USING A HIGHER  
22 PERCENTAGE OF COMMON EQUITY ON ITS BALANCE SHEET  
23 BECAUSE OF A RISK COMPARISON BETWEEN IT AND VERIZON  
24 COMMUNICATIONS, INC?

25 A. No. The company acknowledges in response to RPA-51 that it "... has not  
26 performed any specific analysis of the effect of variability of Verizon NJ's  
27 earnings or cash flows on its level of common equity."

1 Q. HOW IS THE CAPITAL STRUCTURE OF VERIZON NEW JERSEY  
2 IMPACTED BY THE UNREGULATED ACTIVITIES?

3 A. Exhibit A-11 of the updated testimony of company witness Mr. Hall shows then  
4 net investment of Verizon New Jersey broken down into major categories. Based  
5 upon the numbers he shows, the New Jersey intrastate rate regulated portion of  
6 Verizon New Jersey accounts for about 60% of the total. This means that a  
7 substantial portion of Verizon New Jersey's business is influenced by risks other  
8 than those experienced by the portion that is subject to New Jersey intrastate  
9 regulation. Failing to recognize this in the capital structure selection process  
10 could have the effect of causing New Jersey intrastate regulated operations to  
11 subsidize the rest of Verizon New Jersey's business activities.

12

13 Q. LEAVING ASIDE THE HUGE PROBLEM OF THE INFLUENCE OF  
14 BUSINESS ACTIVITIES NOT REGULATED BY NEW JERSEY, HAS THE  
15 CAPITAL STRUCTURE OF VERIZON NEW JERSEY BEEN ESTABLISHED  
16 IN A FULLY ARMS-LENGTH MANNER?

17 A. No. Verizon New Jersey does not have any publicly outstanding common stock.  
18 All of the publicly sold equity resides at the Verizon Communications  
19 consolidated level. Therefore, at this level it is at least possible that the actual  
20 capital structure reflects the capital structure that Verizon management believes  
21 will produce the lowest overall cost of capital.

22

23 Q. IS THE ACTUAL CAPITAL STRUCTURE OF VERIZON  
24 COMMUNICATIONS ALSO INFLUENCED BY BOTH THE NEW JERSEY  
25 REGULATED AND THE OTHER BUSINESS ACTIVITIES OF VERIZON,  
26 BOTH REGULATED AND UNREGULATED?

1 A. Yes. Since the New Jersey intrastate regulated operations of Verizon are at the  
2 low end of the risk spectrum, the higher risk of the remainder of Verizon  
3 Communications businesses will put upward pressure on the level of common  
4 equity in the capital structure. Therefore, whatever percentage of common equity  
5 in the capital structure that is appropriate for Verizon Communications as a whole  
6 will overstate the level of common equity in the capital structure that is proper for  
7 the New Jersey intrastate regulated operations. Thus, my recommendation of  
8 using the consolidated capital structure of Verizon Communications, Inc. as the  
9 capital structure for computing the actual earnings of Verizon New Jersey's  
10 regulated intrastate operations and the cost of capital for Verizon New Jersey  
11 should be viewed as a conservatively high level of common equity.

12

13 Q. WHEN YOU HAVE COMPUTED THE CAPITAL STRUCTURE OF  
14 VERIZON COMMUNICATION, DID YOU USE THE ACTUAL  
15 ACCOUNTING VALUE COMMON EQUITY OR THE MARKET VALUE OF  
16 COMMON EQUITY?

17 A. I used the accounting book value. The accounting book value is proper to use  
18 when evaluating actual earnings in the context of original cost ratemaking  
19 procedures.

20

21 Q. IS THE ACCOUNTING BOOK VALUE APPROACH YOU ARE USING  
22 CONSISTENT WITH STANDARD PRACTICE BY THE NEW JERSEY BPU?

23 A. Yes. I have been involved in numerous utility rate proceedings in New Jersey for  
24 decades as noted in my list of matters at Appendix A. In ALL of those cases in  
25 which a capital structure was determined, the BPU has determined the capital  
26 structure based upon the accounting book value of the company's capital, not its  
27 market value. In fact, the use of the accounting book values to determine capital



1 structure is rarely even made an issue. The only exception I can think of is  
2 Verizon's witness in prior cases.

3

4 Q. IS THE BOOK VALUE APPROACH TO CAPITAL STRUCTURE ANALYSIS  
5 THAT YOU ARE USING CONSISTENT WITH THE WAY THE BOARD OF  
6 DIRECTORS OF VERIZON NEW JERSEY DETERMINES ITS CAPITAL  
7 STRUCTURE?

8 A. Yes. See the response to RPA-72b.

9

10 Q. HOW DOES THE MARKET VALUE APPROACH TO DETERMINING  
11 CAPITAL STRUCTURE DIFFER FROM USING THE ACCOUNTING BOOK  
12 VALUE?

13 A. For determining capitals structure, a large difference would generally be caused by  
14 using the market price of the common stock rather than the actual investment  
15 made in the company by investors. The book value investment fully reflects the  
16 actual investment made by equity investors in a company because it includes both  
17 the original invested capital and retained earnings. The market value of the  
18 common stock is simply the stock price multiplied by the number of shares  
19 outstanding. If the market value of common stock is used as a substitute for book  
20 value, the actual investment made by common stock investors is replaced with an  
21 amount equal to the market price of the company's stock multiplied by the  
22 number of shares outstanding.

23

24 Q. IF THE MARKET VALUE OF CAPITAL RATHER THAN THE BOOK  
25 VALUE OF CAPITAL WERE USED TO DETERMINE CAPITAL  
26 STRUCTURE, WOULD THERE BE ANY OTHER NECESSARY CHANGES?

1 A. Yes. Using a market value capital structure would represent a major change – a  
2 change away from not only original cost ratemaking, but would effectively be a  
3 change from original cost accounting as well. If the Board were to use a market  
4 value capital structure approach, then this would mean that they would be  
5 including increases or decreases in the stock price as part of the funds provided by  
6 investors. If increases (or decreases) in common equity are included in the capital  
7 structure determination, then increases (or decreases) in the stock price would  
8 also have to be included as part of the per books income included on the  
9 company's income statement. Since, as shown on Schedule JAR 3, the total  
10 return earned on the common stock of Verizon has been high, the resulting  
11 increase to income would be substantial.

12

13 Q. IS CAPITAL STRUCTURE AN IMPORTANT CONSIDERATION IN THE  
14 BOND RATING PROCESS?

15 A. Yes.

16

17 Q. WHAT CAPITAL STRUCTURE DO RATING AGENCIES SUCH AS  
18 MOODYS AND STANDARD AND POORS USE WHEN EVALUATING THE  
19 BOND RATING?

20 A. They use the actual book capital structure, not the market value capital structure.

21

22 Q. IS THE MARKET BASED CAPITAL STRUCTURE OF ANY USE  
23 WHATSOEVER?

24 A. Yes. It has some use in academic circles. It shows what the capital structure of a  
25 company would be if all of its capital had been raised at current prices. It also can  
26 be used as a measure of the impact of dilution should a company issue new

1 common stock. For cost of capital purposes, however, the market based capital  
2 structure has essentially no meaning.

3

4 Q. DOES THE DIFFERENCE IN THE ACTUAL CAPITAL STRUCTURE OF  
5 VERIZON COMMUNICATIONS, CONSOLIDATED, AND THE REPORTED  
6 CAPITAL STRUCTURE OF VERIZON NEW JERSEY MAKE A  
7 SIGNIFICANT DIFFERENCE?

8 A. Yes. Page 3 of the updated testimony of company witness Mr. Hall claims that  
9 Verizon New Jersey's intrastate regulated operations earned 11.63% in 2000.  
10 Assuming that his computation is correct based upon the reported capital  
11 structure of Verizon New Jersey, then the real earned return on equity achieved  
12 by Verizon New Jersey based upon the actual consolidated capital structure  
13 increases from 11.63% to 14.16%. See Schedule JAR 1, P. 2.

14

15 Q. HAVE OTHER JURISDICTIONS FOUND THAT IT IS PROPER TO REJECT  
16 THE USE OF THE SUBSIDIARY CAPITAL STRUCTURE IN FAVOR OF  
17 THE VERIZON CONSOLIDATED CAPITAL STRUCTURE?

18

19 A. Yes. For example, in an order issued on December 7, CC Docket No. 89-624,  
20 the cost of capital represcription proceedings, the FCC stated, on page 2:

21 We find that the capital structure of the BOC's should not be used in  
22 determining the overall interstate access cost of capital because **the**  
23 **capital structure of those entities is subject to manipulation by the**  
24 **holding companies.** We therefore adopt for this represcription  
25 proceedings the approach, embodied in the Part 65 rules, of using the  
26 composite cost of debt and capital structure of the RHC's in calculating  
27 the overall unitary rate of return. [Emphasis added.]

28

1 In a case involving a Bell Atlantic subsidiary then called the Chesapeake and  
2 Potomac Telephone Company (C&P), and now called Bell Atlantic-DC, the  
3 Washington DC Public Service Commission said:

4  
5 First, the evidence shows that C&P continues to adhere to the debt ratio range  
6 established by Bell Atlantic. Tr. 1399-1400. C&P admitted that Bell Atlantic  
7 continues to set such ranges. Tr. 1426. C&P also failed to present evidence to  
8 refute the Commission's finding in Formal Case No. 850, that C&P is not free to  
9 reject these ratios...

10  
11 Second, C&P was unable to provide evidence that it does not continue to  
12 manipulate dividend payouts to Bell Atlantic in order for Bell Atlantic to  
13 maximize its consolidated overall rate of return...

14  
15 Third, the percentage of equity in Bell Atlantic's capital structure remains low  
16 in comparison to the level in C&P's capital structure. In fact, the disparity of  
17 14.36 percentage points between Bell Atlantic's equity percentage, 43.74%, and  
18 C&P's equity percentage, 58.10%, is even greater than the disparity of 12.92  
19 percentage points that existed in Formal Case No. 850. This disparity is  
20 inconsistent with the general rule that the amount of equity in a company's capital  
21 structure is directly related to that company's business risk.... C&P's reliance on  
22 a comparison of its capital structure with that of other regulated LECs is  
23 misplaced. As OPC argued, the companies cited by C&P are subsidiaries that  
24 have the same incentives and opportunities to manipulate their capital structures  
25 to maximize the rates they can charge...

26  
27 Fourth, the Commission in Formal Case No. 850 found that C&P could not  
28 feasibly operate its non-regulated business with the 6% equity remaining in Bell  
29 Atlantic's consolidated capital structure after the balance sheets of the Bell  
30 Operating companies were removed...

31  
32 The above is from pages 23 and 24 of the Opinion and Order (Order No. 10353)  
33 in Formal Case No. 926 by the Washington, D.C. Public Service Commission  
34 issued December 21, 1993.

35  
36 Q. WERE YOU A WITNESS IN THE ABOVE-MENTIONED BELL ATLANTIC  
37 CASES IN WASHINGTON, D.C?

1 A. Yes. In both Formal Case No. 850 and Formal Case No. 926, I was the cost of  
2 capital witness for The Office of People's Counsel (OPC). I was the witness that  
3 first brought the problem with using the C&P subsidiary capital structure to the  
4 attention of the Commission. A copy of my capital structure testimony from both  
5 Formal Case No. 850 and Formal Case No. 926 is included with this testimony as  
6 Appendix C. Also included in Appendix C is a copy of the entire capital structure  
7 section from the Opinion and Orders issued by the Washington D.C. Commission  
8 in both of these dockets.

9

10 Q. WHAT FIRM AUDITS BELL ATLANTIC?

11 A. According to page F-3 of the 2000 10K of Verizon New Jersey, Inc. , the books  
12 are audited by Pricewaterhouse Coopers, LLP.

13

14 Q. ARE YOU AWARE OF ANY STATEMENTS FROM VERIZON NEW  
15 JERSEY'S AUDITORS ABOUT THE APPLICABILITY OF A SUBSIDIARY  
16 BALANCE SHEET?

17 A. Yes. Prior to the merger to form Pricewaterhouse Coopers, LLP, Price  
18 Waterhouse was hired to advise the Long Island Power Authority regarding its  
19 proposed takeover of some of the electric utility assets of Long Island Lighting  
20 Company. In this context, Elizabeth M. McCarthy, Partner of the accounting firm  
21 Price Waterhouse, stated in a presentation to a meeting of the Board of Trustees  
22 of the New York State Long Island Power Authority on June 11, 1997, that:

23 ... whenever you have a situation where you have a holding company, it is  
24 important to have provision for hypothetical cap structure **because a**  
25 **holding company can capitalize its operating companies any way it**

1           **wants**, a hundred percent equity or anything else in between, a hundred  
2           percent debt or anything else in between.<sup>2</sup>

3

4           (Emphasis added.)

5

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<sup>2</sup> A transcript of the entire trustee meeting of June 11, 1997 is available on the website of the Long Island Power Authority at [www.lipa.state.ny.us](http://www.lipa.state.ny.us) . The referenced quote appears on page 95 of the transcript.

1 **V. COST OF COMMON EQUITY**

2

3 **A. Introduction**

4

5 Q. WHY HAVE YOU COMPUTED THE COST OF EQUITY TO VERIZON IN  
6 THIS PROCEEDING?

7 A. I have computed the cost of equity because the current alternative regulation in  
8 New Jersey includes an earnings sharing formula and because the future  
9 alternative regulation plan should also include an earnings sharing formula. The  
10 Board found that, based upon the economic climate that existed as of the time of  
11 its order, that the company could not request a rate increase for protected services  
12 unless its rate of return fell below 11.7%, could not request an increase for rate  
13 regulated services unless its rate of return fell below 12.7%, and would have to  
14 share earnings 50/50 with ratepayers if its earnings exceeded 13.7%.<sup>3</sup> Since about  
15 nine years has passed since these parameters were determined, these percentages  
16 should be revised to reflect the current economic climate.

17

18 Q. HOW DID YOU DETERMINE THE COST OF EQUITY, AND WHAT WERE  
19 YOUR FINDINGS?

20 A. I both conducted a differential analysis in which I determined how much the cost  
21 of equity changed since the Board's decision based upon 1992 economic  
22 conditions, and determined in an absolute sense what the cost of equity is today.  
23 Based upon applying both the DCF method and the risk premium/CAPM method,  
24 I find that the cost of equity has declined by about 2.33% (233 basis points) since

---

<sup>3</sup> Pages 44 and 45 of the Board's Decision and Order in Docket No. TO92030358.

