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RECORDS AND  
REPORTING

September 2, 1998

Mrs. Blanca S. Bayó  
Director, Division of Records and Reporting  
Florida Public Service Commission  
2540 Shumard Oak Boulevard  
Tallahassee, FL 32399-0850

Re: Docket No. 980696-TP

Dear Ms. Bayó:

Enclosed is an original and fifteen copies of BellSouth Telecommunications, Inc.'s Rebuttal Testimony of Dr. Randall S. Billingsley, Dr. Robert M. Bowman, D. Daonne Caldwell, G. David Cunningham, Dr. Kevin Duffy-Deno, Georgetown Consulting Group, Peter F. Martin and Dr. William E. Taylor, which we ask that you file in the captioned matter.

A copy of this letter is enclosed. Please mark it to indicate that the original was filed and return the copy to me. Copies have been served to the parties shown on the attached Certificate of Service.

Sincerely,

*J. Phillip Carver*  
J. Phillip Carver (ps)

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(+) Protective Agreements

1 BELL SOUTH TELECOMMUNICATIONS INC. AND SPRINT -FLORIDA INC.

2 BEFORE THE

3 FLORIDA PUBLIC SERVICE COMMISSION

4 DOCKET NO. 980696-TP

5 REBUTTAL TESTIMONY OF

6 DR. RANDALL S. BILLINGSLEY

7 SEPTEMBER 2, 1998

8  
9 I. INTRODUCTION

10  
11 Q. Please state your name, occupation, and business address.

12  
13 A. My name is Randall S. Billingsley. I am a finance professor at Virginia Polytechnic Institute  
14 and State University. I also act as a financial consultant in the areas of cost of capital analysis,  
15 financial security analysis, and valuation. My business address is: Department of Finance,  
16 Pamplin College of Business, Virginia Polytechnic Institute and State University, Blacksburg,  
17 Virginia 24061-0221.

18  
19 This rebuttal testimony presents my independent professional opinions and is not presented by  
20 me as a representative of Virginia Polytechnic Institute and State University.

21  
22 Q. Have you previously submitted testimony in this proceeding on behalf of BellSouth  
23 Telecommunications Corporation (BST) and Sprint-Florida, Incorporated (Sprint-FL)?

24  
25 A. Yes.

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Q. Have you prepared exhibits to accompany this testimony?

A. Yes, my testimony and 12 exhibits were prepared by me or under my direction and supervision.

**II. PURPOSE OF REBUTTAL TESTIMONY AND SUMMARY OF CONCLUSIONS**

**A. PURPOSE OF REBUTTAL TESTIMONY**

Q. What is the purpose of your testimony in this proceeding?

A. My purpose is to rebut Mr. John I. Hirshleifer's direct testimony on behalf of AT&T Communications of the Southern States, Inc. (AT&T) and MCI Telecommunications Corporation (MCI). He erroneously estimates the cost of equity capital for BST to be only 9.35% to 9.96% and BST's overall average cost of capital to be in the range of only 7.94% to 9.05%. Mr. Hirshleifer also incorrectly estimates the cost of equity capital for Sprint-FL (characterized as Central Telephone and United Telephone, which merged together to form Sprint-Florida on December 31, 1996) to be only 9.74% and Sprint-FL's overall average cost of capital to be in the range of only 7.97% to 9.12%. In rebutting Mr. Hirshleifer's testimony I also rebut the cost of capital assumptions made in the testimony of Mr. Don J. Wood, filing on behalf of MCI and AT&T in this proceeding. Mr. Wood presents Release 5.0a of the HAI Model sponsored by AT&T and MCI in an effort to determine the forward-looking economic cost of providing basic local telecommunications service in Florida. In so doing, he indicates

1 that "[t]he Model has been run using the proposed intrastate cost of capital described in the  
2 testimony of John Hirschleifer" (Direct Testimony, p. 16, lines 4-5). Since my rebuttal shows  
3 that Mr. Hirschleifer significantly underestimates the capital costs for both BST and Sprint-FL,  
4 Mr. Wood's cost analysis is biased due to his reliance on Mr. Hirschleifer's incorrect cost of  
5 capital estimates.

6  
7 I also update my direct testimony that was submitted to the Florida Public Service Commission  
8 (Commission) on August 3, 1998 in this proceeding. Thus, I determine the reasonableness of  
9 the use of an overall cost of capital of 11.25% in the cost studies of BST and Sprint-FL and  
10 estimate the companies' forward-looking costs of capital in light of updated capital market and  
11 company data. This provides evidence useful in preparing universal service fund cost studies in  
12 the state of Florida.  
13

14  
15  
16 ***B. SUMMARY OF REBUTTAL OF MR. JOHN I. HIRSHLEIFER'S***

17  
18 **TESTIMONY ON BEHALF OF AT&T AND MCI**

19  
20 Q. What issues does your rebuttal focus on in Mr. Hirschleifer's direct testimony concerning capital  
21 costs of BST and Sprint-FL?

22  
23 A. My rebuttal explains the errors and inconsistencies in Mr. Hirschleifer's discounted cash flow  
24 (DCF) and capital asset pricing model (CAPM) analyses of BST and Sprint-FL's costs of  
25



1 equity capital, his cost of debt estimation, his recommended capital structure, and his  
2 misunderstanding of the nature and significance of the riskiness of investing in the  
3 telecommunications industry. His errors in estimating the costs of equity for BST and Sprint-FL  
4 using the DCF approach include: 1) use of a highly subjective three-stage model that is not  
5 representative of the investor's perspective; 2) use of growth rate forecasts that do not reflect  
6 consensus investment community expectations; 3) inappropriate and unsupported reliance on  
7 BellSouth, the other regional Bell holding companies (RBHCs), and selected independent  
8 telephone companies as comparable in risk to BST and Sprint-FL; 4) failure to adjust for  
9 flotation costs, and 5) failure to use the appropriate form of the DCF model that recognizes the  
10 quarterly payment of dividends.  
11

12  
13 Mr. Hirshleifer's CAPM errors in calculating the costs of equity for BST and Sprint-FL  
14 include: 1) significant underestimation of the equity risk premium in part due to the use of his  
15 flawed three-stage model, and 2) arbitrary exclusion of all members of the Standard and Poor's  
16 Composite 500 Index (S&P 500) from capital cost analysis that do not have a dividend yield of  
17 at least 2%. These errors explain why his CAPM estimates of the costs of equity for BST and  
18 Sprint-FL are so seriously underestimated.  
19

20  
21 My rebuttal shows that Mr. Hirshleifer's cost of debt analyses are flawed by his reliance on  
22 dated market information from December of 1997. He also incorrectly includes debt in his  
23 analyses that was not issued to finance long-term telephone network assets and that was issued  
24 by the parent holding companies of BST and Sprint-FL. Moreover, Mr. Hirshleifer places too  
25

1 much reliance on book values in determining his recommended capital structure. Finally, I show  
2 that Mr. Hirshleifer's views on the risks that are relevant to assessing capital costs in the  
3 telecommunications industry are confused and inconsistent. In the same vein, I show that his  
4 argument that the business of leasing network elements is of relatively low risk is unsupported.  
5

6 **C. SUMMARY OF UPDATED BST AND SPRINT-FL COST OF CAPITAL**  
7 **ANALYSES**  
8  
9

10 Q. Please describe the approaches that you use to update your estimates of the costs of equity  
11 capital for BST and Sprint-FL and summarize your conclusions.  
12

13 A. I use the same approaches that were used in my previously filed direct testimony in this  
14 proceeding. The updated cost of equity for BST is in the range of 14.45% to 14.46% using the  
15 comparable firm group DCF model approach. Under the same approach, the updated cost of  
16 equity for Sprint-FL is in the range of 14.43% to 14.53%. The CAPM approach indicates that  
17 BST's updated cost of equity capital is in the range of 14.20% to 14.40% and that Sprint-FL's  
18 updated cost of equity is in the range of 14.30 to 14.50%. The risk premium approach indicates  
19 that the expected return on the overall equity market, as measured by the S&P 500, is currently  
20 between 13.79% and 14.86%. From these updated analyses, I conclude that the current cost of  
21 equity capital for BST is within the range of 14.20% to 14.46% and that the current cost of  
22 equity for Sprint-FL is within the range of 14.30% to 14.53%.  
23  
24  
25

1 Q. Please describe how you evaluate the reasonableness of using an overall cost of capital of  
2 11.25% in the cost studies of BST and Sprint-FL using updated data and summarize your  
3 findings.

4  
5 A. I use the same approach as that in my previously filed direct testimony in this proceeding. Two  
6 indirect tests of the reasonableness of each company's use of an 11.25% overall cost of capital  
7 are performed. A direct test of reasonableness is also used to evaluate this rate. The first indirect  
8 test uses each company's reported book value capital structure and embedded cost of debt as of  
9 June 30, 1998. BST's reported capital structure is 56.44% equity and 43.56% debt and its  
10 embedded cost of debt is 6.39%. Sprint-FL's reported book value capital structure is 60.05%  
11 equity and 39.95% debt and its embedded cost of debt is 7.13%. An overall cost of capital of  
12 11.25% using these parameters implies a cost of equity of 15.00% for BST and 13.99% for  
13 Sprint-FL. The second test uses an equity ratio for BST of 60%, an associated debt ratio of  
14 40%, and a current forward-looking cost of debt of 6.60%. The second test for Sprint-FL uses  
15 an equity ratio of 59.58%, a debt ratio of 40.42%, and uses Sprint-FL's forward-looking cost of  
16 debt of 7.02%. An overall cost of capital of 11.25% implies a cost of equity of 14.35% for BST  
17 and 14.12% for Sprint-FL. These two indirect tests logically imply costs of equity that are  
18 within or only about 50 basis points higher than my estimated range for BST's cost of equity  
19 capital of 14.20% to 14.46% and that are lower than my estimated range for Sprint-FL's cost of  
20 equity of 14.30% to 14.53%.

21 As a direct test of reasonableness, I rely on my updated forward-looking equity and debt  
22 costs along with the market value-based capital structures of each company to estimate an  
23 overall cost of capital for BST in the range of 13.14% to 13.36% and an overall cost of capital  
24 for Sprint-FL in the range of 13.10% to 13.29%. This indicates that the use of an 11.25% rate in  
25

1 its cost studies understates BST's forward-looking overall cost of capital by 189 to 211 basis  
2 points and underestimates Sprint-FL's forward-looking overall cost of capital by 185 to 204  
3 basis points. Therefore, the use of an 11.25% cost of capital in the cost studies of BST and  
4 Sprint-FL is reasonable and quite conservative in light of updated capital market data.  
5  
6

7 **III. REBUTTAL OF MR. HIRSHLEIFER'S DIRECT TESTIMONY ON**  
8

9 ***BEHALF OF AT&T AND MCI***

10 **A. ERRORS IN DCF COST OF EQUITY ANALYSIS**

11 **1. FAILURE TO REFLECT INVESTORS' PERSPECTIVE**  
12

13  
14 Q. Is Mr. Hirshleifer's use of a three-stage DCF model representative of investors' valuation  
15 perspective and is it a common approach in regulatory proceedings?  
16

17 A. No, Mr. Hirshleifer's three-stage model is complex, subjective, and uses growth rate forecasts  
18 that reflect his own opinions rather than those of the investment community. Due to these  
19 limitations, three-stage approaches are not commonly used in regulatory proceedings. Mr.  
20 Hirshleifer's results do not provide insight into the current or forward-looking equity capital  
21 costs of BST or Sprint-FL.  
22

23  
24 Mr. Hirshleifer's three-stage approach makes use of firm-specific investment community  
25 consensus growth rate forecasts, as measured by Institutional Brokers Estimation Service

1 (IBES), for only the first stage (five years) of his analysis. After this five-year period, he  
2 assumes a second stage of 15 years during which the growth rate falls from the initial IBES  
3 growth rate to a projected growth rate for the overall U.S. economy by the end of the 20th year.  
4 After that time, Mr. Hirshleifer assumes that the growth rate remains at that projected rate for  
5 the economy indefinitely (Direct Testimony, p. 24, line 7 - p. 28, line 19).  
6

7 Mr. Hirshleifer's analysis misses the mark in the current proceeding. The goal here is to  
8 estimate BST and Sprint-FL's costs of meeting their equity investors' return requirements in  
9 market terms. Thus, the analysis should reflect the investment analysis process and expectations  
10 of investors. Mr. Hirshleifer's analysis of the costs of equity for BST and Sprint-FL departs  
11 from investors' perspective by substituting his expectations for those of investors for two out of  
12 the three stages in his analysis.  
13

14  
15 Q. How relevant is Mr. Hirshleifer's criticism of the constant growth DCF model on the basis that  
16 telecommunications firms' projected growth rates are not sustainable "into perpetuity?"  
17

18  
19 A. Mr. Hirshleifer's criticism of the constant growth version of the DCF model is practically  
20 irrelevant and misguided in the current context. He observes that:

21 ... modern telephone companies are composed of a variety of businesses, some of which -  
22 such as cellular - are expected to grow at rates of 30 percent or more in the short run. Such  
23 high growth rates are clearly not sustainable into perpetuity, so that the simple constant  
24 growth model cannot be applied ... (Direct Testimony, p. 20, lines 22 - p. 21, line 3).  
25

1  
2 Mr. Hirshleifer's unsupported apparent concern is that "telephone companies are composed of a  
3 variety of businesses" that cannot be captured by a single growth rate. However, investors  
4 routinely price securities for firms composed of numerous business units by evaluating the net  
5 contribution of each unit to the overall growth of the firm.  
6

7  
8 Mr. Hirshleifer's rejection of the constant growth DCF model because he assumes that  
9 telephone company growth rates are "not sustainable into perpetuity" does not adequately relate  
10 valuation theory to practice in light of realistic investor concerns. While the constant growth  
11 DCF model does theoretically assume a constant growth rate for perpetuity, there is no evidence  
12 that investors practically consider perpetuity in their valuation decisions. Simply put, the  
13 present value of the cash flows projected from an investment beyond the foreseeable future is so  
14 small that it has little practical effect on investors' decisions. While it is very difficult to  
15 forecast the distant future, it is also not practically relevant to attempt to do so in a present value  
16 sense.  
17

18  
19 Mr. Hirshleifer's theoretical criticism of the constant growth DCF model is irrelevant. His  
20 decision to replace it with a three-stage DCF model only introduces a more subjective,  
21 complicated approach that substitutes his growth forecasts for those of the investors who are  
22 actually putting money into stocks.  
23  
24  
25

1 Q. What support does Mr. Hirshleifer offer for limiting the long-term growth of  
2 telecommunications firms to the growth rate of the U.S. economy?  
3

4 A. He offers only his opinion that "[a] perpetual growth rate that exceeded the growth rate of the  
5 economy would illogically imply that eventually the whole economy would be comprised of  
6 nothing but telephone companies" (Direct Testimony, p. 24, lines 13-15). Mr. Hirshleifer's  
7 observation has no practical relevance in assessing the usefulness of the constant growth DCF  
8 model in the current proceeding. Investors could easily believe that telecommunications firms'  
9 consensus growth rate projections are sustainable beyond the next five years to the foreseeable  
10 future but less than forever, which is not a realistic emphasis of investors in their valuation  
11 efforts anyway.  
12

13  
14 Q. Would you provide an example that shows how unrealistic Mr. Hirshleifer's constraint on the  
15 long-term growth rate is?  
16

17  
18 A. Yes. Consider that the IBES and Zacks current (August 1998) consensus five-year growth rate  
19 forecasts for MCI are 11.85% and 12.25%, respectively. Mr. Hirshleifer would presumably  
20 argue that these rates are unsustainable beyond five years and that the use of either rate for a  
21 longer period of time would imply that MCI would eventually dominate the U.S. economy.  
22 However, according to Value Line's most recent report on MCI (July 10, 1998), the company's  
23 average earnings growth rate over the past ten years has been 25%, which is more than twice the  
24 Zacks or IBES consensus growth rate for twice the time period.  
25

1  
2 From a practical perspective, I believe that most investors would relate these projections to the  
3 past performance of MCI and thereby use them to assess MCI's foreseeable future. It does not  
4 seem reasonable that such investors would be tempted to conclude that "eventually the whole  
5 economy would be comprised of nothing but telephone companies" or MCI in particular.  
6 Further, Mr. Hirshleifer offers no evidence to support his use of a second stage that is 15 years  
7 long. Why not 10, 25, or 30 years? His three-stage model is unnecessarily subjective,  
8 unrepresentative of investors' growth rate expectations, contrary to investors' realistic concerns,  
9 and particularly useless in the dynamic telecommunications industry. While Mr. Hirshleifer's  
10 model is admittedly inventive, it is not informative concerning the realistic, market-based  
11 capital costs of BST or Sprint-FL.  
12

13  
14 Q. In attempting to justify his use of a three-stage rather than a constant growth version of the DCF  
15 model, Mr. Hirshleifer cites a book by Professor Aswath Damodaran as a key reference (see  
16 pages 22-23 and footnotes 13 and 15 of his testimony). Is Mr. Hirshleifer's decision to use a  
17 three-stage version of the model consistent with Damodaran's stated conditions under which the  
18 model is appropriate?  
19

20  
21 A. No, Mr. Hirshleifer's use of the three-stage model is inconsistent with the circumstances  
22 described for the best use of the model. Damodaran indicates that "... this may be the more  
23 appropriate model to use for a firm whose earnings are growing at very high rates ..."  
24  
25



1 (Damodaran On Valuation, John Wiley & Sons, 1994, p. 119). Damodaran considers a  
2 growth rate to be "very high" if it exceeds 25%.

3  
4 Attachment JH-4 shows that none of the companies to which Mr. Hirshleifer applies his three-  
5 stage DCF model have growth rates over 25%. Thus, his decision to use this form of the model  
6 is inconsistent with the conditions for its appropriate use described in the Damodaran reference  
7 cited in his testimony.  
8

9  
10 Q. Does this reference cited by Mr. Hirshleifer discuss any limitations in using the three-stage  
11 version of the DCF model?

12  
13 A. Yes. In comparing the three-stage model to the other versions of the DCF model, Damodaran  
14 observes that:

15 ... it requires a much larger number of inputs: year-specific payout ratios, growth rates,  
16 and betas. For firms in which there is substantial noise in the estimation process, the  
17 errors in these inputs can overwhelm any benefits that accrue from the additional  
18 flexibility in the model (Damodaran on Valuation, John Wiley & Sons, 1994, pp. 118  
19 -119).  
20

21  
22 Damodaran's concern over the effect of "substantial noise" is particularly relevant to Mr.  
23 Hirshleifer's analysis. He applies a three-stage DCF model to the RBHCs, GTE, and selected  
24 independent telephone holding companies. The dramatic effects of deregulation, increasing  
25

1 competition, the implementation of the Telecommunications Act of 1996, and industry  
2 consolidation certainly introduce much noise into the estimation of such firms' equity costs.  
3 Thus, Mr. Hirshleifer's DCF model is particularly inappropriate for estimating the costs of  
4 equity of BST and Sprint-FL. My methodological approach is more reliable because it uses a  
5 group of firms that is demonstrably comparable in risk to BST and a group of firms that is  
6 demonstrably comparable in risk to Sprint-FL. These two groups of firms, which capture  
7 comparable firms across industry lines, are not seriously affected by such "noise." Further, my  
8 approach does not require the highly subjective inputs that Mr. Hirshleifer's three-stage model  
9 does.  
10

11  
12 Q. Mr. Hirshleifer alleges that his version of the three-stage DCF model is different from that  
13 presented by Professor Damodaran but does not explain the nature of the difference or why it is  
14 supposedly significant. Would you explain Mr. Hirshleifer's statement and how it relates to the  
15 sections of Professor Damodaran's book concerning the three-stage model?  
16

17  
18 A. Yes. Mr. Hirshleifer's vague statement is:

19 It should be noted that what he [Damodaran] calls the "three-stage model" is different  
20 from the model I employ and is not comparable. Damodaran's "H model" is more  
21 comparable to the model that I use (Direct Testimony, p. 58, footnote 15).

22 As noted above, Mr. Hirshleifer describes his three-stage model as follows:

23 The first stage lasts five years ... The second stage is assumed to last 15 years. During  
24 this stage the growth rate falls from the high level of the first five years to the growth  
25

1 rate of the U.S. economy by the end of year 20. From the twentieth year onward the  
2 growth rate is set equal to the growth rate for the economy because rates greater than  
3 that cannot be sustained into perpetuity (Direct Testimony, p. 24, lines 7-15).