1 the Board's finding. See Schedule JAR 2. Therefore, if the parameters used by  
2 the Board were merely updated, the 11.7% for protected services should be  
3 lowered to 9.4%, the 12.7% for regulated services should be lowered to 10.4%,  
4 and the level over which earnings sharing should begin should be reduced from  
5 13.7 to 11.4%. However, the cost of equity to Verizon is currently no more than  
6 about 9.5% if based upon the Verizon – New Jersey capital structure or 10.0% if  
7 based upon the Verizon consolidated capital structure. See Schedule JAR 2.  
8 Since even the Verizon consolidated capital structure should be viewed as  
9 containing a conservatively high estimate of the level of common equity  
10 appropriate for the regulated operations of Verizon New Jersey, it is conservative  
11 to use the Verizon consolidated capital structure for return on equity  
12 computations and improper to use the distorted Verizon New Jersey capital  
13 structure. Therefore, assuming the Board will use the Verizon consolidated  
14 capital structure for the computation of earnings sharing, the return on equity  
15 target from which earnings sharing should begin is 10.0%. Should the Board  
16 chose to use the Verizon New Jersey capital structure to compute the actual  
17 return on equity, then (to be consistent with the lower risk associated with the  
18 higher level of common equity in the capital structure of Verizon New Jersey) the  
19 level from which earnings sharing begins should be reduced from 10.0% to 9.5%.  
20 Otherwise, the company could earn considerably more than its cost of equity  
21 without providing any sharing of the benefits with ratepayers.

22

23 Q. WHAT IS THE COST OF EQUITY?

24 A. The cost of equity is the rate of return that must be offered to a common equity  
25 investor in order for that investor to be willing to buy the common stock. The  
26 rate of return is earned in two different ways. One part of the return is from a  
27 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. While it is uncommon in the utility industry, many companies do not pay a  
4 dividend at all. Yet, investors are willing to buy the stock if they feel that the  
5 likely capital appreciation will offset the lack of any dividend income. Common  
6 equity investors do not know with certainty what the stock price will be in the  
7 future. Also, investors are not certain at what rate future dividends might be  
8 increased or decreased. They also recognize that the possibility exists that  
9 dividends could be totally eliminated. Therefore, common equity investment  
10 always entails risk, but the risk can vary greatly from company to company.  
11 Typically, public utility common stocks are among the least risky common equity  
12 investments because dividends are generally more secure, and because utility  
13 companies enjoy a territorial monopoly for at least a major part of their business.  
14 The territorial monopoly for a utility company is especially useful for risk  
15 reduction because utility companies provide a basic service that is needed by their  
16 customers both in good times and in bad times. Therefore, as long as it can prove  
17 cost justification, a utility company can (through the mechanism of a rate case)  
18 increase its rates to the point where it can recover all of its reasonably incurred  
19 costs – including the cost of capital.

20 The above description of the cost of equity might sound to some like a  
21 description of the DCF method because it talks about dividend yield and stock  
22 price appreciation. Perhaps a major part of the reason that the DCF method has  
23 been so commonly used over the years is because, more than any other method, it  
24 directly examines these factors that provide the incentive for investors to buy  
25 common stock in the first place. The DCF method starts with the current  
26 dividend yield, and adds to that dividend yield an estimate of growth to arrive at  
27 the estimated cost of capital. This growth is really the estimate of the future

1 capital appreciation that investors are expecting. Dividend growth, book value  
2 growth, and earnings growth, to the extent they may be used, are only relevant to  
3 the degree they can help estimate stock price appreciation.

4 The risk premium method, which includes the CAPM method, is also  
5 commonly used by witnesses in rate proceedings. The risk premium/CAPM  
6 method is really measuring the very same thing as the DCF method --- the total  
7 return expected by a common stock investor. Only rather than determining this  
8 total return by directly estimating future dividends and capital appreciation, the  
9 method is looking to either interest rates or the inflation rate to help estimate what  
10 total return common stock investors want.

11 The return an investor cares about is best measured as the return on market  
12 price. An investor who buys a common stock at \$10.00 per share and sells it a  
13 year later for \$10.90 will have received a 9% return (plus dividends, if any)  
14 irrespective of whether or not the company earned any money, and irrespective of  
15 the return on book value. However, utility commissions have the responsibility of  
16 balancing the interests of investors and ratepayers. Therefore, if it can be  
17 determined that investors are willing to buy stock with the EXPECTATION of  
18 being able to earn an annual return of 9%, then a commission should set rates so  
19 that the return on used and useful rate base is at the level where the future return  
20 on book value is expected to be 9%. If the market price should happen to be  
21 below book value, this would NOT be justification for providing a lower return  
22 than the cost of equity demanded by investors. If the market price should happen  
23 to be above book value, this would NOT be justification for providing a higher  
24 return than the cost of equity demanded by investors. As the U. S. Supreme  
25 Court found in its decision in the Hope Natural Gas case (320 US 591-660), the  
26 stock price is "... the end product of the process of rate-making not the starting

1 point...” and that “... the fact that the value is reduced does not mean that the  
2 regulation is invalid.”

3

4 **B. Summary of Conclusions on Cost of Equity**

5

6 Q. WHAT IS THE COST OF EQUITY TO VERIZON NEW JERSEY?

7 A. The cost of equity to Verizon is currently 10.0%, and is 9.50% to Verizon New  
8 Jersey. This is based upon the results of both the DCF method and the risk  
9 premium/CAPM method. See Schedule JAR 2.

10

11 Q. HOW DID YOU ARRIVE AT YOUR RECOMMENDED COST OF EQUITY?

12 A. I reviewed the results of the DCF methods shown on **Sch. JAR 2**. The results  
13 shown on **Sch. JAR 2** were developed from the Discounted Cash Flow, or DCF,  
14 method and the risk premium/CAPM method. I applied only the constant growth  
15 version of the DCF method.

16 A review of the data on Schedule JAR 2 shows that the cost of equity for  
17 Verizon (or Bell Atlantic as it was then called) was indicated to be 12.61% back  
18 in 1992. The DCF cost of equity to comparative telephone companies is currently  
19 indicated to be 9.30% to 10.52% depending upon whether average or spot stock  
20 prices are used and whether the comparative group consisting of BellSouth,  
21 Qwest, SBC, and Verizon, or the same group excluding Verizon, or the same  
22 group excluding both Verizon and Qwest are used. I also have confirmed the  
23 results for the comparative groups of telephone companies by comparing the

1 results to the cost of equity indicated for a comparative groups of electric  
2 companies, a comparative group of gas companies, and a comparative group of  
3 water companies. As shown on the bottom of Schedule JAR 2, I have interpreted  
4 the DCF results to be indicating a cost of equity of 9.50% for telephone  
5 companies. I arrived at this result by giving primary weight to the results of the  
6 DCF analysis as applied to BellSouth and SBC. However, if I had given more  
7 weight to the other groupings of telephone companies, my result would have been  
8 close to the same. The results of the electric companies, gas companies, and  
9 water companies are only shown to confirm the reasonability of the result I  
10 obtained for the telephone companies.

11

12 Q. WHY DID YOU PRESENT THE DCF ANALYSIS OF TELEPHONE  
13 COMPANIES WITH AND WITHOUT VERIZON AND QUEST?

14 A. I showed the results with and without Verizon because of an issue brought up by  
15 Verizon during my cross-examination in the UNE proceedings. In those  
16 proceedings, the company suggested in a cross-examination question that the  
17 book value of Verizon might not be reported accurately by Value Line. Since the  
18 time of that cross-examination, Value Line has issued two subsequent reports on  
19 Verizon. These new reports continue to show a book value per share of Verizon  
20 stock that is consistent with the prior report questioned by Verizon. Book value  
21 is an important component of the DCF computations both because it impacts the  
22 computation of future expected return on equity and the market-to-book ratio.  
23 The company has been asked, in interrogatories, to reconcile the Value Line book

1 value computation with its book value computations. So far, the company has  
2 refused to answer the question it posed during the UNE proceedings. See the  
3 response to RPA-54. Should a satisfactory reconciliation be provided, I will  
4 explain the implications of this in my updated testimony.

5 I showed the analysis both with and without Qwest because, while Qwest is  
6 technically an RBOC (the parent company purchased U.S. West a few years ago),  
7 unlike the other three RBOCs, the origins of the parent company were not an  
8 RBOC.

9

10 Q. WHAT DOES THE RISK PREMIUM/CAPM METHOD SHOW?

11 A. The inflation risk premium/CAPM method shows that the cost of equity was  
12 10.98% back in 1992 and 8.91% currently. Taken in aggregate, both the DCF  
13 method and the risk premium/CAPM method at a cost of equity estimate of  
14 11.56% based upon 1992 conditions and 9.96% based upon current conditions. I  
15 rounded the 9.96% up to 10.0%.

16

17 Q. DOES THE DROP IN THE COST OF EQUITY REFLECT CHANGES IN  
18 THE CAPITAL MARKETS OR CHANGES IN THE RISK OF BELL  
19 ATLANTIC?

20 A. The cost of equity reflects changes in the capital markets. The risk of Bell  
21 Atlantic, as indicated by its beta, is the same now as it was in 1992. According to  
22 the 1992 issues of Value Line, in 1992, the beta of Bell Atlantic was 0.85.  
23 According to the May 7, 2000 issue of Value Line (the most recent covering Bell

1 Atlantic), the beta of Bell Atlantic is still 0.85. Since the beta of an average risk  
2 company is 1.0, a beta of 0.85 means that Bell Atlantic's risk is 1 minus .85, or  
3 15% below the risk experienced by the average company.

4 Q. HOW HAVE YOU IMPLEMENTED THE DCF METHOD AND THE RISK  
5 PREMIUM/CAPM METHOD IN THIS CASE?

6 A. The details of how these methods were implemented are provided in Appendix B  
7 of this testimony.

8

1 **VI. DIVIDEND POLICY.**

2

3 Q. HAVE YOU REVIEWED VERIZON NEW JERSEY'S DIVIDEND POLICY  
4 AS REQUESTED BY THE BOARD IN ITS TELECOMMUNICATIONS  
5 ORDER IN DOCKET NO. TO99120934, AGENDA DATE 12/20/00?

6 A. Yes.

7

8 Q. WHAT DOES THAT REVIEW SHOW?

9 A. My review of dividend policy for Verizon New Jersey and for Verizon  
10 Communications is shown on Schedule JAR 12. This review shows that as a  
11 percentage of net income, Verizon New Jersey has paid 70.8% of its net income  
12 as a dividend to Verizon Communications on average over the three years from  
13 1998 to 2000. This is considerably higher than the 56.8% dividend paid by  
14 Verizon Communications to the outside stockholders. Dividends as a percentage  
15 of net cash provided by operating activities from 1998-2000 averaged 33.5% for  
16 Verizon New Jersey and 26.5% for Verizon Communications. Both of these  
17 figures show that Verizon New Jersey is providing more than its share of  
18 dividends to Verizon Communications, Inc.

19

20 Q. IS THERE ANYTHING WRONG WITH VERIZON NEW JERSEY PAYING  
21 A HIGHER PERCENTAGE OF ITS EARNINGS AND CASH FLOW TO  
22 VERIZON COMMUNICATIONS AS A DIVIDEND?

23 A. No, not necessarily. Other things being equal, if dividends from Verizon New  
24 Jersey to Verizon Communications were lower, this would only make the level of  
25 common equity in the capital structure of Verizon New Jersey higher than it  
26 already is. As long as Verizon New Jersey's capital structure remains strong  
27 enough to support Verizon New Jersey's ability to borrow at reasonable rates, I

1 see no reason why the Board need be concerned about Verizon New Jersey's  
2 dividend policy.  
3



1 **VII. MERGER SAVINGS**

2

3 Q. WHAT LEVEL OF MERGER SAVINGS DO YOU RECOMMEND BE  
4 PASSED ON TO RATEPAYERS?

5 A. Based upon that information, I recommend that ratepayers be given a one-time  
6 refund equal to \$53 million which represented 50% of the estimated \$115 million  
7 of net savings allocated to Verizon New Jersey intrastate regulated operations  
8 made available from the Bell Atlantic-NYNEX merger from 1997 through 2000 in  
9 addition to a permanent rate reduction of \$105 million which is equal to 50% of  
10 the estimated New Jersey intrastate ongoing savings allocated to the Bell Atlantic-  
11 NYNEX merger and the Bell Atlantic/GTE merger. See Schedule JAR 11, Page  
12 1.

13

14 Q. HAVE YOU BEEN ABLE TO INDEPENDENTLY DETERMINE THE  
15 LEVEL OF SAVINGS ACHIEVED BY VERIZON AS A RESULT OF ITS  
16 MERGER WITH NYNEX AND THEN WITH GTE?

17 A. No. I have had to rely upon information provided by the company either in  
18 testimony or interrogatory responses.

19

20 Q. HAVE YOU MADE ANY CHANGES TO THE COMPANY  
21 COMPUTATIONS?

22 A. Yes. Mr. Hall's computations dramatically understate the true level of merger  
23 savings. First, his approach mismatches the benefits associated with the merger  
24 and the expenses associated with the merger. Benefits from the merger are  
25 expected to continue on into the future. Yet, none of the expenses were  
26 amortized. See the company's response to RPA-60a. In addition to the serious  
27 time mismatch in Mr. Hall's computations, he only included expense savings and

1 expense increases in his analysis. My computations include not only expense  
2 savings, but other financial benefits derived from the merger as well. These  
3 benefits include revenue increases and capital cost savings. The magnitude of the  
4 revenue increases and capital cost savings were obtained from company sources.

5 I expanded the savings to include savings not associated with the OTC  
6 because merger savings are only possible because of the entire company  
7 operations and how they fit together as a new, combined entity. Therefore, if  
8 ratepayers are entitled to 50% of the merger savings, they are entitled to 50% of  
9 all of the savings not just 50% of a fraction of the savings. Also, I have presented  
10 a computation of the level of ongoing savings from the merger that should be  
11 expected subsequent to 1999. Additionally, it might be appropriate for me to  
12 revise this section of my testimony after receiving and having an opportunity to  
13 analyze the answers to interrogatories.

14 I also expanded the savings to include the value of benefits other than  
15 operating expense savings because revenue and capital cost benefits produce  
16 benefits that are just as real as operating expense benefits.

17

18 Q. ARE ANNUAL CAPITAL COST SAVINGS A DOLLAR FOR DOLLAR  
19 EQUIVALENT OF OPERATING EXPENSE SAVINGS?

20 A. This depends upon the depreciation rate applicable to the capital cost savings.  
21 The company refused to provide the depreciation life applicable to the capital cost  
22 savings associated with the merger. As shown on Schedule JAR 8, Page 2, based  
23 upon an average asset life of 20 years the annual reduction in revenue  
24 requirements associated with a \$300 million annual reduction in capital costs is  
25 \$47 million the first year, \$93 million the second year, and gradually increases  
26 year by year. By the 10<sup>th</sup> year, the annual revenue requirement savings is \$399  
27 million. Since the capital cost savings associated with the Bell Atlantic/NYNEX

1 merger began about five years ago and the rates from this proceeding will be in  
2 effect for a number of years into the future, the numbers on Schedule JAR 11,  
3 page 2 show that the cumulative effect of the capital cost savings that should be  
4 passed on to ratepayers is about 75% of the \$300 million estimated annual capital  
5 cost savings.

6

7 Q. WHY HAVE YOU RECOMMENDED THAT THE ONGOING MERGER  
8 SAVINGS BE PASSED ON TO RATEPAYERS NOW RATHER THAN AT  
9 SOME TIME IN THE FUTURE?