4 Professor Damodaran's description of the three-stage model shows that he and Mr. Hirshleifer  
5 use the same basic approach:

6 The three-stage dividend-discount model combines the features of the two-stage model  
7 and the H model. It allows for an initial period of high growth, a transitional period in  
8 which growth declines, and a final stable-growth phase (Damodaran on Valuation,  
9 John Wiley & Sons, 1994, pp. 117).

11 For further perspective, consider Professor Damodaran's description of the H model:

12 The model is based on the assumption that the earnings growth rate starts at a high  
13 initial rate ( $g_a$ ) and declines linearly over the extraordinary-growth period (which is  
14 assumed to last  $2H$  periods) to a stable growth rate ( $g_s$ ) (Damodaran on Valuation,  
15 John Wiley & Sons, 1994, pp. 115).

17  
18 Q. Does there appear to be any significant difference between the three-stage DCF model used by  
19 Mr. Hirshleifer and the three-stage model discussed by Professor Damodaran?

20  
21 A. No. Mr. Hirshleifer apparently does not realize that the three-stage model discussed by  
22 Professor Damodaran closely fits his described model. It appears that Mr. Hirshleifer does not  
23 understand that his model is essentially an extension of the multi-stage H model to which he  
24 refers. Thus, Mr. Hirshleifer's statement that his model is "not comparable" to Professor  
25

1 Damodaran's three-stage model is suspect and reflects a fundamental misunderstanding of the  
2 methodology that he uses to estimate the costs of equity for BST and Sprint-FL. This draws into  
3 question the overall reliability of his cost of capital analyses of BST and Sprint-FL.  
4

5 **2. INCORRECT RELIANCE ON BELLSOUTH, THE OTHER RBHCS,**  
6 **AND SELECTED INDEPENDENT TELEPHONE COMPANIES AS**  
7 **COMPARABLE IN RISK TO BST AND SPRINT-FL**  
8

9  
10 Q. What justification does Mr. Hirshleifer give for applying the DCF and the CAPM approaches to  
11 BellSouth, the other RBHCs, and selected independent telephone companies as firms  
12 comparable in risk to BST and Sprint-FL?  
13

14 A. Mr. Hirshleifer offers no justification for the use of the supposedly comparable firms listed in  
15 Attachment JH-2. He only observes in passing that they are "selected as likely comparables"  
16 (Direct Testimony, p. 26, lines 4-6) and that they "... were derived from the list of telephone  
17 operating companies in Standard and Poor's Industry Survey" (Direct Testimony, p. 15, lines 3-  
18 4). Thus, Mr. Hirshleifer assumes that BST is comparable in risk to BellSouth, the other  
19 RBHCs, and selected independent telephone companies. He does not demonstrate  
20 comparability. Similarly, for Sprint-FL (referred to as Centel and United) he "... assumes that  
21 the cost of equity for the provision of universal service is approximated by the average cost of  
22 equity for the whole set of the telephone holding companies" (Direct Testimony, p. 16, lines 17-  
23  
24  
25

1 20). Mr. Hirshleifer conducts no systematic, empirical analysis using objective screening  
2 criteria to identify firms comparable in risk to BST or comparable in risk to Sprint-FL.  
3

4 In contrast to Mr. Hirshleifer, I identify comparable firms by measuring risk and statistically  
5 determining risk comparability. My analysis shows that neither the RBHCs, as a group, nor the  
6 independent telephone companies are comparable in risk to BST or to Sprint-FL.  
7

### 8 9 **3. FAILURE TO ADJUST FOR FLOTATION COSTS**

10  
11 Q. Do you agree with Mr. Hirshleifer's opinion that it is appropriate to ignore the impact of  
12 flotation costs in estimating the costs of equity capital for BST and Sprint-FL?  
13

14 A. No, I do not agree with his opinion. Mr. Hirshleifer attempts to justify ignoring flotation costs  
15 because the prices of the companies' stock "... has accounted for flotation costs already"  
16 (Direct Testimony, p. 54, lines 23-25). While his argument implicitly assumes that flotation  
17 costs materially affect equity costs, he presents no evidence that the market has made such an  
18 adjustment. Mr. Hirshleifer's failure to adjust for flotation costs biases his cost of equity  
19 estimates downward.  
20  
21

### 22 **4. FAILURE TO ADJUST FOR QUARTERLY DIVIDEND** 23 **PAYMENTS** 24 25

1 Q. Is Mr. Hirshleifer's use of the annual form of the DCF model consistent with the investor's  
2 perspective on valuing equity securities?

3  
4 A. No. Mr. Hirshleifer uses the annual form of the DCF model even though all of the members of  
5 his sample of supposedly comparable firms pay dividends on a quarterly basis. The annual form  
6 of the DCF model does not accurately portray the investor's perspective, and consequently,  
7 significantly underestimates the costs of equity capital of BST and Sprint-FL.  
8

9  
10 Consider the example of how the returns on an Individual Retirement Account (IRA) differ  
11 when compounded quarterly rather than annually. The opportunity to earn a return quarterly  
12 rather than annually has a significant effect on the value of an IRA to an investor. The same  
13 economic principle is at work when investors value the opportunity to receive dividends on a  
14 stock quarterly rather than annually.  
15

16  
17 Suppose that you invest \$2,000 in an IRA account today and expect to earn 8% per year. If your  
18 money earns the 8% compounded annually, you will have about \$13,697 before taxes in 25  
19 years. Alternatively, if your money earns the 8% compounded quarterly, you will have about  
20 \$14,489 before taxes in 25 years. Thus, your IRA will be worth about \$792 more if your returns  
21 are compounded quarterly rather than annually. This \$792 difference is present because you  
22 earn an effective rate of about 8.24% under quarterly compounding rather than just 8%  
23 annually. Obviously, investors would prefer to have \$792 more in 25 years and would  
24 consequently prefer that their 8% return be compounded quarterly rather than annually.  
25

1  
2 When Mr. Hirshleifer argues that it is unnecessary in cost of capital analysis to consider that  
3 dividends are received by investors quarterly, he essentially argues that investors are indifferent  
4 to whether dividends are paid annually or quarterly. Similarly, Mr. Hirshleifer essentially argues  
5 that the IRA investor in the above example would not care whether he or she could earn an extra  
6 \$792. Yet the common sense of the investor's perspective in both cases convincingly  
7 demonstrates that if quarterly compounding is not considered in cost of capital analysis, the  
8 implied rate of return is underestimated.  
9

10  
11 Q. Would you provide an everyday analogy that concretely shows how Mr. Hirshleifer's failure to  
12 adjust his cost of equity estimates in light of the quarterly payment of dividends is misguided?  
13

14 A. Yes. Consider whether Mr. Hirshleifer would likely prefer to be paid by AT&T and MCI for his  
15 cost of capital consulting work just once a year or at the completion of each case. While it  
16 would be inappropriate for me to speculate on his personal preferences, it is reasonable to  
17 believe that Mr. Hirshleifer might price the services that he provides to AT&T and MCI  
18 differently if he were paid only at the end of each year. This is because being paid only at the  
19 end of the year would adversely affect his ability to invest or otherwise use his earnings. By  
20 analogy, investors derive the market prices of stocks in light of their ability to reinvest  
21 dividends quarterly rather than just annually. Investors' implied return requirements  
22 consequently reflect the impact of quarterly rather than annual dividend payments in a manner  
23  
24  
25

1 that is analogous to how Mr. Hirshleifer might prefer to be paid more frequently than annually  
2 for the services that he provides to AT&T and MCI.

3  
4 **B. ERRORS IN CAPM COST OF EQUITY ANALYSIS**

5  
6 Q. Is Mr. Hirshleifer's estimate of the equity market risk premium using the three-stage DCF  
7 model economically meaningful?

8  
9  
10 A. No, it is not economically meaningful. Mr. Hirshleifer uses his flawed three-stage DCF model  
11 to estimate an expected return on the overall equity market, as measured using selected  
12 members of the S&P 500 index, of only 9.82% (see Attachment JH-6).

13  
14 Q. What effect does Mr. Hirshleifer's exclusion of all members of the S&P 500 not paying a  
15 dividend yield of at least 2% (p. 36, lines 11-13 of Mr. Hirshleifer's testimony) have on his  
16 estimated market return of only 9.82%?

17  
18  
19 A. Mr. Hirshleifer's arbitrary screening criterion biases downward his estimated expected return on  
20 the market and thereby causes all of his CAPM calculations to underestimate equity capital  
21 costs. This partially explains why his analysis underestimates the overall capital costs of BST  
22 and Sprint-FL as well.



1 Consider the type of firms that pay a dividend yield of less than 2%. Such firms typically pay  
2 lower dividend yields because they reinvest above-average amounts in their businesses. Thus,  
3 lower dividend yields are associated with higher growth companies that have higher equity  
4 capital costs. Mr. Hirshleifer's screening criterion consequently excludes those members of the  
5 S&P 500 likely to have the highest capital costs and thereby underestimates the expected  
6 returns composing the market proxy. His CAPM-based equity costs that use this biased measure  
7 of equity market expectations clearly produce unrealistically low capital cost estimates.  
8

### 9 10 C. ERRORS IN COST OF DEBT ESTIMATION

11  
12 Q. What mistakes does Mr. Hirshleifer make in estimating the costs of debt of BST and Sprint-FL?  
13

14 A. Mr. Hirshleifer fails to measure the cost of debt that is relevant to determining the forward-  
15 looking costs of BST and of Sprint-FL providing universal service in Florida. First, he  
16 inappropriately relies on the costs of debt issued by the parent holding companies of BST and  
17 Sprint-FL as well as the costs of debt issued by subsidiaries of those holding companies in cases  
18 where the proceeds have not been used to finance telephone network assets. Specifically, in  
19 Attachment JH-3a Mr. Hirshleifer inappropriately uses the costs of debt issued by BellSouth  
20 Corporation and BellSouth Capital Funding as proxies for BST's debt costs. Similarly, in  
21 Attachment JH-3c he inappropriately uses the costs of debt issued by Sprint Corporation and  
22 Centel Capital as proxies for Sprint-FL's debt costs. Second, Mr. Hirshleifer's cost of debt  
23 estimates for both BST and Sprint-FL rely on dated debt market information from December of  
24  
25

1 1997. Thus, Mr. Hirshleifer's cost of debt analysis is unreliable because it relies on  
2 inappropriate debt securities and uses historical debt market data that produces backward-  
3 looking estimates.