10 A. The Board sets rates for utility service based upon events expected to occur in the  
11 future. Since ratepayers are charged for known increases in expenses and capital  
12 costs, consistency requires that adjustments for expected savings also be made.  
13 Also, it is especially important to pass merger savings onto ratepayers now  
14 because sometime in the future it is possible that all telecommunications services  
15 may become competitive. Although the proper allocation of these monies can be  
16 commented on by other witnesses on behalf of the Ratepayer Advocate, there  
17 should be due consideration of application towards providing social benefits, such  
18 as supplying the needs of schools and libraries. If ratepayers are forced to wait  
19 until the services become competitive, it will be more difficult to pass the savings  
20 on to ratepayers, if the savings were passed on in the form of a rate reduction, the  
21 accumulation of prior years' merger savings would give the regulated operations  
22 an unfair price advantage over future competitors.

23 My computations to arrive at the recommended rate refund and rate reduction  
24 are shown below, with explanations of how the numbers were computed on  
25 Schedule JAR 11, Page 1:

26

	1997	1998	1999	2000	1997-2000 Cumulative Benefit	Ongoing (Estimated)
<b>Bell Atlantic/NYNEX Merger</b>						
Total Expense Savings	155.0	460.0	752.0	1,077.0	2,444.0	1,100.0
Revenues	56.4	167.3	273.5	391.6	888.7	400.0
Capital savings				250.0	666.5	300.0
Adjustment to make capital cost savings equivalent to revenue savings	42.3 (10.6)	125.5 (31.4)	205.1 (51.3)	(62.5)	(166.6)	(75.0)
Total Bell Atlantic/NYNEX Merger Benefits	243	721	1,179	1,656	3,833	1,725
<b>Bell Atlantic/GTE Merger</b>						
Revenue savings						727
Expense Savings						2,000
Annual capital savings						300.0 (75.0)
Total Bell Atlantic/GTE Merger Benefits	-	-	-	-	-	2,952
Total Merger Benefits	243	721	1,179	1,656	3,833	4,677
Verizon New Jersey Benefits	21	62	101	142	183	400
Verizon NJ Intrastate Regulated Savings	11	32	53	74	170	209
Bell Atlantic/NYNEX Regulated Merger Costs	13.3	13.7	13.5	14.5	55	0
Total Merger Savings	(2)	19	39	60	115	209
50% of Merger Savings	(1)	9	20	30	57	105

1 Q. WHY HAVE YOU PROPOSED THAT THE SHARING FORMULA BE  
2 BASED UPON A COMBINATION OF THE EARNINGS ACHIEVED BY  
3 THE COMMON STOCKHOLDERS AND THE EARNINGS ON THE BOOK  
4 EQUITY OF BELL ATLANTIC CONSOLIDATED?

5 A. Each approach has its strengths and weaknesses. The basic weakness of the  
6 return on book approach is that it is too dependent upon actual book earnings.  
7 Actual book earnings can be influenced by both abnormal conditions and by  
8 changes in accounting practices. Looking at the common stock price has the  
9 advantage of not being much influenced by changes in accounting practices or  
10 temporary abnormal conditions in the company's operations. Stock prices are  
11 impacted by not only by regulated operations in New Jersey, but both regulated  
12 and unregulated operations outside of New Jersey. This is an advantage to the  
13 extent the business of the unregulated operations is favorably impacted by  
14 regulated telephone operations. By giving weight to both approaches, a more  
15 balanced result can be obtained. An examination of the historical performance  
16 shows that the book return on equity earnings sharing formula was unfair to  
17 ratepayers because no savings were generated under the plan even though  
18 Verizon's earnings in both New Jersey and on a consolidated basis were strong.  
19 If the balanced approach I am recommending is used, that experience should not  
20 be repeated in the future.

21

22 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

23 A. Yes.

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**Appendix A- Testifying Experience of James A. Rothschild**

**TESTIFYING EXPERIENCE OF JAMES A. ROTHSCHILD  
THROUGH APRIL 16, 2001**

**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**

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 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  
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9 **DELAWARE**  
10  
11 Artesian Water Company, Inc.; Rate of Return, December, 1986  
12 Artesian Water Company, Inc.; Docket No. 87-3, Rate of Return, August, 1987  
13 Diamond State Telephone Company; Docket No. 82-32, Rate of Return, November, 1982  
14 Diamond State Telephone Company; Docket No. 83-12, Rate of Return, October, 1983  
15 Wilmington Suburban Water Company; Rate of Return Report, September, 1986  
16 Wilmington Suburban Water Company; Docket No. 86-25, Rate of Return, February, 1987  
17  
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19  
20 **FEDERAL ENERGY REGULATORY COMMISSION (FERC)**  
21  
22 Koch Gateway Pipeline Company, Docket No. RP97-373-000 Cost of Capital, December,  
23 1997  
24 Maine Yankee Atomic Power Company, Docket No. EL93-22-000, Cost of Capital, July,  
25 1993  
26 New England Power Company; CWIP, February, 1984. Rate of return.  
27  
28 New England Power Company; Docket No.ER88-630-000 & Docket No. ER88-631-000,  
29 Rate of Return, April, 1989  
30 New England Power Company; Docket Nos. ER89-582-000 and ER89-596-000, Rate of  
31 Return, January, 1990  
32 New England Power Company: Docket Nos. ER91-565-000, ER91-566-000 , FASB 106,  
33 March, 1992. Rate of Return.  
34 Philadelphia Electric Company - Conowingo; Docket No. EL-80-557/588, July, 1983. Rate  
35 of Return.  
36 Ocean State Power Company, Ocean States II Power Company, Docket No. ER94-998-000  
37 and ER94-999-000, Rate of Return, July, 1994.  
38 Ocean State Power Company, Ocean States II Power Company, Docket No ER 95-533-001  
39 and Docket No. ER-530-001, Rate of Return, June, 1995 and again in October, 1995.  
40 Ocean State Power Company, Ocean State II Power Company, Docket No. ER96-1211-000  
41 and ER96-1212-000, Rate of Return, March, 1996.  
42 Southern Natural Gas, Docket No. RP93-15-000. Rate of Return, August, 1993, and revised  
43 testimony December, 1994.  
44 Transco, Docket No. RP95-197-000, Phase I, August, 1995. Rate of Return.  
45  
46 Transco, Docket Nos. RP-97-71-000 and RP97-312-000, June, 1997, Rate of Return.  
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1 **FLORIDA**

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- 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 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
- GTE Florida, Inc.; Docket No. 890216-TL, Rate of Return, July, 1989
- Gulf Power Company; Docket No. 810136-EU, Rate of Return, October, 1981
- Gulf Power Company; Docket No. 840086-EI, Rate of Return, August, 1984
- Gulf Power Company; Docket No. 881167-EI, Rate of Return, 1989
- Gulf Power Company; Docket No. 891345-EI, Rate of Return, 1990
- Rolling Oaks Utilities, Inc.; Docket No. 850941-WS, Accounting, October, 1986
- Southern Bell Telephone Company; Docket No. 880069-TL, Rate of Return, January, 1992
- Southern Bell Telephone Company; Docket No. 920260-TL, Rate of Return, November, 1992
- Southern Bell Telephone Company; Docket No. 90260-TL, Rate of Return, November, 1993
- Southern States Utilities, Docket No. 950495-WS, Rate of Return, April, 1996
- Tampa Electric Company; Docket No. 820007-EU, Rate of Return, June, 1982
- Tampa Electric Company; Docket No. 830012-EU, Rate of Return, June, 1983
- United Telephone of Florida; Docket No. 891239-TL, Rate of Return, November, 1989
- United Telephone of Florida; Docket No. 891239-TL, Rate of Return, August, 1990
- Water and Sewer Utilities, Docket No 880006-WS, Rate of Return, February, 1988.

28 **GEORGIA**

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- Georgia Power Company; Docket No. 3397-U, Accounting, July, 1983

33 **ILLINOIS**

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- Ameritech Illinois, Rate of Return and Capital Structure, Docket 96-0178, January and July, 1997.
- Central Illinois Public Service Company; ICC Docket No. 86-0256, Financial and Rate of Return, October, 1986.
- Central Telephone Company of Illinois, ICC Docket No. 93-0252, Rate of Return, October, 1993.
- Commonwealth Edison Company; Docket No. 85CH10970, Financial Testimony, May, 1986.
- Commonwealth Edison Company; Docket No. 86-0249, Financial Testimony, October, 1986.
- Commonwealth Edison Company; ICC Docket No. 87-0057, Rate of Return and Income Taxes, April 3, 1987.
- Commonwealth Edison Company; ICC Docket No. 87-0043, Financial Testimony, April 27, 1987.
- Commonwealth Edison Company; ICC Docket Nos. 87-0169, 87-0427,88-0189,880219,88-0253 on Remand, Financial Planning Testimony, August, 1990.



1 Commonwealth Edison Company; ICC Docket Nos. 91-747 and 91-748; Financial Affidavit,  
2 March, 1991.  
3 Commonwealth Edison Company; Financial Affidavit, December, 1991.  
4 Commonwealth Edison Company, ICC Docket No. 87-0427, Et. Al., 90-0169 (on Second  
5 Remand), Financial Testimony, August, 1992.  
6 Genesco Telephone Company, Financial Testimony, July, 1997.  
7 GTE North, ICC Docket 93-0301/94-0041, Cost of Capital, April, 1994  
8 Illinois Power Company, Docket No. 92-0404, Creation of Subsidiary, April, 1993  
9 Illinois Bell Telephone Company, Dockets No. ICC 92-0448 and ICC \_\_\_\_\_, Rate of  
10 Return, July, 1993  
11 Northern Illinois Gas Company; Financial Affidavit, February, 1987.  
12 Northern Illinois Gas Company; Docket No. 87-0032, Cost of Capital and Accounting Issues,  
13 June, 1987.  
14 Peoples Gas Light and Coke Company; Docket No. 90-0007, Accounting Issues, May, 1990.  
15  
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18 **KENTUCKY**

19  
20 Kentucky- American Water Company, Case No. 97-034, Rate of Return, June, 1997.  
21 Kentucky Power Company; Case No. 8429, Rate of Return, April, 1982.  
22 Kentucky Power Company; Case No. 8734, Rate of Return and CWIP, June, 1983.  
23 Kentucky Power Company; Case No. 9061, Rate of Return and Rate Base Issues, September,  
24 1984.  
25 West Kentucky Gas Company, Case No. 8227, Rate of Return, August, 1981.  
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28 **MAINE**

29  
30  
31 Bangor Hydro-Electric Company; Docket No. 81-136, Rate of Return, January, 1982.  
32 Bangor Hydro-Electric Company; Docket No. 93-62, Rate of Return, August, 1993  
33 Maine Public Service Company; Docket No. 90-281, Accounting and Rate of Return, April,  
34 1991.  
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37 **MARYLAND**

38  
39 C & P Telephone Company; Case No. 7591, Fair Value, December, 1981  
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42 **MASSACHUSETTS**

43  
44 Boston Edison Company; Docket No. DPU 906, Rate of Return, December, 1981  
45 Fitchburg Gas & Electric; Accounting and Finance, October, 1984  
46 Southbridge Water Company; M.D.P.U., Rate of Return, September, 1982  
47  
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1 **MINNESOTA**

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3 Minnesota Power & Light Company; Docket No. EO15/GR-80-76, Rate of Return, July,  
4 1980

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7 **NEW JERSEY**

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9 Atlantic City Sewage; Docket No. 774-315, Rate of Return, May, 1977

10 Atlantic City Electric Company, Docket Nos. ER 8809 1053 and ER 8809 1054, Rate of  
11 Return, April, 1990

12 Atlantic City Electric Company, Docket Nos. EO97070455 and EO97070456, Cost of  
13 Capital, Capital Cost Allocation, and Securitization, December, 1997.

14 Bell Atlantic, Affidavit re Financial Issues regarding merger with GTE, June, 1999.

15 Bell Atlantic-New Jersey, Docket No. TO99120934, Financial Issues and Rate of Return,  
16 August 2000

17 Consumers New Jersey Water Company, BPU Docket No. WR00030174, September 2000

18 Elizabethtown Gas Company. BRC Docket No. GM93090390. Evaluation of proposed  
19 merger with Pennsylvania & Southern Gas Co. April, 1994

20 Elizabethtown Water Company; Docket No. 781-6, Accounting, April, 1978

21 Elizabethtown Water Company; Docket No. 802-76, Rate of Return, January, 1979

22 Elizabethtown Water Company; Docket No. PUC 04416-90, BPU Docket No.  
23 WR90050497J, Rate of Return and Financial Integrity, November, 1990.

24 Elizabethtown Water Company; Docket No. WR 9108 1293J, and PUC 08057-91N, Rate of  
25 Return and Financial Integrity, January, 1992.

26 Elizabethtown Water Company, Docket No. WR 92070774J, and PUC 06173-92N, Rate of  
27 Return and Financial Integrity, January, 1993.

28 Elizabethtown Water Company, Docket No. BRC WR93010007, OAL No. PUC 2905-93,  
29 Regulatory treatment of CWIP. May, 1993.

30 Elizabethtown Water Company, BPU Docket No. WR 95110557, OAL Docket No. PUC  
31 12247-95, Rate of Return, March, 1996.

32 Essex County Transfer Stations; OAL Docket PUC 03173-88, BPU Docket Nos. SE  
33 87070552 and SE 87070566, Rate of Return, October, 1989.

34 GPU/First Energy Proposed Merger, Docket No. EM00110870, Financial Issues, April 2001

35 Hackensack Water Company; Docket No. 776-455, October, 1977 and Accounting,  
36 February, 1979

37 Hackensack Water Company; Docket No. 787-847, Accounting and Interim Rate Relief,  
38 September, 1978

39 Hackensack Water Company; AFUDC & CWIP, June, 1979

40 Hackensack Water Company; Docket No. 804-275, Rate of Return, September, 1980

41 Hackensack Water Company; Docket No. 8011-870, CWIP, January, 1981

42 Inquiry Into Methods of Implementation of FASB-106, Financial Issues, BPU Docket No.  
43 AX96070530, September, 1996

44 Jersey Central Power & Light Company, Docket No. EO97070459 and EO97070460, Cost of  
45 Capital, Capital Cost Allocation, and Securitization, November 1997

46 Middlesex Water Company; Docket No. 793-254, Tariff Design, September, 1978

47 Middlesex Water Company; Docket No. 793-269, Rate of Return, June, 1979

48 Middlesex Water Company; Docket No. WR890302266-J, Accounting and Revenue  
49 Forecasting, July, 1989

1 Middlesex Water Company; Docket No. WR90080884-J, Accounting, Revenue Forecasting,  
2 and Rate of Return, February, 1991  
3 Middlesex Water Company, Docket No. WR92070774-J, Rate of Return, January, 1993  
4 Middlesex Water Company, Docket No. WR00060362, Rate of Return, October, 2000  
5 Mount Holly Water Company; Docket No. 805-314, Rate of Return, August, 1980  
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7 National Association of Water Companies; Tariff Design, 1977  
8 Natural Gas Unbundling Cases, Financial Issues, August 1999  
9 New Jersey American Water Company, BPU Docket No. WR9504, Rate of Return,  
10 September, 1995  
11 New Jersey Bell Telephone; Docket No. 7711-1047, Tariff Design, September, 1978  
12 New Jersey Land Title Insurance Companies, Rate of Return and Accounting, August and  
13 November, 1985  
14 New Jersey Natural Gas; Docket No. 7812-1681, Rate of Return, April, 1979  
15 New Jersey Water Supply Authority, Ratemaking Issues, February, 1995  
16 Nuclear Performance Standards; BPU Docket No. EX89080719, Nuclear Performance  
17 Standards policy testimony  
18 Pinelands Water Company and Pinelands Wastewater Company, Rate of Return, BPU  
19 Dockets WR00070454 and WR00070455, October, 2000.  
20 Public Service Electric & Gas Company, Docket No. EX9412058Y and EO97070463, Cost  
21 of Capital, Capital Cost Allocation, and Securitization, November 1997  
22 Rockland Electric Company; Docket No. 795-413, Rate of Return, October, 1979  
23 Rockland Electric Company, Docket Nos. EO97070464 and EO97070465, Cost of Capital,  
24 Capital Cost Allocation, and Securitization, January, 1998  
25 Salem Nuclear Power Plant, Atlantic City Electric Company and Public Service Electric &  
26 Gas Company, Docket No. ES96030158 & ES96030159, Financial Issues,  
27 April, 1996.  
28 South Jersey Gas Company; Docket No. 769-988, Accounting, February, 1977  
29 South Jersey Gas Company, BRC Docket No. GU94010002, June, 1994  
30 United Artists Cablevision; Docket No. CTV-9924- 83, Rate of Return, April, 1984  
31 Verizon, Rate of Return, BPU Docket No. TO 00060356, October, 2000.  
32 West Keansburg Water Company; Docket No. 838-737, Rate of Return, December, 1983  
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35 **NEW YORK**

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37 Consolidated Edison Company; Case No.27353, Accounting and Rate of Return, October,  
38 1978  
39 Consolidated Edison Company; Case No. 27744, Accounting and Rate of Return, August  
40 1980  
41 Generic Financing Case for Electric & Gas Companies; Case No. 27679, May, 1981  
42 Long Island Lighting Company; Case No. 27136, Accounting and Rate of Return, June, 1977  
43 Long Island Lighting Company; Case No. 27774, Rate of Return, November, 1980  
44 Long Island Lighting Company; Case No. 28176 and 28177, Rate of Return and Revenue  
45 Forecasting, June, 1982  
46 Long Island Lighting Company, Case No. 28553, Rate of Return and Finance, March, 1984  
47 Long Island Lighting Company, Case No. 93-E-1123, Rate of Return and Finance, May,  
48 1994

1 New York Telephone, Case No. 27469, April, 1979  
2 New York Telephone, Case No. 27710, Accounting, September, 1981  
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5 **OHIO**  
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7 Columbia Gas Company of Ohio; Case No. 77-1428-GA-AIR, March, 1979  
8 Columbia Gas Company of Ohio; Case No. 78-1118-GA-AIR, Accounting and Rate of  
9 Return, May, 1979  
10 Ohio Utilities Company; Case No. 78-1421-WS-AIR, Rate of Return, September, 1979  
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12  
13 **OKLAHOMA**  
14  
15 Oklahoma Natural Gas Company, Case PUD No. 94000047, Rate of Return, May, 1995  
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17  
18 **OREGON**  
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20 PacifiCorp, Case UE 116 , Rate of Return, April 2001  
21 Portland General Electric Company, Case UE 102, Rate of Return, July, 1998  
22 Portland General Electric Company, Case UE 115, Rate of Return, April, 2001  
23 Northwest Natural Gas Company, Docket No. UG-132, July, 1999  
24  
25 **PENNSYLVANIA**  
26  
27 Allied Gas, Et. Al., Docket No. R-932952, Rate of Return, May, 1994  
28 ATTCOM - Pennsylvania; Docket No. P-830452, Rate of Return, April, 1984  
29 Borough of Media Water Fund; Docket No. R-901725, Rate of Return, November 1990  
30 Bethel and Mt. Aetna Telephone Company; Docket No. LR-770090452, Accounting and Rate  
31 of Return, January, 1978  
32 Big Run Telephone Company; Docket No. R-79100968, Accounting and Rate of Return,  
33 November, 1980.  
34 Bloomsburg Water Company; Docket Nos. R-912064 and R-912064C001-C003, Rate of  
35 Return, December, 1991.  
36 Citizens Utilities Water Company of Pennsylvania and Citizens Utilities Home Water  
37 Company; Docket No. R-901663 and R-901664, Rate of Return, September, 1990  
38 Citizens Utilities Water Company of Pennsylvania, Docket No. R-00953300, Rate of Return,  
39 September, 1995  
40 City of Bethlehem, Bureau of Water, Docket No. R-943124, Rate of Return, October, 1994  
41 City of Lancaster-Water Fund, Docket R-00984567, Rate of Return, May, 1999  
42 Columbia Gas of Pennsylvania; Docket No. R-78120724, Rate of Return, May, 1979  
43 Dallas Water Co., Harvey's Lake Water Co., Noxen Water Co., Inc. & Shavertown Water  
44 Co. Inc., Docket Nos R-922326, R-922327, R-922328, R-922329, Rate of Return,  
45 September, 1992  
46 Dauphin Consolidated Water Company; Docket No. R-780-50616, Rate of Return, August,  
47 1978  
48 Dauphin Consolidated Water Company; Docket No. R-860350, Rate of Return, July, 1986

1 Dauphin Consolidated Water Company; Docket No. R-912000, Rate of Return, September,  
2 1991  
3 Duquesne Light Company; Docket No. RID-373, Accounting and Rate of Return,  
4 Duquesne Light Company; Docket No. R-80011069, Accounting and Rate of Return, June,  
5 1979  
6 Duquesne Light Company; Docket No. R-821945, Rate of Return, August, 1982  
7 Duquesne Light Company; Docket No. R-850021, Rate of Return, August, 1985  
8 Emporium Water Company, Docket No. R-00005050, Rate of Return, October 2000  
9 Equitable Gas Company; Docket No. R-780040598, Rate of Return, September, 1978  
10 General Telephone Company of Pennsylvania; Docket No. R-811512, Rate of Return  
11 Mechanicsburg Water Company; Docket No. R-911946; Rate of Return, July, 1991  
12 Mechanicsburg Water Company, Docket No. R-922502, Rate of Return, February, 1993  
13 Metropolitan Edison and Pennsylvania Electric Company; Rate of Return, December, 1980  
14 National Fuel Gas Company; Docket No. R-77110514, Rate of Return, September, 1978  
15 National Fuel Gas Company, Docket No. R-953299, Rate of Return, June, 1995  
16 North Penn Gas Company, Docket No. R-922276, Rate of Return, September, 1992  
17 North Penn Gas Company, Docket No. R-00943245, Rate of Return, May, 1995  
18 Pennsylvania American Water Company, Docket R-922428, Rate of Return, October, 1992  
19 Pennsylvania Electric Company; Rate of Return, September, 1980  
20 Pennsylvania Gas & Water Company, Docket No. R-80071265, Accounting and Rate of  
21 Return  
22 Pennsylvania Gas & Water Company; Docket No. R-78040597, Rate of Return, August,  
23 1978  
24 Pennsylvania Gas & Water Company; Docket No. R-911966; Rate of Return, August, 1991  
25 Pennsylvania Gas & Water Company, Docket No. R-922404; Rate of Return, October, 1992  
26 Pennsylvania Gas & Water Company; Docket No. R-922482; Rate of Return, January,  
27 1993  
28 Pennsylvania Gas & Water Company; Docket No. R-932667; Rate of Return, July, 1993  
29 Pennsylvania Power Company; Docket No. R-78040599, Accounting and Rate of Return,  
30 May, 1978  
31 Pennsylvania Power Company; Docket No. R-811510, Accounting, August, 1981  
32 Pennsylvania Power Company; Case No. 821918, Rate of Return, July, 1982  
33 Pennsylvania Power & Light Company; Docket No. R-80031114, Accounting and Rate of  
34 Return  
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36 Pennsylvania Power & Light Company; Docket No. R-822169, Rate of Return, March, 1983  
37 Peoples Natural Gas Company; Docket No. R-78010545, Rate of Return, August, 1978  
38 Philadelphia Electric Company; Docket No. R-850152, Rate of Return, January, 1986  
39 Philadelphia Suburban Water Company; Docket No. R-79040824, Rate of Return,  
40 September, 1979  
41 Philadelphia Suburban Water Company; Docket No. R-842592, Rate of Return, July, 1984  
42 Philadelphia Suburban Water Company; Docket No. R-911892, Rate of Return, May, 1991  
43 Philadelphia Suburban Water Company, Docket No. R-00922476, Rate of Return, March,  
44 1993  
45 Philadelphia Suburban Water Company, Docket No. R-932868, Rate of Return, April, 1994  
46 Philadelphia Suburban Water Company, Docket No. R-00953343, Rate of Return, August,  
47 1995.  
48 Roaring Creek Water Company, Docket No. R-911963, Rate of Return, August, 1991  
49 Roaring Creek Water Company, Docket No. R-00932665, Rate of Return, September, 1993

1 Sewer Authority of the City of Scranton; Financial Testimony, March, 1991  
2 UGI Luzerne Electric; Docket No. R-78030572, Accounting and Rate of Return, October,  
3 1978  
4 United Water, Pennsylvania Inc., Docket No. R-00973947, Rate of Return, August, 1997  
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17 Blackstone Valley Electric Company, Docket No. 2016, Rate of Return, October, 1991  
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22 FAS 106 Generic Hearing; Docket No. 2045, Financial Testimony, July, 1992  
23 Narragansett Electric Corporation; Docket No. 1591, Accounting, November, 1981  
24 Narragansett Electric Corporation; Docket No. 1719, Rate of Return, December, 1983  
25 Narragansett Electric Corporation; Docket No. 1938, Rate of Return, October, 1989.  
26 Narragansett Electric Corporation; Docket No. 1976, Rate of Return, October, 1990  
27 Newport Electric Corporation; Docket No. 1410, Accounting, July, 1979  
28 Newport Electric Corporation; Docket No. 1510, Rate of Return  
29 Newport Electric Corporation; Docket No. 1801, Rate of Return, June, 1985  
30 Newport Electric Corporation; Docket 2036, Rate of Return, April, 1992  
31 Providence Gas Company; Docket No. 1971, Rate of Return, October, 1990  
32 Providence Gas Company, Docket No. 2286, Rate of Return, May, 1995  
33 South County Gas Company, Docket No. 1854, Rate of Return, December, 1986  
34 Valley Gas and Bristol & Warren Gas Co., Docket No. 2276, April, 1995  
35 Wakefield Water Company, Docket No. 1734, Rate of Return, April, 1984  
36  
37

38 **SOUTH CAROLINA**

39  
40 Small Power Producers & Cogeneration Facilities; Docket No. 80-251-E, Cogeneration  
41 Rates, August, 1984  
42 South Carolina Electric & Gas Company; Docket No. 79-196E, 79-197-G, Accounting,  
43 November, 1979  
44

45  
46 **VERMONT**

47  
48 Green Mountain Power Company, Docket No. 4570, Accounting, July, 1982  
49 New England Telephone Company; Docket No. 3806/4033, Accounting, November, 1979

1 New England Telephone Company; Docket No. 4366, Accounting

2

3

4 **WASHINGTON, D.C.**

5

6 PEPCO/BGE Merger Case, Formal Case No. 951, Rate of Return, September, 1996

7 Bell Atlantic- DC, Formal Case No. 814, Phase IV, Rate of Return, September, 1995

8 Chesapeake and Potomac Telephone Company; Formal Case No. 850; Rate  
9 of Return, July, 1991.

10 Chesapeake and Potomac Telephone Company, Formal Case No. 814-Phase III, Financial  
11 Issues, October, 1992.

12 Chesapeake and Potomac Telephone Company, Formal Case 926, Rate of Return, July, 1993.

13 PEPCO; Formal Case No. 889, Rate of Return, January, 1990.

14 PEPCO; Formal Case No. 905, Rate of Return, June, 1991.

15 PEPCO; Formal Case No. 912, Rate of Return, March, 1992.

16 PEPCO; Formal Case No. 929, Rate of Return, October, 1993.

17 PEPCO; Formal Case No. 951, Rate of Return, September, 1996

18 PEPCO; Formal Case No. 945, Phase I, Rate of Return, June, 1999.

19 Washington Gas Light Company, Case No. 922, Rate of Return, April, 1993.

20 Washington Gas Light Company, Case No. 934, Rate of Return, April, 1994.

21

22

23 **OTHER**

24

25 Railroad Cost of Capital, Ex Parte No. 436, Rate of Return, January 17, 1983 (Submitted to  
26 the Interstate Commerce Commission)

27 Report on the Valuation of Nemours Corporation, filed on behalf of IRS, October, 1983  
28 (Submitted to Tax Court)

1     **APPENDIX B   IMPLEMENTATION OF BOTH THE DCF METHOD AND**  
2                             **THE RISK PREMIUM/CAPM METHOD**

3  
4     **I. DCF Method**

5  
6     Q. HOW IS THE DCF METHOD USUALLY IMPLEMENTED?

7     A.    The constant growth version of the DCF method is the most commonly  
8            encountered approach in utility ratemaking. It is applied by implementing the  
9            following formula:

10  
11                    cost of equity = dividend yield + future expected growth

12  
13     Q. IS THE DCF MODEL WIDELY USED IN UTILITY RATE  
14        PROCEEDINGS?

15     A.    Yes. The DCF model has been widely used for many years. From my  
16            experience, it is more widely used than any other approach to determining the  
17            cost of equity.

18  
19     Q. IS THE DCF MODEL COMMONLY IMPLEMENTED IN A CONSISTENT  
20        MANNER?

21     A.    No. The DCF model is widely used and widely abused. Most implementations  
22            of the DCF model in utility rate proceedings start out with the same D/P +g, or  
23            dividend yield plus growth formula. Also, most generally agree that the growth  
24            rate “g” must be representative of the constant future growth rate anticipated by



1 investors. However, when quantifying growth, all too often indicators of  
2 growth that are NOT appropriate are relied upon. In recent years, the most  
3 common error I have seen is for witnesses to directly use a five-year analysts  
4 consensus growth rate (such as that developed by sources such as Zacks and  
5 I/B/E/S) as a proxy for long-term sustainable growth. Since these growth rates  
6 are specifically for a growth rate in earnings per share for the five years starting  
7 from the actual earnings reported for the most recently completed fiscal year,  
8 they are NOT long-term sustainable growth rates. They are not sustainable in  
9 the long-term because they include the often substantial impact of bringing  
10 earnings up or down to a normal earned return on equity from whatever return  
11 on equity was achieved in the most recently completed fiscal year. Additionally,  
12 such analysts' growth rates tend to be overstated because of the well-  
13 documented propensity for analysts to be optimistic.<sup>4</sup> The combined effect of  
14 the habitual optimism and the required movement over a relatively short five-

---

<sup>4</sup> While there are many sources that have shown this optimism to exist, one noteworthy source is a statement by Arthur Levitt, chairman of the U.S. Securities and Exchange Commission. The following appeared on page 4 of the 5/31/99 issue of Barrons:

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

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

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

By way of explanation for this strange imbalance, he offers the possibility of a "direct correlation between the content of an analyst's recommendation and the amount of business his firm does with the issuer."