#### 4 5 **ERRORS IN RECOMMENDED CAPITAL STRUCTURE**

6  
7 Q. Do you agree with Mr. Hirshleifer's heavy reliance on book value capital structures?

8  
9  
10 A. No, I do not. Mr. Hirshleifer gives equal weight to book values and market values in  
11 producing his capital structure recommendations for BST and Sprint-FL. He relies on book  
12 value capital structures to determine the low end of his recommended cost of capital ranges,  
13 while market value capital structures produce the high end of his ranges. The use of market  
14 values is theoretically appropriate and consistent with establishing a forward-looking cost of  
15 capital for use in a universal service fund proceeding such as this one.

16  
17  
18 Market values deserve higher weight because they are dynamically determined in the  
19 marketplace by investors, while book values are the result of historical accounting practices.  
20 One-time accounting events that do not change market values can significantly alter book  
21 values. Examples of one-time events include restructuring charges, the adoption of SFAS 106  
22 for Other Post-Employment Benefits, and the discontinuance of regulatory accounting under  
23 SFAS 71. Additionally, the point in time at which a company issued stock in the past can  
24 influence backward-looking book values, while forward-looking market values are not  
25

1 affected.

2  
3 Over time, market values vary from book values as investors change the stock price in  
4 reaction to new information. If a new event or announcement significantly enhances or  
5 detracts from shareholder value, that change is immediately translated into a market value  
6 change, while there is likely to be no immediate change in book value. Mr. Hirshleifer's over-  
7 reliance on book values is unrepresentative of the investor's perspective and introduces yet  
8 another downward bias to his cost of capital estimates.

9  
10  
11 Mr. Hirshleifer's recommended capital structures for BST and Sprint-FL are also flawed by his  
12 inappropriate reliance on dated capital market information from December of 1997. Thus, as is  
13 the case in his cost of debt estimates for BST and Sprint-FL, Mr. Hirshleifer recommends  
14 backward- rather than forward-looking capital structures.

15  
16  
17 **E. MISUNDERSTANDING OF THE NATURE AND SIGNIFICANCE**  
18 **OF THE RISKINESS OF INVESTING IN THE**  
19 **TELECOMMUNICATIONS INDUSTRY**

20  
21 Q. Do you agree with Mr. Hirshleifer's observations about the supposedly low relative risk of  
22 "leasing" local exchange telephone network elements to retail providers and providing universal  
23 service?  
24  
25

1 A. No. Mr. Hirshleifer only offers his unsupported opinion that "[t]hese businesses should have  
2 relatively low risk compared to many of the risky business endeavors being pursued by the  
3 telephone holding companies" (Direct Testimony, p. 45, lines 17-19). However, he also  
4 acknowledges that "... there remains some risk that consumers, particularly business users, will  
5 bypass the network as other alternatives become available" (Direct Testimony, p. 51, lines 22-  
6 24). Mr. Hirshleifer consequently recognizes the significant risk of consumers and businesses  
7 bypassing the networks of BST or Sprint-FL but only offers his unsubstantiated opinion that  
8 this is a "low risk" endeavor. Once again Mr. Hirshleifer substitutes his opinion for that of  
9 investors in appraising capital costs.  
10

11  
12 Q. Why is leasing long-term telephone network assets particularly risky?  
13

14 A. The leasing of long-term assets can be quite risky, especially when leasing rates are regulated.  
15 In order for BST or Sprint-FL to earn reasonable returns on their network assets, they must  
16 obtain revenues over the leasing period that cover their costs and appropriate risk-adjusted  
17 profits. However, BST and Sprint-FL are partially dependent on regulators rather than solely on  
18 the market to obtain such returns. Mr. Hirshleifer obviously recognizes that regulators'  
19 decisions may well not be appealing to shareholders' when he notes:  
20

21       There is still the risk of regulation itself. The rate of return a network is allowed to earn  
22       depends on the outcome of proceedings such as this and remains somewhat uncertain  
23       (Direct Testimony, p. 51, lines 17-19).  
24  
25

1 Because such uncertainty implies risk to investors, Mr. Hirshleifer acknowledges that there is  
2 substantial risk in the leasing of BST's or Sprint-FL's network elements. This risk implies  
3 higher required rates of return and capital costs. However, Mr. Hirshleifer's comments on the  
4 supposedly low relative risk of network leasing are inconsistent with his recognition of high  
5 regulatory risk and the significant risk of consumer and business bypass of the local service  
6 networks of BST and Sprint-FL. Moreover, building and owning network facilities to lease to  
7 competitors is particularly risky when one considers that the leases tend to be short-term in  
8 nature. A competitor that builds up a sufficient number of customers can subsequently choose  
9 to build its own facilities, thus stranding the incumbent local exchange company's (ILEC's)  
10 facilities.  
11

12  
13 Q. How does technological change affect the risk of investing in long-term telephone network  
14 assets?  
15

16  
17 A. Network facilities reflect a given technology that often becomes obsolete quickly. BST and  
18 Sprint-FL must consistently invest to keep their network elements up to date and should have  
19 the flexibility to establish leasing rates accordingly. However, as noted above, they do not have  
20 this ability under current regulations. This risk of technological obsolescence makes leasing  
21 network elements risky. Thus, such obsolescence imposes costs and therefore risks. The leasing  
22 of BST's and Sprint-FL's network assets poses significant risks to their investors that put  
23 upward pressure on their costs of equity.  
24  
25

1 Q. Do you agree with Mr. Hirshleifer's views on the risks that are reflected in capital costs?

2  
3 A. No. Mr. Hirshleifer is incorrect and inconsistent in his testimony concerning the risks that affect  
4 capital costs. For example, he emphasizes that:

5 ... the risk that a company will lose customers to competition - such as a network  
6 leasing company or a local exchange company - is a diversifiable risk which does not  
7 increase the risk premium according to capital market theory (Direct Testimony, p. 30,  
8 lines 17-20).

9  
10 Yet, as noted above, in discussing what he presumably considers to be the relevant risks  
11 associated with the business of leasing unbundled network elements he notes that "... there  
12 remains some risk that consumers, particularly business users, will bypass the network as other  
13 alternatives become available" (Direct Testimony, p. 51, lines 22-24).

14  
15 On the one hand Mr. Hirshleifer argues that the risk of losing customers to competition should not  
16 affect capital costs and, on the other hand, he inconsistently asserts that the risk of bypass, which  
17 is just one way of losing customers, is relevant and thus affects capital costs.

18  
19  
20 Mr. Hirshleifer also inconsistently argues that:

21 In this case, each of the companies in question is not a diversified telephone holding  
22 company, but a company in the more specialized (and less risky) business of providing  
23 network elements and universal service (Direct Testimony, p. 56, line 14-16).

1 This observation is logically flawed and inconsistent. If we accept Mr. Hirshleifer's assumption  
2 that diversification reduces relevant or priced risk, then the fact that "each of the companies in  
3 question is not a diversified telephone holding company" could imply that each is riskier, not  
4 "less risky" than a diversified holding company. Mr. Hirshleifer's positions on relevant risk are  
5 confusing and inconsistent.

6  
7 Mr. Hirshleifer's view that greater risk of competition is not compensated in the cost of capital  
8 is not practically relevant. While this is strictly true in the pristine theoretical world of the  
9 CAPM, the practical realities of investing suggest otherwise. Indeed, as noted above, the FCC  
10 has stated that "... potential competition could increase the risks facing the incumbent LECs,  
11 and thus increase their cost of capital" (Notice of Proposed Rulemaking, Third Report and  
12 Order, and Notice of Inquiry, FCC 96-488, December 24, 1996, page 101, paragraph 228).  
13 Consequently, in contrast to Mr. Hirshleifer, the FCC views the enhanced risk posed by  
14 competition as a practical, significant influence on capital costs. While the CAPM provides  
15 useful insights into capital costs, it must be supplemented with other methods that recognize the  
16 full array of practical risks facing investors. Mr. Hirshleifer's expressed views on risk are  
17 incomplete and logically inconsistent.  
18  
19  
20

21 **F. SUMMARY OF REBUTTAL OF MR. HIRSHLEIFER'S COST OF**  
22 **CAPITAL ESTIMATES FOR BST AND SPRINT-FL**  
23  
24  
25

1 Q. Please summarize your evaluation of Mr. Hirshleifer's cost of equity estimates for BST and  
2 Sprint-FL.

3  
4 A. Mr. Hirshleifer incorrectly estimates BST's cost of equity to be between 9.35% and 9.96% and  
5 Sprint-FL's cost of equity to be 9.74% due to numerous errors in his applications of the DCF  
6 and CAPM approaches. His DCF model is flawed due to: 1) failure of his subjective three-  
7 stage model to reflect investors' perspective; 2) incorrect and unsupported reliance on  
8 BellSouth, the other RBHCs, and selected independent telephone companies as comparable in  
9 risk to BST and Sprint-FL; 3) failure to adjust for flotation costs; 4) failure to adjust for  
10 quarterly dividend payments, and 5) unrealistic underestimation of the risks of investing in  
11 telephone network assets in the new, highly competitive environment. Mr. Hirshleifer's CAPM  
12 cost of equity analyses for BST and Sprint-FL are also unreliable because they are based on his  
13 flawed three-stage DCF model.

14  
15  
16  
17 Q. Please summarize your assessment of Mr. Hirshleifer's cost of debt and capital structure  
18 estimates for BST and Sprint-FL.

19  
20 A. Mr. Hirshleifer incorrectly estimates BST's cost of debt as 6.65% and Sprint-FL's cost as  
21 6.63% using dated market information from December of 1997. He misestimated each firm's  
22 cost of debt at that time because he incorrectly relies on the costs of debt issued by the parent  
23 holding companies of BST and Sprint-FL. Further, he incorrectly includes debt issues in his  
24 analyses that were not issued to fund telephone network assets. My updated testimony shows  
25



1 that under current capital market conditions BST's forward-looking cost of debt is 6.60% and  
2 Sprint-FL's cost of debt is 6.95%. Mr. Hirshleifer's use of capital market data from December  
3 of 1997 makes his cost of debt estimates backward-looking.