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

1 year time period to bring earnings per share up to the optimistic levels causes  
2 five-year analysts growth rates to commonly overstate the future sustainable  
3 growth rate. As a result, DCF approaches that rely upon the direct use of  
4 analysts' five-year growth rates repeatedly overstate the cost of equity.

5

6 Q. HAS VERIZON NEW JERSEY MADE THE MISTAKE OF IMPROPERLY  
7 USING THE ANALYSTS' FIVE YEAR GROWTH RATES IN THE WAY  
8 YOU DESCRIBE?

9 A. Yes. In response to RPA-68, the company claims that its cost of equity is 14.5%  
10 based upon a DCF method that erroneously uses the upwardly biased I/B/E/S  
11 five-year growth rate as a proxy for the long-term sustainable growth rate.

12

13 Q. IS THAT THE ONLY MISTAKE MADE BY VERIZON NEW JERSEY IN ITS  
14 COST OF EQUITY COMPUTATION?

15 A. No. Another mistake made by Verizon in its interrogatory response was to  
16 erroneously inflate the dividend yield by using a quarterly adjustment. The  
17 appropriate way to address a question as intricate as whether to use the quarterly  
18 or the annual version of the DCF model is to do so in a way that considers the  
19 entire picture. The company's approach to the DCF only examined the impact on  
20 the dividend yield computation. In this way, the approach only viewed half of the  
21 story. If dividends are paid sooner, then the company has a shorter time period in  
22 which to re-invest the earnings that will be eventually used to pay a dividend.  
23 Contrary to the impact of the quarterly dividend approach included in the

1 computation shown by the company in its response to RPA-68, rather than  
2 increasing the measurement of the cost of equity, if the DCF model is converted  
3 from an annual model to a quarterly model the cost of equity that resulted from  
4 the implementation of the annual DCF model is slightly lower than if the annual  
5 model is used.

6

7 Q. WHY WOULD A QUARTERLY DCF PRODUCE A LOWER COST OF  
8 EQUITY THAN THE ANNUAL MODEL?

9 A. The company's approach fails to consider that whatever return on equity a  
10 investors expect that a company will be able to earn in the future, the cash flow  
11 expected from that return is what should be used to compute the overall cost of  
12 capital. Whatever return investors expect a company to earn, the company will  
13 earn those rates every day. Customers do not wait until the end of the year to  
14 pay their utility bills. Therefore, the actual return earned by the company will  
15 automatically compound daily. A compounded daily return need not be as high  
16 to produce the desired results as does an annual return. Therefore, if an  
17 adjustment is to be made to increase the total return to consider the quarterly  
18 compounding effect of dividends, then it would likewise be necessary to lower  
19 the allowed return to consider the daily compounding of the allowed return rate  
20 as well as the quarterly compounding effect of dividends. The company's  
21 method errs because it includes the upward adjustment but ignores the  
22 corresponding downward adjustment.

23

1 Q. SHOULD HISTORIC GROWTH RATES IN EARNINGS OR DIVIDENDS BE  
2 USED AS A PROXY FOR LONG-TERM FUTURE GROWTH?

3 A. No. Going back a decade or so, the most common misuse of the DCF model was  
4 for investors to use an historic five- or ten-year growth rate in such factors as  
5 dividends, earnings, and/or book value as a proxy for long-term sustainable  
6 growth. Such historic growth rates were never valid approaches for estimating  
7 investors' expected future growth rates because historic growth rates are highly  
8 influenced by temporary changes that occurred within the historic period. They  
9 were especially popular during a time when interest rates were rising. Rising  
10 interest rates went along with a rising cost of equity, and therefore went along  
11 with earnings that grew not only because of normal factors that cause growth,  
12 but also grew because of the one-time earnings per share increases necessary to  
13 reflect the higher cost of equity that went along with a higher interest rate  
14 environment. Once these factors reversed such that interest rates and the cost  
15 of equity were in a downtrend rather than an uptrend, most witnesses  
16 abandoned the historic growth rate measures.

17 The mathematics in support of the derivation of the DCF model show that  
18 the " $b \times r + sv$ " formula should be used to quantify sustainable growth. This  
19 approach does commonly appear in cost of capital testimonies. While the  
20 appropriateness of this formula is not at issue in this case, amazingly many cost  
21 of capital witnesses do not use this approach even after they have made a  
22 decision to use the constant growth version of the DCF method. Even those  
23 that do use the " $b \times r + sv$ " approach all too often fail to use this properly.

1 Common mistakes with this formula include using historic values of “b x r”  
2 and/or of “sv” rather than future expected values, and most importantly by  
3 failing to realize that in order for the formula to be applied properly, the  
4 retention rate value, “b” must be determined in a manner that is consistent with  
5 the other values input into the DCF model.

6

7 **A. Dividend Yields for DCF**

8 Q. HOW DID YOU APPLY THE DCF MODEL IN THIS CASE?

9 A. I started by taking the first dividend yield as stated in Value Line. Then, the  
10 dividend yield was increased by adding one-half the future expected growth rate.  
11 This upward adjustment to the dividend yield is necessary because the DCF  
12 formula specifies that the dividend yield to be used is equal to the dividends  
13 expected to be paid over the next year divided by the market price. After this  
14 adjustment to increase the dividend yield, the yield is equal to an estimate of  
15 dividends over the next year. To each dividend yield result, I added one-half the  
16 future expected growth rate. After the adjustment, the yield is equal to an estimate  
17 of dividends over the next year.<sup>5</sup>

18

---

<sup>5</sup> The complex version does not directly use dividend yields. Instead, it determines the present value of each dividend payment as a discounted cash flow.

1       **B. Computation of Growth Rate**

2  
3       Q. HOW DID YOU OBTAIN THE GROWTH RATES YOU USED IN THE  
4       CONSTANT GROWTH, OR  $k = D/P + G$ , VERSION OF THE DCF METHOD?

5       A. I derived the growth rates from the internal, or retention growth rate, or "b x r"  
6       method where "b" represents the future expected retention rate and "r" represents  
7       the future expected earned return on book equity. In addition to the "b x r"  
8       growth caused by the retention of earnings, I added an amount to recognize that  
9       growth is also caused by the sale of new common stock in excess of book value.

10       *A critical requirement in the implementation of the simplified version of the*  
11       *DCF model is that the estimate of the future expected growth rate be a growth*  
12       *rate that is expected to be sustained, on average, for many years into the future.*

13       Stock analysts and textbooks recognize that generally the most accurate way to  
14       estimate the sustainable growth rate in a constant growth DCF method is to use  
15       what is usually referred to as the retention growth, or "b x r" method. In this  
16       approach, the future expected retention rate "b" is multiplied by the future  
17       expected return on book equity "r" in order to obtain a sustainable growth rate.  
18       Other methods to estimate future sustainable growth are sometimes used.  
19       However, those methods are generally more subjective, and even if used with  
20       extreme care, do not have the same potential for accuracy that a properly applied  
21       "b x r" estimate has. The reason for this is, in order to produce a meaningful  
22       result, those methods must be adjusted to eliminate factors which would  
23       otherwise cause them to include non-recurring influences on growth.

24       The "b x r" method is best implemented by multiplying the *future expected*  
25       return on book equity by the retention rate that is consistent with both the future  
26       expected return on book equity and the dividend rate used to compute the  
27       dividend yield. Also, future sustainable growth should include an increment of

1 growth to allow for the impact of sales of new common stock above book value.  
2 I generally consider several parameters to determine what future growth investors  
3 consider. In this case, I examined only the input from Value Line. I did this both  
4 so that it was possible to produce results that were as consistent as possible when  
5 applying the method to 1992 and to today, and because the Zacks' consensus  
6 estimate I generally use in addition to Value Line cannot yet be used because the  
7 merger between Bell Atlantic and GTE is too freshly completed. Because of how  
8 recent the merger completion has been, the financial data necessary to compute  
9 growth using the Zack's estimate are not yet available.

10 The "b x r" growth rate computation, unless adjusted, does not account for  
11 sustainable growth that is caused by the purchase or sale of common stock above  
12 book value. Therefore, I modified the "b x r" growth rate to account for this  
13 additional growth factor. This additional growth factor is sometimes referred to as  
14 the "VS" growth.

15 An accurate estimate for the future sustainable value of "r" (return on equity)  
16 multiplied by a value for "b" (retention rate) that is consistent with the selection of  
17 the dividend rate and the expected return on book equity, the computed growth  
18 rate will be a constant, sustainable growth rate.

19  
20 Q. DO STOCK ANALYSTS USE THE "b x r" METHOD?

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

23  
24 How do stock analysts derive forecasts of  $g$ , the expected growth  
25 rate of dividends? Usually, they first assume a constant dividend payout  
26 ratio (that is, ratio of dividends to earnings), which implies that dividends  
27 will grow at the same rate as earnings. Then they try to relate the  
28 expected growth rate of earnings to the expected profitability of the  
29 firm's *future* investment opportunities.

1 The exact relationship is

2

3

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

4

5

6

7

8

9

10

11

12

Q. HOW DID YOU COMPUTE “g”?

13

14

A. As previously stated, I used the “b x ROE” method specified in the above

15

textbook quote, although I refer to it in this testimony as the “b x r” method. In

16

the above equation, ROE has the same meaning as “r”. I recognized that investors

17

have both historical and forecasted information available to determine the future

18

return on book equity expected by investors. Forecasted data includes not only

19

specific data for a company being evaluated, but also includes overall industry

20

forecasted data. Competitive pressures will eventually drive the future sustainable

21

return on equity towards industry average return figures as all companies within an

22

industry are continually seeking the opportunities with the highest earned return.

23

More investment dollars seeking the same opportunity eventually brings the supply

24

and demand into balance, causing the earned return opportunities to be equalized.

25

In determining the future expected earned return on equity for the group of all

26

four RBOCs, I noted that the average Value Line forecasted return on equity for

27

about 5 years into the future is 19.5%, the return on book equity earned on

28

average by these four companies in 1999 was 22.01%, and declined to 20.53% in

29

2000. I also noted that Value Line’s return on book equity forecast for its



1 telecommunications service group (which includes the RBOCs) is for a future  
2 return on equity of 12.0%. The value of "r" that is required in the DCF formula is  
3 the one that is sustainable into the future for much longer than 5 years. Also, it is  
4 important to remember the strong tendency of analysts' estimates to be overly  
5 optimistic. Returns on equity in excess of 20% are recognized by investors to be so  
6 far above the cost of equity that competitive pressures will not permit them to be  
7 sustained. In consideration of all of these factors, I estimated that investors expect  
8 the long-term sustainable return on book equity for the group of four RBOCs to be  
9 15.5%. Therefore, when applying the DCF method, I computed sustainable  
10 growth using 15.5% as the value for "r".

11 The forecasted return on book equity for the RBOCs excluding Qwest and  
12 Verizon had a higher expected return on book equity forecast that was 26.3%  
13 based upon the Value Line expectations and 23.6% based upon the Zacks  
14 consensus growth rate. Again, these extremely high shorter-term return on equity  
15 forecasts were balanced with the Value Line industry average estimate of 12.0%,  
16 this time to arrive at an estimated investor expected future return on book equity,  
17 or "r" of 18.0%.

18 I have reflected the impact on growth caused by the sale or repurchase of  
19 common stock in my recommended growth rate. Value Line's estimate of the  
20 shares of common stock outstanding was used to make this computation.

21

22 Q. THERE ARE COST OF CAPITAL WITNESSES WHO CLAIM THAT THE "b  
23 x r" METHOD IS SOMEHOW CIRCULAR. THIS IS BECAUSE THE

1 FUTURE EARNED RETURN ON BOOK EQUITY THAT YOU USE TO  
2 QUANTIFY GROWTH IS USED TO DETERMINE THE COST OF EQUITY,  
3 AND THE COST OF EQUITY IS THEN USED TO DETERMINE THE FUTURE  
4 RETURN ON EQUITY THAT WILL BE EARNED. IS THIS CIRCULAR?

5 A. No. Those who erroneously claim that the method is circular confuse the  
6 definition of “r” and the definition of “k”. While “r” is defined as the future return  
7 on **book** equity anticipated by investors, “k” is the cost of equity, or the return  
8 investors expect on the **market price** investment. Since the market price is  
9 determined based upon what investors are willing to pay for a stock, and the book  
10 value is based upon the net stockholders’ investment in the company, “r” usually  
11 has a different value than “k”. In fact, the proper application of the DCF method  
12 relates a specific stock market price to a specific expectation of future cash flows  
13 that is created by future earned return (“r”) levels. For example, assume investors  
14 are willing to pay \$10 a share for a company when the expectations are that the  
15 company will be able to earn 12% on its book equity in the future. If events  
16 would cause investors to re-evaluate the 12% return expectation, the stock price  
17 should be expected to change. If investors’ expectations of the future return on  
18 book equity change from 12% to 10%, and there is no corresponding change in  
19 the cost of equity, the stock price would decline. The cost of equity, however,  
20 would not decline simply because an event might occur that would cause investors  
21 to lower their estimate for “r”. The cost of equity is equal to the sum of both the  
22 dividend yield and growth. Investors’ estimate of “r” influences the investors’  
23 estimate for growth. Changes in growth expectations cause investors to change  
24 the price they are willing to pay for stock. A change in the stock price can cause  
25 a change in the dividend yield that offsets the change in expected growth. In this  
26 way, a higher dividend yield would offset by the lower expected growth rate and  
27 leave the cost of equity, “k”, unchanged.

1

2 1. Determination of Future Expected Return on Book Equity, "r"

3 Q. HOW DID YOU DETERMINE THE VALUE OF "r" THAT YOU USED IN  
4 YOUR RETAINED EARNINGS GROWTH COMPUTATIONS?

5 A. I used Value Line's estimate for the future return on book equity as my  
6 estimate for "r". Other things being equal, the higher the estimate for "r", the  
7 higher the estimate of growth.

8

9

10 2. Determination of Retention Rate, "b"

11 Q. HOW HAVE YOU DETERMINED THE VALUE OF THE FUTURE  
12 EXPECTED RETENTION RATE, "b", THAT YOU USED IN YOUR  
13 SIMPLIFIED DCF ANALYSIS?

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

20

21 
$$b = 1 - (D/E), \text{ where}$$

22 
$$b = \text{retention rate}$$

23 
$$D = \text{Dividend rate}$$

24 
$$E = \text{Earnings rate}$$

25

26 However, "E" is equal to "r" times the book value per share. Book value per  
27 share is a known amount, as is "E", consistent with the future expected value for

1 "r", and the "D" used to compute dividend yield. Therefore, to maximize the  
2 accuracy of the DCF method, quantification of the value of "b" should be done in a  
3 manner that recognizes the interdependency between the value of "b" and the  
4 values for "r" and "D". I directly computed the value of "b" based upon the values  
5 of "D", and "r".

6

7 Q. WHAT RETENTION RATES DID YOU USE?

8 A. Based upon the above formula, I used a retention rate for application to the 1992  
9 Bell Atlantic data of 31.58%, and used a retention rate of 43.18% based upon  
10 current data. See Schedule JAR 1.

11

12 Q. ON WHAT DO YOU BASE YOUR CONCLUSION THAT VALUE LINE HAS  
13 A TENDENCY TO PRODUCE OPTIMISTIC PROJECTIONS?

14 A. I base my conclusion on my general experience with analysts reports, and  
15 frequent comments in the financial community. One of those quotes was  
16 provided in the main body of the testimony that appeared on page 4 of the May  
17 31, 1999 issue of Barron's, and is repeated here:

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

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

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

28 By way of explanation for this strange imbalance, he offers the  
29 possibility of a "direct correlation between the content of an analyst's  
30 recommendation and the amount of business his firm does with the  
31 issuer."

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

5 Q. DOES THIS BIAS TOWARDS “BUYS” OVER “SELLS” CARRY OVER TO  
6 EARNINGS ESTIMATES?

7 Yes. As stated on page 98 of the book *Contrarian Investment Strategies: The Next*  
8 *Generation* by David Dreman, Simon & Shuster, 1998, analysts earnings growth  
9 estimates are overly optimistic. “Between 1982 and 1997, analysts overestimated  
10 the growth of earnings of companies in the S&P 500 by a startling 188%. The actual  
11 growth was 7.8% annually, while the original projected growth at the beginning of  
12 each year was 21.9%”. A footnote in the book indicates the source a January 26,  
13 1998 article from *Forbes* Magazine. It also discusses numerous other studies that  
14 reached similar conclusions. One study, also discussed on page 98, reached the same  
15 conclusion regarding Value Line’s forecasts, stating “(h)ow optimistic are analysts’  
16 estimates? Jennifer Francis and Donna Philbrick studies analysts estimates from the  
17 Value Line Investment Survey, some 918 stocks for the 1987-1989 period. Value  
18 Line is well known on the Street for having near-consensus forecasts. The  
19 researchers found that analysts were optimistic in their forecasts by 9% annually, on  
20 average.”

21  
22 Q. WHAT COST OF EQUITY IS INDICATED BY THE IMPLEMENTATION  
23 OF THE DCF METHOD IN THIS CASE?

24 A. As shown on [Schedule JAR 2](#), the cost of equity indicated by the DCF method  
25 was 12.61% back in 1992 and is now 10.02%.

26

1 **C. RISK PREMIUM/CAPM METHOD**

2

3 **Q. PLEASE EXPLAIN THE RISK PREMIUM/CAPM METHOD.**

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

7 One critically important fact to understand when implementing the risk  
8 premium method is that risk premiums have declined in recent years. As  
9 mentioned earlier in this testimony, Federal Reserve Chairman Alan Greenspan,  
10 made a speech on October 14, 1999 entitled “Measuring Financial Risk in the  
11 Twenty-first Century”. The text of the speech is available at  
12 <http://www.bog.frb.fed.us/boarddocs/speeches/1999/19991014.htm>. In the speech,  
13 Chairman Greenspan says:

14

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

20

21 **Q. IS CHAIRMAN GREENSPAN’S VIEW OF THE REDUCTION IN RISK**  
22 **PREMIUMS CONSISTENT WITH WHAT INVESTORS NOW**  
23 **GENERALLY EXPECT?**

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

27

28 The risk premium is the difference between the risk-free interest rate, usually the  
29 return on U.S. Treasury bills, and the return on a diversified stock portfolio.  
30 Over more than 70 years, the return to stocks averaged 11.2%, and T-bills, just

1 3.8%. The difference between the two returns, 7.4%, is the risk premium.  
2 Economists explain this extra return as an investors' reward for taking on the  
3 greater risk of owning stocks. **Most market watchers believe that in recent**  
4 **years, the premium has fallen to somewhere between 3% and 4% because**  
5 **of lower inflation and a long business upswing that makes corporate**  
6 **earnings less variable.**

7 [emphasis added]

8  
9 The *Business Week* article goes on to explain that using the traditional risk  
10 premium model to value stocks results in the conclusion that at its current level of  
11 9,700 (when the article was written), the Dow Jones Industrial Average is  
12 massively overvalued. In using the historic based risk premium model, the article  
13 explains that Charles M. Lee of Cornell University concludes that the Dow Jones  
14 Industrial average is 61% overvalued. In other words, those who use the  
15 historic-based risk premium model think that investors, in aggregate, should not  
16 be buying stocks. The article then goes on to say:

17  
18 But like most models, the Cornell approach looks back to forecast the future.  
19 Hassett and Glassman [of the American Enterprise Institute] say that's crazy,  
20 because the risk premium is shrinking. They argue that stocks have become a  
21 lot less risky than bonds, and in fact they posit that the risk premium is  
22 heading toward zero. In any model that uses a risk premium to calculate the  
23 proper discount factor, lowering the premium from 3% to zero is the same as  
24 slashing interest rates by three full percentage points. "In time stocks and  
25 bonds will converge," predicts Hassett. "The opportunity is being in the stock  
26 market as the market revalues stocks."  
27  
28

29 **Q. DO HASETT AND GLASSMAN REPRESENT THE CONSENSUS OF**  
30 **WALL STREET THINKING WHEN THEY SAY THAT STOCKS ARE**  
31 **NO MORE RISKY THAN BONDS?**

1 A. No. The article then explains that “(m)ost analysts scoff at the notion that  
2 stocks are no riskier than bonds. “There’s still a lot of uncertainty in today’s  
3 world,” says Leah Modigliani, a Morgan Stanley Dean Witter equity strategist.  
4 “The risk premium has moved down, but it’s not zero.”

5

6 **Q. DOES THE ARTICLE SHOW THAT IT IS PROPER TO USE A**  
7 **LOWER RISK PREMIUM TODAY THAN THE HISTORIC ACTUAL**  
8 **RISK PREMIUM?**

9 A. Yes. The article concludes with the following two paragraphs:

10 Forecasts everywhere concede that old models are suspect. Merrill Lynch  
11 &Co.’s quantitative analysts, for instance, look at five valuation models; only  
12 one of them suggests that the market is anything but wildly overvalued. The  
13 optimistic model is based on long-term earnings estimates by the firm’s  
14 analysts, and since analysts tend to be optimists, Merrill economists take a dim  
15 view of its output. “We definitely don’t think it’s the best measure of  
16 valuation,” says Kari E. Bayer, a quantitative strategist at Merrill. And  
17 Prudential Securities’ Smith has told clients that as long as rates remain steady  
18 and earnings accelerate, they can “forget the models.”

19 This may be sound advice. There are no market watchers and  
20 investors more humble than those who heeded the models and yanked their  
21 money out only to see the bull stampede ahead.



1 **Q. CAN YOU POINT TO ANY OTHER ARTICLES THAT ARE**  
2 **CONSISTENT WITH THE ABOVE-QUOTED BUSINESS WEEK**  
3 **ARTICLE?**

4 A. Yes. Page C1 of the March 23, 1999 issue of the *Wall Street Journal* contains  
5 an article entitled “Dow 10000? Prepare for the Hangover”. This article says:

6  
7 Indeed, it is increasingly doubtful that U.S. stock-market returns over  
8 the next 10-years will match the historical averages. That doesn’t mean  
9 stocks will crash or that you will do better with other investments such as  
10 bonds or money-market funds.

11 But the odds suggest that U.S. stocks aren’t likely to out-pace  
12 inflation by eight percentage points a year, as they have over the past  
13 seven decades.

14 This is hardly a radical proposition. Consider the debate between bulls  
15 pronouncing “It’s a new era,” and bears declaring, “It’s a bubble.”

16 The bears think stock-market valuations could revert to historic norms,  
17 which means stocks trading closer to 15 times per-share earnings, less than  
18 half the current level. The bulls argue that stock valuations are  
19 sustainable, because now stocks are less risky.

20 But even if the bulls are right, there isn’t much reason for optimism.  
21 True, if stocks are less risky, current price-earnings multiples may be  
22 justified. But multiples aren’t likely to expand even more.

23 “Before, stocks were considered a lot riskier than other investments, so  
24 they offered a lot higher average return,” says William Reichenstein, an  
25 investments professor at Baylor University. “Today, they’re considered  
26 not much riskier, so their average return going forward won’t be much  
27 higher.”

28 To understand what is at stake, take a closer look at returns over the  
29 past 73 years. Since year-end 1925, the Standard & Poors 500- stock  
30 index has gained 11.2% a year, some eight percentage points more than  
31 the 3.1% annual inflation rate, according to Ibbotson Associates, a  
32 Chicago research firm.

33 William Bernstein, an investment adviser in North Bend, Ore., took  
34 that 8% inflation-adjusted “real” annual gain and broke it into three  
35 component parts. He estimates that 4.5% came from dividends, 2% from  
36 real earnings growth and 1.5% from the increasing value put on that  
37 stream of earnings as reflected in a tripling of the price-earnings multiple  
38 over the past 73 years.

39 “Add the three numbers together and, hey presto, 8% real return,” Mr.  
40 Bernstein says. “Going forward, these three factors argue for much lower

1 returns. Dividends are only around 1.5%. Earnings growth is not  
2 accelerating. And it isn't wise to count on further multiple expansion."  
3 Mr. Bernstein figures the rosier scenario is 1.5% from dividends, 2%  
4 from continued real earnings growth and a 0.5% kicker from further  
5 multiple expansion. That would give us an inflation-adjusted gain of just  
6 4% a year.  
7

8 **Q. IS THE 4% A YEAR INFLATION-ADJUSTED GAIN THE ONLY**  
9 **INFLATION RISK PREMIUM CITED IN THIS WALL STREET**  
10 **JOURNAL ARTICLE?**

11 A. No. The article goes on to cite Scott Lummer, chief investment officer at 401k  
12 Forum. Mr. Lummer believes that the 4% number derived above should be  
13 adjusted up by 3% to account for the impact of stock repurchases. When this is  
14 done "... you get an inflation-adjusted gain of 7% a year." He argues that stock  
15 repurchases which average 3% per year are effectively the same as a dividend.  
16

17 **Q. DOES LOOKING AT A PERIOD LONGER THAN THE LAST 73**  
18 **YEARS PROVIDE ANY EVIDENCE ABOUT WHAT THE INFLATION**  
19 **RISK PREMIUM SHOULD BE?**

20 A. Yes. A book entitled *Stocks for the Long Run*<sup>6</sup> examined the real returns  
21 achieved by common stocks from 1802 through 1997. Page 11 of this book  
22 says:

23  
24 Despite extraordinary changes in the economic, social, and political environment  
25 over the past two centuries, stocks have yielded between 6.6 and 7.2 percent  
26 per year after inflation in all major subperiods.

---

<sup>6</sup> *Stocks for the Long Run* by Jeremy J. Siegel, Professor at Wharton. McGraw Hill, 1998. According to the book cover, Professor Siegel was "... hailed by Business Week as the top business school professor in the country...".

1

2 The book then says on page 12:

3

4 Note the extraordinary stability of the real return on stocks over all major  
5 subperiods: 7.0 percent per year from 1802-1870, 6.6 percent from 1871  
6 through 1925, and 7.2 percent per year since 1926. Ever since World War II,  
7 during which all the inflation in the U.S. has experienced over the past two  
8 hundred years has occurred, the average real rate of return on stocks as been  
9 7.5 percent per year. This is virtually identical to the previous 125 years,  
10 which saw no overall inflation. This remarkable stability of long-term real  
11 returns is a characteristic of mean reversion, a property of a variable to offset  
12 its short-term fluctuations so as to produce far more stable long-term returns.

13 Continuing on page 14, *Stocks for the Long Run* says:

14

15 As stable as the long-term real returns have been for equities, the same  
16 cannot be said of fixed-income assets. Table 1-2 reports the nominal and real  
17 returns on both short-term and long-term bonds over the same time periods as  
18 in Table 1-1. The real returns on bills has dropped precipitously from 5.1  
19 percent in the early part of the nineteenth century to a bare 0.6 percent since  
20 1926, a return only slightly above inflation.

21 The real return on long-term bonds as shown a similar pattern. Bond  
22 returns fell from a generous 4.8 percent in the first sub period to 3.7 percent in  
23 the second, and then to only 2.0 percent in the third.

24

25 The book explains some of the reasons why bond returns have been especially  
26 unstable. Page 16 says:

27

28 The stock collapse of the early 1930's caused a whole generation of  
29 investors to shun equities and invest in government bonds and newly-insured  
30 bank deposits, driving their return downward. Furthermore, the increase in  
31 the financial assets of the middle class, whose behavior towards risk was far  
32 more conservative than that of the wealthy of the nineteenth century, likely  
33 played a role in depressing bond and bill returns.

34 Moreover, during World War II and the early postwar years, interest  
35 rates were kept low by the stated bond support policy of the Federal Reserve.  
36 Bondholders had bought these bonds because of the widespread predictions of  
37 depression after the war. This support policy was abandoned in 1951 because  
38 low interest rates fostered inflation. But interest rate controls, particularly on  
39 deposits, lasted much longer.

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The book then provides a conclusion on page 16 that:

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

The above information from Dr. Siegel's book, the above-quoted articles from *Business Week* and the *Wall Street Journal* combine to explain how it is possible to obtain a good estimate of the cost of equity by adding the historic inflation premium to investor's current expectations for inflation.

**Q. IS IT POSSIBLE TO ACCURATELY QUANTIFY INVESTORS' CURRENT EXPECTATIONS FOR INFLATION?**

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

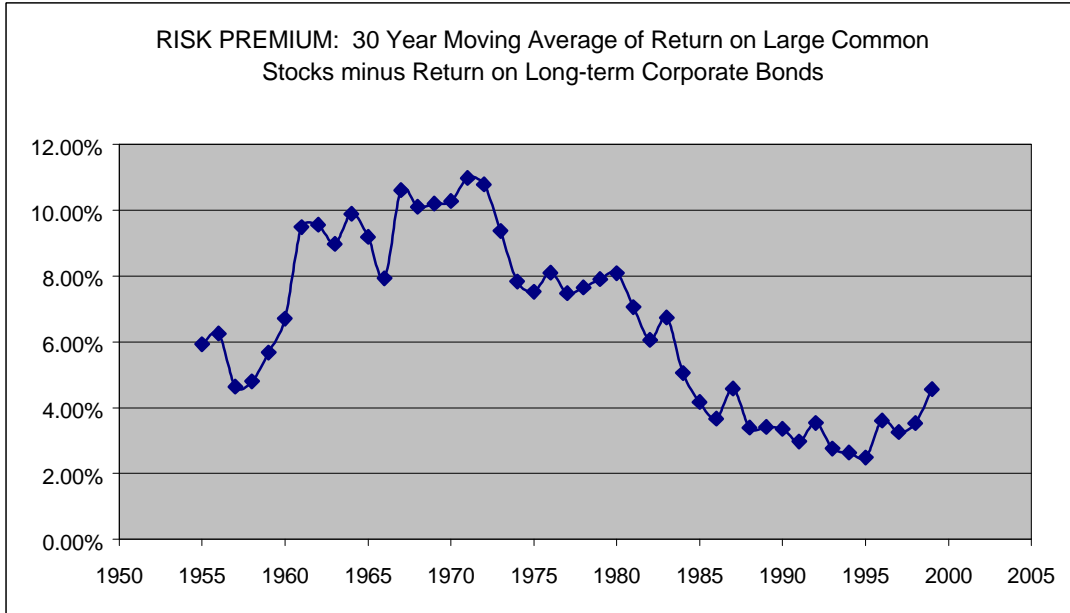
1 **Q. WHAT IS THE CURRENT INFLATION EXPECTATION OF**  
2 **INVESTORS?**

3 A. As of the end of March 2001, the inflation expectation of investors was  
4 estimated to be about 2.1%. This was obtained by observing that long-term  
5 inflation-indexed treasury securities were yielding 3.55%, while long-term non  
6 inflation-indexed treasury securities were yielding 5.65%. The difference  
7 between 5.65% and 3.55% is 2.10%. Adding this 2.1% inflation expectation to  
8 the 6.6% to 7.2% range produces an inflation risk premium indicated cost of  
9 equity of 8.70% to 9.30% for an equity investment of average risk. Then, to  
10 apply this result in this case, it is necessary to adjust the return down to account  
11 for the lower than market-average risk inherent in an investment in electric  
12 utility stocks.