4  
5 Mr. Hirshleifer inappropriately places significant weight on book value capital structures in  
6 determining his recommended cost of capital range, thus significantly underestimating the  
7 overall cost of capital. Market value capital structures, such as those shown in Billingsley  
8 Exhibit Nos. RSB-11 and RSB-12, are appropriate for use in this universal service fund  
9 proceeding. Further, Mr. Hirshleifer derives his recommended capital structures using historical  
10 information from December of 1997 that makes them backward-looking like his cost of debt  
11 estimates.  
12

13  
14 **IV. UPDATED DCF MODEL ESTIMATES OF EQUITY CAPITAL COSTS**  
15 **FOR BST AND SPRINT-FL**  
16

17  
18 Q. How have you updated your analysis since you filed direct testimony in this proceeding on  
19 August 3, 1998?

20  
21 A. Two major elements are present in my updated analysis. First, I use more recent stock, interest  
22 rate, growth rate, and beta coefficient data in my statistical analyses. This assures that my  
23 capital cost estimates for BST and Sprint-FL are as timely and forward-looking as possible.  
24 Second, since filing my direct testimony, 1997 year-end financial data have become available  
25

1 on a sufficient number of firms to allow me to update my identified portfolio of firms  
2 comparable in risk to BST and to update my identified portfolio of firms comparable in risk to  
3 Sprint-FL.

4  
5 Q. What updated cost of equity capital do you estimate for BST using the DCF model presented in  
6 your previously filed direct testimony?  
7

8 A. Billingsley Exhibit No. RSB-1 lists the updated portfolio of 20 firms that are comparable in risk  
9 to BST and reports the average cost of equity for the portfolio using both IBES and Zacks  
10 growth rate forecasts. The evidence indicates that the cost of equity for BST is in the range of  
11 14.45% to 14.46%.  
12

13 Q. What updated cost of equity capital do you estimate for Sprint-FL using the DCF model  
14 presented in your previously filed direct testimony?  
15

16 A. Billingsley Exhibit No. RSB-2 lists the portfolio of 20 firms that are comparable in risk to  
17 Sprint-FL and reports the average cost of equity for the portfolio using both IBES and Zacks  
18 growth rate forecasts. The evidence indicates that the cost of equity for Sprint-FL is in the range  
19 of 14.43% to 14.53%.  
20

21  
22 ***V. UPDATED CAPITAL ASSET PRICING MODEL ESTIMATES OF EQUITY***

23 ***CAPITAL COSTS FOR BST AND SPRINT-FL***  
24  
25

1 Q. What updated cost of equity capital do you estimate for BST under the CAPM approach?

2

3 A. Using July, 1998 data, I estimate an updated risk-free rate of return of 6.14%, an average beta of  
4 0.83 for firms comparable in risk to BST, and IBES and Zacks growth rate estimates that imply  
5 an expected return on the S&P 500 of 15.85% and 16.09%, respectively. These objective,  
6 market-determined data indicate that BST's cost of equity capital is 14.20% using the IBES  
7 growth rate and 14.40% using the Zacks growth rate forecast.

8

9 Q. What updated cost of equity capital do you estimate for Sprint-FL under the CAPM approach?

10

11 A. I use the same risk-free rate and expected rates of return on the S&P 500 as above and an  
12 average beta of 0.84 for the group of firms comparable in risk to Sprint-FL. These assumptions  
13 yield a forward-looking cost of equity estimate for Sprint-FL of 14.30% using the IBES growth  
14 rate and 14.50% using the Zacks growth rate forecast.

15

16 **VI. UPDATED MARKET RISK PREMIUM ANALYSES OF THE COST OF**  
17 **EQUITY CAPITAL**

18

19 **A. Aaa- AND A-RATED PUBLIC UTILITY BOND RETURN**  
20 **REFERENCE POINT ANALYSIS**

21

22 Billingsley Exhibit No. RSB-5 shows that the average expected risk premium relative to Aaa-  
23 rated public utility bonds from 1987 to July of 1998 is 6.94%. The average yield on Aaa-rated  
24 public utility debt over the most recent three months (May to July of 1998) is 6.85%. Thus, the

25

1 average risk premium of 6.94% is added to the recent average Aaa-public utility bond return of  
2 6.85% to yield an expected cost of equity return on the S&P 500 of 13.79%.

3  
4 Billingsley Exhibit No. RSB-6 shows that the average expected risk premium relative to A-  
5 rated public utility bonds from 1987 to July of 1998 is 6.76%. The average yield on A-rated  
6 public utility over the most recent three months (May to July of 1998) is 7.07%. Thus, the  
7 average risk premium of 6.76% is added to the recent average A-public utility bond return of  
8 7.07% to yield an expected cost of equity return on the S&P 500 of 13.83%.

9  
10 In summary, risk premium analyses using both Aaa- and A-rated public utility bond return  
11 reference points indicate that the expected return on the broad equity market, as measured by  
12 the S&P 500, is currently between 13.79% and 13.83%.

13  
14 **B. ADJUSTMENT FOR POTENTIAL CHANGES IN THE RISK**  
15 **PREMIUM OVER TIME**

16  
17 Q. What specific adjustment do you make to update your risk premium analysis in light of the  
18 evidence cited in your previously filed direct testimony on the inverse relationship between the  
19 risk premium and the level of interest rates?

20  
21 A. As noted in my direct testimony, during the period of the Harris and Marston study (R. S.  
22 Harris and F.C. Marston, "Estimating Shareholder Risk Premia Using Analysts' Growth  
23 Forecasts," *Financial Management*, Vol. 21, No. 2, 1992, pp. 63-70), the average risk  
24 premium was 6.47% and the average yield on long-term U.S. Treasury bonds was 9.84%. The  
25 study finds evidence that the equity market risk premium is expected to change an average of -

1 .651 of changes in the level of long-term Treasury bond yields. Given that the current average  
2 yield on 30-year Treasury bonds is 5.68% (July of 1998), the appropriate current risk premium  
3 is 9.18%. This is calculated by multiplying the 4.16% decline in rates since the time period of  
4 Harris and Marston's study by -.651 and adding back the average risk premium of 6.47% to the  
5 indicated change of 2.71%. This alternative approach consequently provides an expected return  
6 on the S&P 500 of 14.86%, which is the current average level of 30-year Treasury yields of  
7 5.68% added to the adjusted risk premium of 9.18%.

8  
9 Q. What is your conclusion with regard to the equity capital costs of BST and Sprint-FL in light of  
10 the most recent capital market data?

11  
12 A. Based on my updated cost of equity analyses, I believe that BST's cost of equity is in the range  
13 of 14.20% to 14.46% and Sprint-FL's cost of equity is in the range of 14.30% and 14.53%.

14  
15 **VII. UPDATED DEBT CAPITAL COSTS OF BST AND SPRINT-FL**

16  
17 Q. What are your updated estimates of the forward-looking costs of debt for BST and Sprint-FL?

18  
19 A. As in my direct testimony, I use the yields on Aaa-rated bonds as one benchmark in my analysis  
20 because this is the bond rating on BST's debt and the yields on A-rated bonds are used as  
21 another benchmark because this is the bond rating on Sprint-FL's debt. For the period from  
22 May to July of 1998, 30-year U.S. Treasury bonds yielded an average of 5.77%. As shown in  
23 Billingsley Exhibit RSB-7, the spread between Aaa-rated public utility bonds and 30-year  
24 Treasury bonds averaged 0.80% from October of 1987 through July of 1998. Adding the  
25

1 average spread of 0.80% to the above recent average Treasury bond yield to maturity of 5.77%  
2 produces a yield of 6.57%, which does not reflect the material effect of flotation costs.  
3

4 As shown in Billingsley Exhibit RSB-8, the spread between A-rated public utility bonds and  
5 30-year Treasury bonds averaged 1.15% from October of 1987 through July of 1998. Adding  
6 the average spread of 1.15% to the above-noted recent average Treasury bond yield to maturity  
7 of 5.77% produces a yield of 6.92%, which does not reflect the material effect of flotation costs.  
8

9 Based on my updated analyses, I believe that BST's forward-looking cost of debt is 6.60% and  
10 that Sprint-FL's forward-looking cost of debt is 6.95%.  
11

12 **VIII. REASONABLENESS OF USING AN 11.25% COST OF CAPITAL**  
13 **IN THE COST STUDIES OF BST AND SPRINT-FL**  
14

15 Q. What are the results of your updated first test of the reasonableness of each firm's use of an  
16 11.25% overall cost of capital?  
17

18 A. As shown in Billingsley Exhibit RSB-9, as of June 30, 1998, BST's reported book value  
19 capital structure was 56.44% equity and 43.56% debt and its embedded cost of debt was 6.39%.  
20 An overall cost of capital of 11.25% implies a cost of equity of 15.00%. As shown in  
21 Billingsley Exhibit RSB-10, as of June 30, 1998, Sprint-FL's reported book value capital  
22 structure was 60.05% equity and 39.95% debt and its embedded cost of debt was 7.13%. An  
23 overall cost of capital of 11.25% implies a cost of equity of 13.99%.  
24  
25

1 Q. Please describe the results of the updated second test of the reasonableness of using an 11.25%  
2 overall cost of capital in the cost studies of BST and Sprint-FL.

3

4 A. Assuming the capital structure that is used in the cost studies of both firms and the forward-  
5 looking costs of debt for each firm (6.60% for BST and 7.02% for Sprint-FL), an 11.25%  
6 overall cost of capital implies a cost of equity of 14.35% for BST and 14.12% for Sprint-FL.

7

8 Q. What are your updated estimates of the overall costs of capital of BST and Sprint-FL?

9

10 A. As in my previously filed direct testimony, I use my estimated costs of equity and debt along  
11 with the average market value-based capital structures for each of the two groups of 20 firms  
12 shown to be comparable in risk to BST and Sprint-FL. The analysis uses a cost of debt of 6.60%  
13 and a cost of equity of from 14.20% to 14.46% for BST. As shown in Billingsley Exhibit RSB-  
14 11, the updated average market value-based capital structure is 86.06% equity and 13.94% debt.  
15 These data indicate that BST's overall forward-looking cost of capital is in the range of 13.14%  
16 to 13.36%.

17

18 The updated analysis of Sprint-FL uses a cost of debt of 6.95% and a cost of equity of from  
19 14.30% to 14.53%. As shown in Billingsley Exhibit RSB-12, the average market value-based  
20 capital structure is 83.72% equity and 16.28% debt. These data indicate that Sprint-FL's overall  
21 forward-looking cost of capital is in the range of 13.10% to 13.29%.