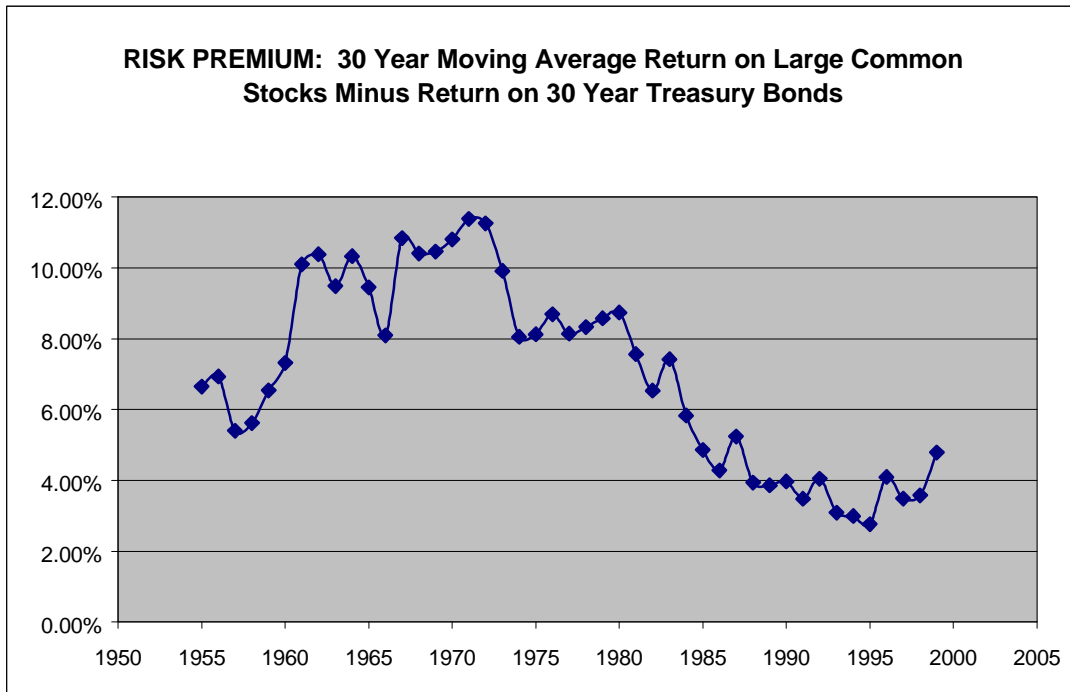
13 The risk premium approach is based upon a premium over the inflation rate. I  
14 made a risk adjustment based upon the average beta of the comparative  
15 telephone companies. The average beta excluding Qwest is 0.85. See Schedule  
16 JAR 3, P. 3. Qwest was excluded because its unregulated telephone operations  
17 have contributed to its extremely high beta of 1.65. To make the adjustment, I  
18 used the yield on 90-day treasury bills because these short-term treasury bills  
19 have a beta of very close to zero. The yield on 90-day treasury bills of 4.11%  
20 was subtracted from the 6.60% to 7.20% risk premium to arrive at a 2.49% to  
21 3.09% equity risk premium over 90-day treasury bills. This 2.49% to 3.09%  
22 was then multiplied by the 0.85 beta to arrive at a risk adjusted equity premium  
23 of 2.12% to 2.63%. The difference between the unadjusted equity risk premium  
24 and the adjusted equity risk premium was then subtracted from the historic  
25 return net of inflation to arrive at an indicated inflation premium cost rate of  
26 8.33% to 8.84%. The mid-point of this range is the risk premium/CAPM equity  
27 cost result of 8.58%. See Schedule JAR 9, page 1.

1 **Q. EARLIER IN THIS SECTION OF YOUR TESTIMONY, YOU**  
2 **SHOWED THAT FEDERAL RESERVE CHAIRMAN GREENSPAN**  
3 **NOTED THAT THE FACT THAT EQUITY RISK PREMIUMS HAVE**  
4 **DECLINED "... IS NOT IN DISPUTE." YOU ALSO PROVIDED**  
5 **SOURCES FROM FINANCIAL LITERATURE CONCLUDING THAT**  
6 **THE RISK PREMIUM IS NOW IN THE RANGE OF 3% TO 4%. DO**  
7 **YOU HAVE ANALYTICAL SUPPORT TO SHOW THAT THE**  
8 **STATEMENTS BY CHAIRMAN GREENSPAN AND FROM THE**  
9 **OTHER SOURCES YOU HAVE QUOTED ARE CORRECT?**

10 **A.** Yes. I examined the historic actual earned returns on common stocks and  
11 bonds from 1926 through 1999. But, rather than merely making one simplistic  
12 computation that examined the entire time period with only one return number  
13 over the entire period, I examined a 30-year moving average of the earned  
14 returns. 30 years is long enough to see if indeed there is a trend to the earned  
15 returns, but not so short as to be overly influenced by the natural volatility in  
16 earned returns that generally occurs over just a year or a few years. As shown  
17 in the following graphs, the decline in the risk premiums is persistent and  
18 undeniable.



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An examination of the above graphs confirms that a risk premium over 30 year treasuries in the 3 to 4% range is appropriate. For my equity cost computations, I used the conservatively high estimate of 4.0% as the risk premium appropriate to add to U.S. treasuries when determining the cost of equity for an industrial company of average risk.

1 **Q. WHY HAVE YOU CHOSEN 30 YEARS TO SHOW THE DOWNTREND**  
2 **IN THE RISK PREMIUM RATHER THAN A SHORTER TIME**  
3 **PERIOD SUCH AS 10 YEARS?**

4 A. 10 years is far too short of a time period to be able to observe the actual risk  
5 premium based upon realized historic returns. The reason that realized returns  
6 over a short time are not helpful at quantifying the risk premium is as follows.  
7 If the equity risk premium declines, this means by definition that equity investors  
8 are willing to settle for a lower risk premium component of the total return they  
9 are demanding. If they are willing to settle for a lower return and if other things  
10 remain equal, this means that investors are willing to pay a higher stock price for  
11 the same future expected cash flow. What this means is that the initial reaction  
12 to a lowering of the equity risk premium is for the stock price to rise. A rise in  
13 the stock price results in a higher historic earned return at the same time the  
14 higher stock price means the investor would expect a lower future return.  
15 Unless enough years are used in the historic analysis to diminish the misleading  
16 impact of the initial response to a reduction in the risk premium, the historic  
17 earned returns will not be helpful. I am especially encouraged by the relative  
18 consistency of the trend in the lowering of the risk premium as shown in the 30-  
19 year data. This reinforces the likelihood that the risk premium has declined as  
20 Federal Reserve Chairman Greenspan and many others have observed.

21

22 **Q. THE LAST DATA POINT IN THE 30-YEAR MOVING AVERAGE**  
23 **GRAPH YOU HAVE PROVIDED SHOWS AN INDICATION OF AN**  
24 **UPTICK IN THE INDICATED RISK PREMIUM IN THE LAST DATA**  
25 **POINT. DOES THAT INDICATE TO YOU THAT THE RISK**  
26 **PREMIUM MIGHT BE SHOWING AN UPTREND?**



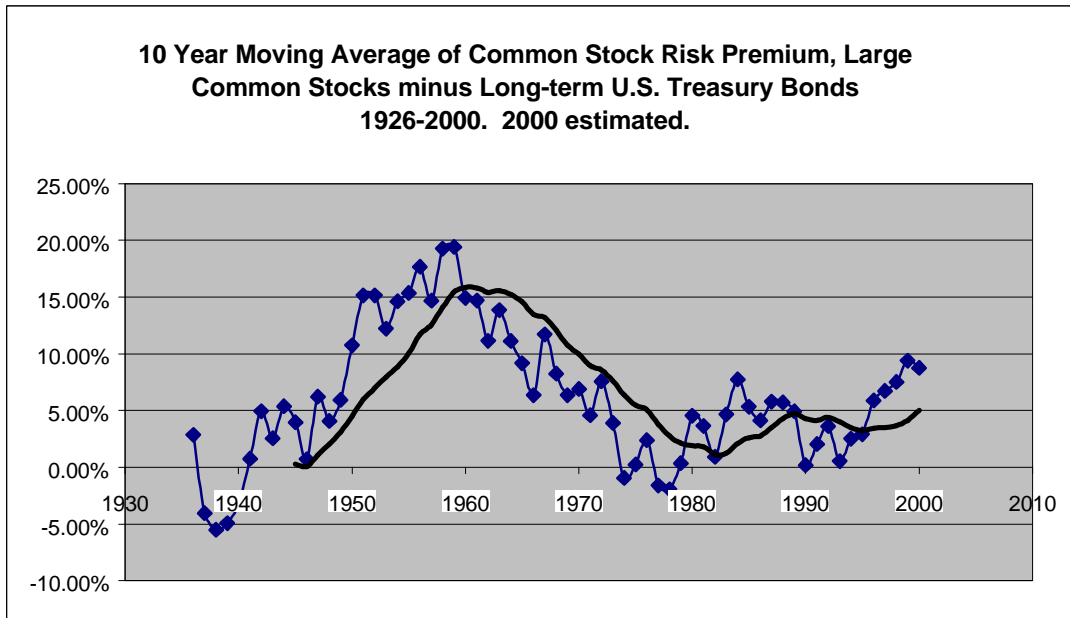
1 A. No. The uptick merely represents the inclusion of 1999 results and the  
2 exclusion of 1969 results from the 30 year moving average. This happened  
3 because we now know that 1999 was the extreme “bubble” year for common  
4 stock prices in the U.S. The data source I relied upon to create the graph only  
5 contained historic return data through 1999, so I cannot yet provide a precise  
6 update to include data through 2000. However, it is now known that during  
7 2000, the total return on bonds substantially exceeded the total return on  
8 common stocks enough so that the actual risk premium earned in 2000 by  
9 common stocks over bonds was negative by at least 15%.<sup>7</sup> Based upon this  
10 conservatively low estimate of a 15% NEGATIVE earned risk premium in  
11 2000, an update of the above graphs will show that the 30-year moving average  
12 of the risk premium will decline towards the range established from the 30-year  
13 average of the prior years.

14  
15 **Q. RECOGNIZING THAT YOU HAVE RECOMMENDED USING A 30-**  
16 **YEAR MOVING AVERAGE OF THE RISK PREMIUM RATHER**  
17 **THAN 10-YEARS, WHAT DOES THE 10-YEAR MOVING AVERAGE**  
18 **RISK PREMIUM DATA LOOK LIKE?**

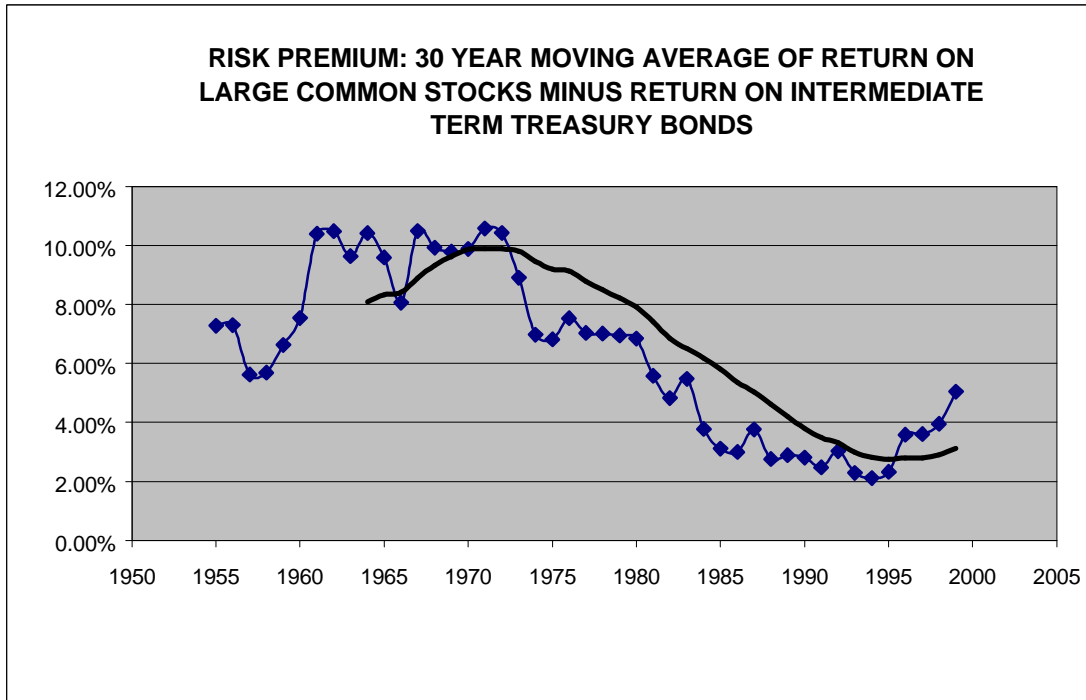
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<sup>7</sup> During 2000, the S&P 500 declined by about 9%. The dividend yield on the S&P 500 is less than 2%, therefore the total return on the S&P 500 for 2000 was a loss of at least 7%. On the other hand, long term interest rates declined by about 100 basis points (1%) during 2000, meaning that the total return on long-term bonds (interest income plus capital appreciation) was substantial. Since the interest yield alone earned by a long-term treasury investor was 6.5%, the total return on the long-term bond must have been more than 8%, meaning that the risk premium earned by common stocks was at least 15% LESS than the return earned by an investor in long-term treasury bonds.

1 A. The following graph is the historic actual earned risk premium difference  
2 between common stock and long-term U.S. treasury bonds. Also included in  
3 the same graph is a trendline. The trendline was added by the standard  
4 “trendline” function built into the Microsoft Excel spreadsheet. For comparison  
5 purposes, I have also repeated the 30-year data also with the addition of the  
6 “trendline”. The “trendline” data on the following graphs is the line that is not  
7 interrupted with points for the actual annual data.



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Note that the 10-year moving average data still shows the downtrend in the risk premium albeit not as clearly as the 30-year data. A closer look at the 10-year moving average data shows that it is more subject to what are obviously misleading extremes than is the 30-year moving average data. For example, if one were to be literally relying upon 10-year data to quantify the risk premium, the erroneous conclusion of a negative risk premium would have been reached both in the late 1930's and again several times throughout the 1970's. At the other extreme, 10-year moving average data was indicating what is an obviously incorrect conclusion that the risk premium was as high as 20% in the late 1950's.

The extremes in the 30-year moving average risk premium data are more realistic. The 30-year data shows the risk premium never going below about 2.5% and never going above 11%. While I do not believe that the risk premium ever actually got as low as 2.5% or as high as 11%, the more realistic nature of

1 the extremes in the 30-year moving average data makes its analysis more  
2 reliable.

3  
4 **Q. ARE THERE REASONS WHY THE RISK PREMIUM HAS BEEN ON**  
5 **A MULTI-DECADE DECLINE THAT IS APPARENT IN THE 10- AND**  
6 **30-YEAR MOVING AVERAGE DATA?**

7 A. Yes. One important reason is a lowering of the U.S. capital gains income tax  
8 rate. Investors are concerned about the total after-tax return earned. The  
9 majority of the return earned by an investor on a long-term bond (and in many  
10 cases all of the return earned by a long-term bond investor) is the interest  
11 income. Interest income is fully taxed at regular income tax rates. This is in  
12 contrast to an investor in common stocks. An investor in the average large  
13 common stock has received the majority of their total return in the form of  
14 stock price, or capital appreciation. Capital appreciation is not taxed at all until  
15 the stock is sold. Then, it is taxed at the long-term capital gains rate if the stock  
16 as been owned long enough to be eligible for such treatment. Currently, long-  
17 term capital gains are subject to a federal income tax of no more than 20%.  
18 This is a considerably lower rate on long-term capital gains than prevailed in  
19 prior decades.

20 Another important reason why the risk premium demanded by  
21 common stock investors versus bond investors has declined is because enough  
22 years have now passed since the Great Depression that a greater proportion of  
23 investors are more comfortable owning common stocks than was the case when  
24 the memory of the Great Depression was forefront in the minds of most  
25 investors.

26 Yet another factor is the proliferation of mutual funds. While it is  
27 debatable whether the popularity of mutual funds is proof that the risk premium

1 has declined (because more investors are comfortable investing in common  
2 stock) or is the reason that the risk premium declined (because mutual fund  
3 marketing has increased the availability of investment funds for equity), it is  
4 nevertheless a relevant factor.

5

6 Q. WHAT COST OF EQUITY IS INDICATED BY THE IMPLEMENTATION  
7 OF THE RISK PREMIUM/CAPM METHOD IN THIS CASE?

8 A. As shown on [Schedule JAR 2](#), the cost of equity indicated by the risk  
9 premium/CAPM method was 111.01% back in 1992 and is now 8.94%.

10

1 **APPENDIX C: REASON FOR USING GEOMETRIC AVERAGE AS**  
2 **APPROACH TO MEASURE HISTORIC ACTUAL RETURNS.**

3

4

5 Q. WHAT IS THE PROPER MATHEMATICAL PROCEDURE TO MEASURE  
6 HISTORIC ACTUAL RETURNS EARNED BY INVESTORS?

7 A. The proper approach is to use the geometric average. As will be explained in  
8 detail later in this appendix, textbooks, the U.S. Securities and Exchange  
9 Commission (SEC), and Value Line have all recognized that the only proper way  
10 to measure long-term historic actual earned returns is to use the geometric mean.  
11 The arithmetic mean is specifically identified by several sources as a method that  
12 will specifically result in an answer that is upwardly biased.

13

14 Q. PLEASE EXPLAIN WHY YOU HAVE CONCLUDED IT IS IMPROPER TO  
15 DEVELOP A RISK PREMIUM BASED UPON HISTORIC ARITHMETIC  
16 RETURNS?

17 A. Arithmetic average returns overstate the actual returns received by investors. The  
18 more variable historic growth rates have been, the more her method exaggerates  
19 actual growth rates. Arithmetic average returns ignore the impact of compound  
20 interest. For example, if a company were to have a stock price of \$10.00 in the  
21 beginning of the first year of the measurement period and a \$5.00 stock price at  
22 the end of the first year, an arithmetic average approach would conclude that the  
23 return earned by the investor would be a loss of 50%  $[(\$5-\$10)/(\$10)]$ . If, in the

1 second year, the stock price returned to \$10.00, then the arithmetic average  
2 would compute a gain of 100% in the second year  $[(\$10-\$5)/(\$5)]$ . The  
3 arithmetic average approach would naively average the 50% loss in the first year  
4 with the 100% gain in the second year to arrive at the conclusion that the total  
5 return received by the investor over this two year period would be 25% per year  
6  $[(-50\% +100\%)/2 \text{ years}]$ . In other words, the arithmetic average approach is so  
7 inaccurate that it would conclude the average annual return over this two year  
8 period was 25% per year even though the stock price started at \$10.00 and  
9 ended at \$10.00. The geometric average would not make such an error. It  
10 would only consider the compound annual return from the beginning \$10.00 to  
11 the ending \$10.00, and correctly determine that the annual average of the total  
12 returns was not 25%, but was zero.

13 In order to protect investors from misleading data, the SEC requires mutual  
14 funds to report historic returns by using the geometric average only. The  
15 arithmetic average is not permitted. The geometric average, or SEC method, has  
16 the compelling advantage of providing a true representation of the performance  
17 that would have actually been achieved by an investor who made an investment  
18 at the beginning of a period and re-invested dividends at market prices prevailing  
19 at the time the dividends were paid.

20

21 Q.DOES THE FINANCIAL COMMUNITY COMPUTE HISTORIC ACTUAL  
22 ACHIEVED RETURNS BASED UPON ARITHMETIC MEANS OR  
23 GEOMETRIC MEANS?

1 A. As shown earlier in this testimony, the financial community (as represented by  
2 articles from *The Wall Street Journal* and from *Business Week*) refers to geometric  
3 averages when evaluating historic returns. Additionally, page 92 of the August 16,  
4 1999 issue of *Fortune* magazine refers to the return that is equal to the geometric  
5 mean from Ibbotson Associates as "...the oft-quoted calculation..." of historic  
6 actual returns on common stocks. The article does not even mention the number  
7 that is equal to the historic arithmetic return.

8

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

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

15 We use a geometric average of rates of return because  
16 arithmetic averages are biased by the measurement period. An  
17 arithmetic average estimates the rates of return by taking a simple  
18 average of the single period rates of return. Suppose you buy a share  
19 of a nondividend-paying stock for \$50. After one year the stock is  
20 worth \$100. After two years the stock falls to \$50 once again. The  
21 first period return is 100 percent; the second period return is -50  
22 percent. The arithmetic average return is 25 percent [(100 percent -  
23 50 percent)/2]. The geometric average is zero. (The geometric  
24 average is the compound rate of return that equates the beginning and  
25 ending value.) **We believe that the geometric average represents a**  
26 **better estimate of investors' expected returns over long periods of**  
27 **time.**

28

29 (Emphasis added)



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

4 The geometric mean is a geometric average of annual returns,  
5 whereas the arithmetic mean is an arithmetic average. For cumulative  
6 wealth changes over long sweeps of time, the geometric mean is the  
7 appropriate measure.

8  
9 The textbook *Investments* by Nancy L. Jacob and R. Richardson Pettit, Irwin,  
10 1988, puts it well when it says:

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

15 The average *annual* rate of wealth accumulation over the investment  
16 period, termed the **average annual geometric rate of return**, correctly  
17 measures the average annual accumulation to wealth when multiple periods  
18 are involved.

19 (Emphasis is contained in the original)  
20

21

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

24 A. Yes. On May 9, 1997, Value Line issued a report entitled “The Differences in  
25 Averaging”. This report was contained on pages 6844-6845 of the “Value Line  
26 Selection & Opinion” portion of its weekly mailings to subscribers. This report says  
27 that:

28

29 (t)he arithmetic average has an upward bias, though it is the simplest  
30 to calculate. The geometric average does not have any bias, and thus

1 is the best to use when compounding (over a number of years) is  
2 involved.  
3

4 The Value Line report then goes on to provide examples that show why the  
5 arithmetic average overstates the achieved returns while the geometric average  
6 produces the correct result.

7 Ibbotson Associates has also said that it is the geometric average that is "... the  
8 correct average to compare with a bond yield..."<sup>8</sup>.

9

10 Q. HAVE YOU COMPARED GRAPHICALLY THE CAPITAL APPRECIATION  
11 GROWTH RATE USING THE ARITHMETIC AVERAGE METHOD WITH  
12 THE CAPITAL APPRECIATION GROWTH RATE THAT IS OBTAINED  
13 USING THE SEC METHOD?

14 A. Yes. In the following graph I show the actual movement of the S&P Utility index  
15 from 1928 through 1998. I also show how the index would have behaved on a  
16 year-by-year basis using the average growth obtained from the SEC method and  
17 using the arithmetic average historic growth rate methodology. The graph  
18 illustrates that arithmetic average calculation of historic actual returns deviates at an  
19 ever-increasing rate over time from the actual S&P Utility Index, overstating the  
20 total return from 1928-1998 by almost 400%. By contrast, the historic actual  
21 returns computed using the SEC method is a dramatically more reasonable track of

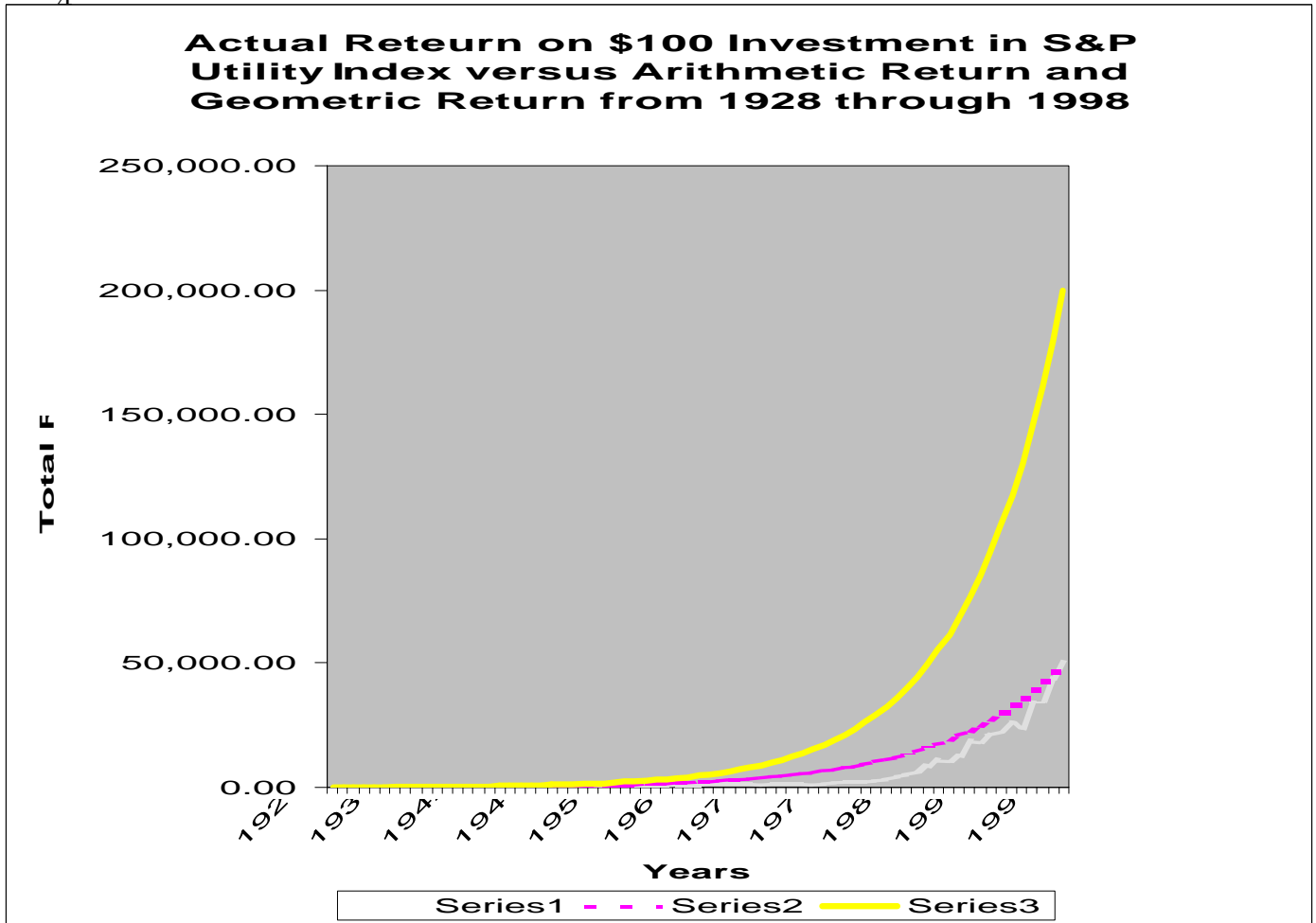
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<sup>8</sup> Page 75 of Stocks, Bonds, Bills, and Inflation 1986 Yearbook.

- 1 the growth of the S&P utility over time and thus is a better measure of historic
- 2 actual return rates realized by investors.
- 3

1 In the following table, Series 1 is the actual return on the S&P Utilities Index, Series  
2 2 is the geometric return on the S&P Utilities Index and Series 3 is the arithmetic  
3 return.

4



1           In the above chart, the top line shows that if \$100 had been invested in public  
2 utility common stocks in 1928 through 1998 and had earned the arithmetic return, the  
3 \$100 would have grown to about \$200,000. The lower irregular line shows what  
4 actually would have happened to a real \$100 investment if it had been invested in  
5 public utility common stocks. As shown on the graph, the \$100 investment would  
6 have actually grown to about \$50,000. While the increase from \$100 to \$50,000 is a  
7 very sizeable return, it is far less than the \$200,000 return that would have been  
8 achieved if the arithmetic return methodology had been achieved. The smooth line  
9 that ends at the same place as the actual return line is the ongoing value of \$100  
10 invested in 1928 that grew at the geometric return rate. Note that the \$100 invested  
11 at the geometric return rate is, by 1998, exactly equal to the actual return. Therefore,  
12 the geometric return accurately measures the actual return that was achieved from  
13 1928 through 1998, but the arithmetic average return exaggerates the actual return by  
14 3 times.

15

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

19 A. From 1928 to 1998, the arithmetic average method produced an indicated risk  
20 premium that was about 1.90% higher for public utility stocks versus public utility  
21 bonds than the risk premium indicated by using the SEC, or geometric average  
22 method. The arithmetic median method produced a 1.85% higher risk premium than  
23 is indicated by using the SEC, or geometric average method.

1

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

3 A. No. As I have previously stated, Federal Reserve Chairman Alan Greenspan has  
4 noted that risk premiums have declined over the last ten years.

5