22

23 Q. What conclusions do you draw concerning the reasonableness of using an 11.25% overall cost  
24 of capital in the cost studies of BST and Sprint-FL?

25

1 A. Based on the above updated tests, the use of an 11.25% overall cost of capital by BST is  
2 reasonable and quite conservative. Specifically, the two indirect tests indicate that an overall  
3 cost of capital of 11.25% implies a cost of equity between 14.35% and 15.00%. These implied  
4 rates are within or only about 50 basis points higher than my estimated range for BST's cost of  
5 equity of between 14.20% and 14.46%. My overall cost of capital estimate for BST is in the  
6 range of 13.14% and 13.36%, which is between 189 and 211 basis points above the 11.25% rate  
7 used in the company's cost studies.

8  
9 Similarly, the use of an 11.25% overall cost of capital by Sprint-FL is reasonable and quite  
10 conservative. The two indirect tests indicate that an overall cost of capital of 11.25% implies a  
11 cost of equity between 13.99% and 14.12%. These implied rates are between 31 and 41 basis  
12 points below my estimated range for Sprint-FL's cost of equity of between 14.30% and 14.53%.  
13 My overall cost of capital estimate for Sprint-FL is in the range of 13.10% and 13.29%, which  
14 is between 185 and 204 basis points above the rate used in the firm's cost studies.

15  
16 Q. What are your revised and updated estimates of the equity capital costs for BST and Sprint-FL  
17 assuming annual dividend payments and no flotation costs?

18  
19 A. An annual DCF model that ignores flotation costs produces a cost of equity for BST of 14.35%  
20 using IBES growth rate forecasts and 14.34% using Zacks growth forecasts. The same revised  
21 DCF model produces a cost of equity for Sprint-FL of 14.34% using IBES growth rate forecasts  
22 and 14.43% using Zacks growth forecasts. The revised CAPM approach indicates that BST's  
23 cost of equity is in the range of 14.21% to 14.42% and that Sprint-FL's cost of equity is in the  
24 range of 14.30% and 14.51%. Thus, under the assumption of annual compounding and no  
25



1 flotation costs the revised estimate of BST's cost of equity is within the range of 14.21% to  
2 14.42% and Sprint-FL's cost of equity is within the range of 14.30% and 14.51%.

3  
4 Q. Do you believe that it would be reasonable for BST and Sprint-FL to use an overall cost of  
5 capital of 11.25% in their cost studies if flotation costs and quarterly compounding adjustments  
6 are omitted from your estimates?

7  
8 A. Yes. The revised cost of equity capital estimates for BST are in the range of 14.21% to 14.42%  
9 and are in the range of 14.30% and 14.51% for Sprint-FL. The same two indirect tests of  
10 reasonableness used above imply costs of equity that are within or close to the range of these  
11 revised cost of equity estimates for both firms. Further, calculation of the overall costs of capital  
12 for each firm in the same manner as described above but using the above revised cost of equity  
13 ranges yields a range from 13.15% to 13.32% for BST and produces a range from 13.10% to  
14 13.28% for Sprint-FL. Thus, the use of an 11.25% cost of capital by BST or Sprint-FL in their  
15 cost studies is quite conservative even in the absence of adjustments for flotation costs and the  
16 quarterly payment of dividends.

17  
18 Q. Does this conclude your rebuttal testimony?

19  
20 A. Yes, it does.

**DCF AND CAPM DATA FOR BST COMPARABLE FIRM PORTFOLIO**

**DCF RESULTS**

<b><u>Portfolio of Comparable Firms</u></b>	<b><u>IBES</u></b>	<b><u>ZACKS</u></b>	<b><u>BARRA Beta Coefficient</u></b>
Abbott Labs	14.28%	14.21%	0.92
Alcoa	10.68%	13.05%	0.90
Amoco Corporation	11.99%	11.94%	0.60
Anheuser Busch	12.80%	11.38%	0.78
Avery Dennison	15.71%	15.56%	0.66
Cincinnati Bell	19.32%	19.54%	0.87
Corning Incorporated	21.28%	20.92%	1.09
DuPont & Co.	13.03%	13.47%	1.01
Electronic Data	16.30%	15.97%	1.04
Eli Lilly	17.53%	17.57%	0.97
Hershey Foods	17.04%	13.21%	0.76
Kellogg	13.12%	13.01%	0.80
Mobil Corporation	11.07%	11.19%	0.51
Nalco Chemical	13.77%	13.70%	0.79
R. R. Donnelley	13.98%	14.00%	0.85
Rohm & Haas	11.98%	11.94%	0.84
Southern New England Telephone	10.29%	8.28%	0.66
Texaco	12.91%	13.74%	0.53
TRW Incorporated	12.49%	11.93%	0.68
Warner-Lambert	23.69%	24.40%	1.10
<hr/>			
<b>AVERAGE</b>	<b>14.46%</b>	<b>14.45%</b>	<b>0.83</b>
<hr/>			

**DCF AND CAPM DATA FOR SPRINT-FL COMPARABLE FIRM  
 PORTFOLIO**

**DCF RESULTS**

<b><u>Portfolio of Comparable Firms</u></b>	<b><u>IBES</u></b>	<b><u>ZACKS</u></b>	<b><u>BARRA Beta Coefficient</u></b>
Anheuser Busch	12.80%	11.38%	0.78
Apache Corporation	13.84%	13.23%	0.76
Atlantic Richfield	10.49%	10.97%	0.64
Avery Dennison	15.71%	15.58%	0.86
Avon Products	17.44%	17.43%	0.93
Cincinnati Bell	19.32%	19.54%	0.87
Dow Chemical	12.54%	11.08%	0.78
Du Pont & Company	13.03%	12.47%	1.01
Ecolab Incorporated	16.44%	16.44%	0.83
Electronic Data	16.30%	15.97%	1.04
Harley Davidson	18.17%	18.53%	0.93
Leggett & Platt	15.59%	16.80%	0.91
Phillips Petroleum Corporation	12.53%	12.74%	0.82
PPG Industries	12.56%	12.99%	0.84
Rayonier Incorporated	11.45%	10.15%	0.79
Rohm & Haas	11.98%	11.94%	0.84
Sprint Corporation	15.43%	19.99%	0.73
Sundstrand Corporation	15.77%	15.48%	0.89
TRW Incorporated	12.49%	11.93%	0.68
U. S. Freightways Corporation	14.81%	14.97%	0.92
<b>AVERAGE</b>	<b>14.43%</b>	<b>14.53%</b>	<b>0.84</b>

## COMPARABLE FIRM IDENTIFICATION CRITERIA AND METHODOLOGY

### I. Introduction

Since BellSouth Telecommunications (BST) does not have equity trading independently of BellSouth Corporation and Sprint-Florida Incorporated (Sprint-FL) does not have equity trading independently of Sprint Corporation, no direct market prices of equity can be used to infer the companies' costs of equity. Thus, it is necessary to identify portfolios of firms that are comparable in equity investment risk to each of the target firms. The discounted cash flow (DCF) model is applied to each of the portfolio's members and an average cost of equity capital is determined for the BST-comparables group and then for the Sprint-FL-comparables group. Given that each portfolio of firms is of comparable risk to its target firm, BST or Sprint-FL, each of these average costs of equity is an objective, reasonable estimate of each target firm's cost of equity. The next section identifies the sources of investment risk and the specific proxies used to identify comparable firms.

### II. Risk Criteria

The following sources of investment risk are measured and used to identify a group of firms that is comparable in risk to each of the target firms under analysis:

#### A. Financial Risk

##### 1. Relative Amount of Debt

Financial risk is dependent, in part, on the amount of total debt employed by a firm relative to its equity base. Other things being equal, higher debt per dollar of equity implies higher risk. This source of risk is measured by a firm's equity-to-total capital ratio. The most recent annual value (1997) of this ratio is used.

##### 2. Ability to Service Debt

Apart from the above descriptive measure of a firm's relative indebtedness, it is important to evaluate the ability of a firm to service its total debt. This is assessed by examining the amount of interest (I) that a firm owes relative to the resources (net cash flow (NCF), or net income plus non-cash expenses plus interest expense) it has available to meet that commitment. This is measured by the cash flow-based interest coverage ratio,  $NCF/I$ .

Other things being equal, an increase in this ratio reflects greater ability to service debt and consequently implies lower riskiness. The most recent annual value (1997) of this variable is used.

3. Bond Rating

Bond ratings reflect a rating agency's evaluation of the relative probability of default on a firm's given debt security. Ratings are readily accessible to investors and are commonly used to appraise the risk of a firm. Bond ratings are assigned numerical (i.e., dummy variable) values for the purposes of the present analysis. The most recent bond rating available is used.

B. Business Risk

1. Variability of Cash Flows

The variability of a firm's cash flows characterize the riskiness of a firm's chosen line of business. Cash flows represent a firm's command over goods and services. The risk implications of a given level of cash flows are easiest to interpret when related to an economically meaningful base such as total assets. This source of risk is measured by the standard deviation of the ratio of a firm's operating cash flows-to-total average assets. Higher values of the measure are associated with greater risk. The variable is calculated using the most recent five years of annual data (1993-1997).

2. Operating Return on Assets

The operating return on assets, as measured by the ratio of a firm's operating cash flow-to-total average assets, reflects the business risk associated with generating income in a given line of business. Operating cash flow is used because it does not include the risk effects captured in measures that include financing and investing choices. This variable is calculated using the most recent annual data (1997).

**III. Methodology Used in the Comparable Firms Identification Process**

A portfolio of comparable firms is identified using a modified cluster analysis model. Classical cluster analysis techniques develop natural groupings of objects based on the relationships among a

given set of descriptive variables. The goal is to determine how the object should be assigned to groups so that there will be as much similarity within groups and as much difference among groups as possible. No predetermined reference object is offered to organize the grouping effort. The modified cluster analysis used in this analysis differs from the classical techniques by identifying a target object (firm) characterized by several descriptive (financial) measures. The goal of this application is to find a group of firms that is as similar as possible to the target firm in terms of the identified measures of investment risk. Unlike classical cluster analysis, the goal of maximizing the differences among groups is irrelevant since all dissimilar groups are discarded. Specifically, in this context, only those firms that are identified as comparable to the given target firm are retained for use in inferring its cost of equity capital.

As in classical cluster models, similarity is determined by measuring the Euclidian distance between the descriptive variables in a manner that considers the multivariate nature of the problem. The distance  $D_i$  of each firm  $i$  in the sample from the target firm  $T$ , assuming the five descriptive variables  $V_{ij}$  discussed above, is calculated as:

$$D_i = \sqrt{\sum_{j=1}^5 (V_{ij} - V_{Tj})^2}$$

The distance measure uses the squared differences of a given firm's descriptive variable from that of the target firm  $T$  in order to measure distance irrespective of whether it is above (positive) or below (negative) the respective value for the target firm. The portfolio of firms considered to be similar to the target, BST or Sprint-FL, is identified by balancing the goals of minimizing the distance  $D_i$  of a firm from the target with the desire to have a sample of sufficient size to assure confidence in its representativeness.

#### IV. Issues in Applying Cluster Analysis

Only firms available on the COMPUSTAT data source also having an IBES and Zacks consensus growth rate forecast based on at least two analysts' estimates are retained for analysis. Firms with fiscal years ending in December of the most recent year for which data are available (1997) are considered in the analysis. Foreign, financial, and limited partnership firms are eliminated. Outliers are identified on a variable-by-variable basis. Those firms with variable values greater than two standard deviations above or below the mean value of the population for each variable are deleted. All outliers are eliminated before standardizing the variables to prevent biasing the means and standard deviations. The final population consists of 308 firms.

Since the proxies of investment risk discussed above are denominated in different units of measurement, they consequently need to be standardized. A Z-statistic is calculated using the mean of  $V_j$  and the standard deviation  $\sigma_j$  of each variable across all of the firms as:

$$Z_j = \frac{V_{ij} - \bar{V}_j}{\sigma_j}$$

The squared difference between the Z-value for each firm's given variable and the value of the Z-statistic for the target firm for the same given variable across all descriptive variables is then calculated. After generating Z-values for every variable for each firm, squared differences for each firm are summed. The distance measure  $D_i$  is determined by taking the square root of the sum of the squared differences.

The final step in the analysis is the identification of the portfolio of the 20 firms that are the least distance from BST or Sprint-FL. Billingsley Exhibit No. RSB-1 lists the final group of comparable firms for BST and Billingsley Exhibit No. RSB-2 lists the final group of comparable firms for Sprint-FL. A correlation coefficient matrix for the variables used to identify firms is provided on the following page.

**CLUSTER ANALYSIS CORRELATION MATRIX**

	<u>Common Equity to Total Capital</u>	<u>Operating Cash Flow to Assets Standard Deviation</u>	<u>Operating Cash Flow to Assets</u>	<u>Cash Flow Interest Coverage</u>
<b>Bond Rating</b>	-0.385	0.210	-0.319	-0.448
<b>Common Equity to Total Capital</b>		0.221	0.411	0.587
<b>Operating Cash Flow to Assets Standard Deviation</b>			0.208	0.066
<b>Operating Cash Flow to Assets</b>				0.401



## CALCULATION OF U. S. TREASURY BOND FUTURES' IMPLIED INTEREST RATE

The interest rate implied by the price of a U.S. Treasury Bond futures contract cannot be directly taken from **The Wall Street Journal**. Rather, it must be calculated as follows:

$$(Price\ of\ Contract) \times 10 = \frac{\$40}{(1+i)^1} + \frac{\$40}{(1+i)^2} + \dots + \frac{\$40}{(1+i)^{40}} + \frac{\$1,000}{(1+i)^{40}}$$

where  $i$  = the semi-annual rate of return.

The implied annual rate of return on U.S. Treasury bond futures is calculated as:  
 Annual Rate of Return =  $(1+i)^2 - 1$ .

The U.S. Treasury Bond futures contract prices shown below are averaged, by contract maturity, using the Friday settlement prices for July of 1998.

### U.S. TREASURY BOND FUTURES CONTRACT DATA

Contract Maturity						Average Implied	
	<u>07/33/98</u>	<u>07/10/98</u>	<u>07/17/98</u>	<u>07/24/98</u>	<u>07/31/98</u>	Price	Yield
09/98	124.4375	123.6250	122.0625	123.0000	122.5938	123.1438	6.09%
12/98	124.0000	123.3125	121.7500	122.7188	122.3438	122.8250	6.11%
03/99	123.4688	122.6875	121.5000	122.4688	122.0938	122.4438	6.14%
06/99	121.8125	122.4688	120.9063	121.5313	121.3438	121.6125	6.21%
<b>AVERAGE IMPLIED YIELD</b>							<b>6.14%</b>

**EXPECTED MARKET RISK PREMIUM: Aaa RATING BASE**

<u>Time Period</u>	<u>Standard &amp; Poor's 500 DCF Cost of Equity</u>	<u>Moody's Aaa Public Utility Bonds</u>	<u>Market Risk Premium</u>
10/87	14.82%	10.92%	3.90%
11/87	15.06	10.43	4.63
12/87	15.46	10.64	4.82
01/88	15.65	10.39	5.26
02/88	15.52	9.77	5.75
03/88	15.42	9.72	5.70
04/88	15.45	10.07	5.38
05/88	15.42	10.29	5.13
06/88	15.65	10.27	5.38
07/88	15.63	10.50	5.13
08/88	15.72	10.66	5.06
09/88	15.66	10.15	5.51
10/88	15.63	9.62	6.01
11/88	15.64	9.52	6.12
12/88	15.58	9.67	5.91
01/89	15.54	9.72	5.82
02/89	15.34	9.71	5.68

**EXPECTED MARKET RISK PREMIUM**

<u>Time Period</u>	<u>Standard &amp; Poor's 500 DCF Cost of Equity</u>	<u>Moody's Aaa Public Utility Bonds</u>	<u>Market Risk Premium</u>
03/89	15.34	9.87	5.47
04/89	15.35	9.88	5.47
05/89	15.40	9.90	5.80
06/89	15.22	9.13	6.09
07/89	15.36	8.98	6.38
08/89	15.14	9.02	6.12
09/89	14.94	9.10	5.84
10/89	15.02	9.01	6.01
11/89	15.17	8.92	6.25
12/89	15.12	8.92	6.20
01/90	15.18	9.08	6.10
02/90	15.29	9.35	5.94
03/90	15.47	9.48	5.99
04/90	15.62	9.60	6.02
05/90	15.70	9.58	6.12
06/90	15.71	9.38	6.33
07/90	15.81	9.36	6.45

**EXPECTED MARKET RISK PREMIUM**

<u>Time Period</u>	<u>Standard &amp; Poor's 500 DCF Cost of Equity</u>	<u>Moody's Aaa Public Utility Bonds</u>	<u>Market Risk Premium</u>
08/90	15.69	9.54	6.15
09/90	15.91	9.73	6.18
10/90	16.04	9.66	6.38
11/90	16.23	9.43	6.80
12/90	16.16	9.18	6.98
01/91	16.17	9.17	7.00
02/91	16.01	8.92	7.09
03/91	15.85	9.04	6.81
04/91	15.61	8.95	6.66
05/91	15.55	8.93	6.62
06/91	15.59	9.10	6.49
07/91	15.59	9.10	6.49
08/91	15.62	8.81	6.81
09/91	15.59	8.65	6.94
10/91	15.52	8.57	6.95
11/91	15.58	8.52	7.06

**EXPECTED MARKET RISK PREMIUM**

<u>Time Period</u>	<u>Standard &amp; Poor's 500 DCF Cost of Equity</u>	<u>Moody's Aaa Public Utility Bonds</u>	<u>Market Risk Premium</u>
12/91	15.65	8.38	7.27
01/92	15.60	8.22	7.38
02/92	15.71	8.30	7.41
03/92	15.57	8.39	7.18
04/92	15.53	8.36	7.17
05/92	15.54	8.32	7.22
06/92	15.45	8.26	7.19
07/92	15.44	8.12	7.32
08/92	15.46	8.04	7.42
09/92	15.57	8.04	7.53
10/92	15.53	8.06	7.47
11/92	15.56	8.11	7.45
12/92	15.57	8.01	7.56
01/93	15.29	7.94	7.35
02/93	15.07	7.75	7.32
03/93	15.00	7.64	7.36
04/93	14.71	7.50	7.21
05/93	14.81	7.44	7.37

BellSouth Telecommunications  
& Sprint-Florida

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Billingsley Exhibit No. RSB-5

Expected Market Risk

Premium Approach: Aaa Rating Base

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**EXPECTED MARKET RISK PREMIUM**

<u>Time Period</u>	<u>Standard &amp; Poor's 500 DCF Cost of Equity</u>	<u>Moody's Aaa Public Utility Bonds</u>	<u>Market Risk Premium</u>
06/93	14.73	7.37	7.36
07/93	14.61	7.25	7.36
08/93	14.59	6.94	7.65
09/93	14.43	6.76	7.67
10/93	14.50	6.75	7.75
11/93	14.52	7.06	7.46
12/93	14.50	7.06	7.44
01/94	14.55	7.05	7.50
02/94	14.59	7.19	7.40
03/94	14.66	7.60	7.06
04/94	14.69	8.00	6.69
05/94	14.77	8.11	6.66
06/94	14.89	8.07	6.82
07/94	14.95	8.21	6.74
08/94	14.78	8.15	6.63
09/94	14.82	8.41	6.41
10/94	14.80	8.65	6.15
11/94	14.95	8.77	6.18

BellSouth Telecommunications  
& Sprint-Florida

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Billingsley Exhibit No. RSB-5

Expected Market Risk

Premium Approach: Aaa Rating Base

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**EXPECTED MARKET RISK PREMIUM**

<u>Time Period</u>	<u>Standard &amp; Poor's 500 DCF Cost of Equity</u>	<u>Moody's Aaa Public Utility Bonds</u>	<u>Market Risk Premium</u>
12/94	14.96	8.55	6.41
01/95	15.01	8.53	6.48
02/95	14.95	8.33	6.02
03/95	14.95	8.18	6.71
04/95	14.89	8.08	6.81
05/95	14.93	7.71	7.22
06/95	14.89	7.39	7.50
07/95	14.92	7.51	7.42
08/95	14.95	7.66	7.24
09/95	14.95	7.42	7.47
10/95	14.89	7.23	7.59
11/95	14.90	7.23	7.68
12/95	14.82	6.94	7.79
01/96	14.68	6.92	7.66
02/96	14.79	7.11	7.59
03/96	14.79	7.45	7.34
04/96	14.80	7.60	7.20

**EXPECTED MARKET RISK PREMIUM**

<u>Time Period</u>	<u>Standard &amp; Poor's 500 DCF Cost of Equity</u>	<u>Moody's Aaa Public Utility Bonds</u>	<u>Market Risk Premium</u>
05/96	15.01	7.73	7.28
06/96	14.99	7.83	7.16
07/96	14.97	7.78	7.19
08/96	15.10	7.59	7.51
09/96	15.22	7.76	7.46
10/96	15.21	7.50	7.71
11/96	15.24	7.21	8.03
12/96	15.31	7.33	7.98
01/97	15.22	7.53	7.69
02/97	15.16	7.47	7.69
03/97	15.11	7.70	7.41
04/97	15.36	7.88	7.48
05/97	15.49	7.72	7.77
06/97	15.56	7.55	8.01
07/97	15.62	7.29	8.33
08/97	15.62	7.39	8.23
09/97	15.66	7.33	8.33
10/97	15.61	7.18	8.43



**EXPECTED MARKET RISK PREMIUM**

<u>Time Period</u>	<u>Standard &amp; Poor's 500 DCF Cost of Equity</u>	<u>Moody's Aaa Public Utility Bonds</u>	<u>Market Risk Premium</u>
11/97	15.57	7.09	8.48
12/97	15.48	6.99	8.49
01/98	15.54	6.85	8.69
02/98	15.63	6.91	8.68
03/98	15.56	6.96	8.52
04/98	15.57	6.94	8.55
05/98	15.69	6.94	8.67
06/98	15.77	6.80	8.86
07/98	15.80	6.80	8.43
<hr/>			
<b>AVERAGE</b>	<b>15.29%</b>	<b>8.35%</b>	<b>6.92%*</b>
<hr/>			

\* Calculated as the average of the monthly risk premiums, not as the differences of the averages for the entire time.

**EXPECTED MARKET RISK PREMIUM: "A" RATING BASE**

<u>Time Period</u>	<u>Standard &amp; Poor's 500 DCF Cost of Equity</u>	<u>Moody's A Public Utility Bonds</u>	<u>Market Risk Premium</u>
10/87	14.82%	11.34%	3.48%
11/87	15.06	10.82	4.24
12/87	15.46	10.98	4.48
01/88	15.65	10.76	4.89
02/88	15.52	10.10	5.42
03/88	15.42	10.09	5.33
04/88	15.45	10.54	4.91
05/88	15.42	10.81	4.61
06/88	15.65	10.79	4.86
07/88	15.63	11.04	4.59
08/88	15.72	11.17	4.55
09/88	15.66	10.61	5.05
10/88	15.63	10.01	5.62
11/88	15.64	9.90	5.74
12/88	15.58	10.06	5.52
01/89	15.54	10.08	5.46
02/89	15.34	10.07	5.32

**EXPECTED MARKET RISK PREMIUM**

<u>Time Period</u>	<u>Standard &amp; Poor's 500 DCF Cost of Equity</u>	<u>Moody's A Public Utility Bonds</u>	<u>Market Risk Premium</u>
03/89	15.34	10.23	5.11
04/89	15.35	10.18	5.17
05/89	15.40	9.99	5.41
06/89	15.22	9.64	5.58
07/89	15.36	9.50	5.86
08/89	15.14	9.52	5.62
09/89	14.94	9.58	5.36
10/89	15.02	9.54	5.48
11/89	15.17	9.51	5.66
12/89	15.12	9.44	5.68
01/90	15.18	9.56	5.62
02/90	15.29	9.76	5.53
03/90	15.47	9.85	5.62
04/90	15.62	9.92	5.70
05/90	15.70	10.00	5.70
06/90	15.71	9.80	5.91
07/90	15.81	9.75	6.06

**EXPECTED MARKET RISK PREMIUM**

<u>Time Period</u>	<u>Standard &amp; Poor's 500 DCF Cost of Equity</u>	<u>Moody's A Public Utility Bonds</u>	<u>Market Risk Premium</u>
08/90	15.69	9.92	5.77
09/90	15.91	10.12	5.79
10/90	16.04	10.05	5.99
11/90	16.23	9.90	6.33
12/90	16.16	9.73	6.43
01/91	16.17	9.71	6.46
02/91	16.01	9.47	6.54
03/91	15.85	9.55	6.30
04/91	15.61	9.46	6.15
05/91	15.55	9.44	6.11
06/91	15.59	9.59	6.00
07/91	15.59	9.55	6.04
08/91	15.62	9.29	6.33
09/91	15.59	9.16	6.43
10/91	15.52	9.12	6.40
11/91	15.58	9.05	6.53

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Expected Market Risk

Premium Approach: "A" Rating Base

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**EXPECTED MARKET RISK PREMIUM**

<u>Time Period</u>	<u>Standard &amp; Poor's 500 DCF Cost of Equity</u>	<u>Moody's A Public Utility Bonds</u>	<u>Market Risk Premium</u>
12/91	15.65	8.88	6.77
01/92	15.60	8.84	6.76
02/92	15.71	8.93	6.78
03/92	15.57	8.97	6.60
04/92	15.53	8.93	6.60
05/92	15.54	8.87	6.67
06/92	15.45	8.78	6.67
07/92	15.44	8.57	6.87
08/92	15.46	8.44	7.02
09/92	15.57	8.40	7.17
10/92	15.53	8.54	6.99
11/92	15.56	8.63	6.93
12/92	15.57	8.43	7.14
01/93	15.29	8.27	7.02
02/93	15.07	8.04	7.03
03/93	15.00	7.90	7.10
04/93	14.71	7.81	6.90

**EXPECTED MARKET RISK PREMIUM**

<u>Time Period</u>	<u>Standard &amp; Poor's 500 DCF Cost of Equity</u>	<u>Moody's A Public Utility Bonds</u>	<u>Market Risk Premium</u>
05/93	14.81	7.86	6.95
06/93	14.73	7.75	6.98
07/93	14.61	7.54	7.07
08/93	14.59	7.25	7.34
09/93	14.43	7.04	7.39
10/93	14.50	7.03	7.47
11/93	14.52	7.30	7.22
12/93	14.50	7.34	7.16
01/94	14.55	7.33	7.22
02/94	14.59	7.47	7.12
03/94	14.66	7.85	6.81
04/94	14.69	8.22	6.47
05/94	14.77	8.33	6.44
06/94	14.89	8.31	6.58
07/94	14.95	8.47	6.45
08/94	14.78	8.41	6.37
09/94	14.82	8.64	6.18

**EXPECTED MARKET RISK PREMIUM**

<u>Time Period</u>	<u>Standard &amp; Poor's 500 DCF Cost of Equity</u>	<u>Moody's A Public Utility Bonds</u>	<u>Market Risk Premium</u>
10/94	14.80	8.86	5.94
11/94	14.95	8.98	5.97
12/94	14.96	8.76	6.20
01/95	15.01	8.73	6.28
02/95	14.95	8.52	6.43
03/95	14.95	8.37	6.58
04/95	14.89	8.27	6.62
05/95	14.93	7.91	7.02
06/95	14.89	7.60	7.29
07/95	14.92	7.70	7.22
08/95	14.95	7.83	7.12
09/95	14.95	7.62	7.33
10/95	14.89	7.46	7.43
11/95	14.90	7.43	7.47
12/95	14.82	7.23	7.59
01/96	14.68	7.22	7.46
02/96	14.79	7.37	7.42

**EXPECTED MARKET RISK PREMIUM**

<u>Time Period</u>	<u>Standard &amp; Poor's 500 DCF Cost of Equity</u>	<u>Moody's A Public Utility Bonds</u>	<u>Market Risk Premium</u>
03/96	14.79	7.73	7.06
04/96	14.80	7.89	6.91
05/96	15.01	7.98	7.03
06/96	14.99	8.05	6.93
07/96	14.97	8.02	6.95
08/96	15.10	7.84	7.26
09/96	15.22	8.01	7.21
10/96	15.21	7.77	7.44
11/96	15.24	7.49	7.75
12/96	15.31	7.59	7.72
01/97	13.22	7.77	7.45
02/97	15.16	7.64	7.52
03/97	15.11	7.87	7.24
04/97	15.36	8.03	7.33
05/97	15.49	7.89	7.60
06/97	15.56	7.72	7.84



**EXPECTED MARKET RISK PREMIUM**

<u>Time Period</u>	<u>Standard &amp; Poor's 500 DCF Cost of Equity</u>	<u>Moody's A Public Utility Bonds</u>	<u>Market Risk Premium</u>
07/97	15.62	7.48	8.14
08/97	15.62	7.51	8.11
09/97	15.66	7.47	8.19
10/97	15.61	7.35	8.26
11/97	15.57	7.25	8.32
12/97	15.48	7.16	8.32
01/98	15.54	7.04	8.50
02/98	15.63	7.12	8.51
03/98	15.56	7.16	8.40
04/98	15.57	7.16	8.41
05/98	15.69	7.16	8.53
06/98	15.77	7.03	8.56
07/98	15.80	7.03	8.77
<hr/>			
<b>AVERAGE</b>	<b>15.29%</b>	<b>8.70%</b>	<b>6.59%*</b>
<hr/>			

\* Calculated as the average of the monthly risk premiums, not as the differences of the averages for the entire time.

### Aaa vs. Treasury Bond Yields

<u>Date</u>	<u>Moody's Aaa Public Utility Bond</u>	<u>30-Year U.S. Treasury Bond</u>	<u>Aaa/U.S. Treasury Bond Spread</u>
10/87	10.92%	9.62%	1.30%
11/87	10.43%	8.91%	1.52%
12/87	10.64%	9.09%	1.55%
01/88	10.39%	8.81%	1.58%
02/88	9.77%	8.42%	1.35%
03/88	9.72%	8.59%	1.13%
04/88	10.07%	8.98%	1.09%
05/88	10.29%	9.26%	1.03%
06/88	10.27%	9.06%	1.21%
07/88	10.50%	9.22%	1.28%
08/88	10.66%	9.37%	1.29%
09/88	10.15%	9.11%	1.04%
10/88	9.62%	8.92%	0.70%
11/88	9.52%	9.02%	0.50%
12/88	9.67%	9.01%	0.66%
01/89	9.72%	8.94%	0.78%
02/89	9.71%	9.00%	0.71%
03/89	9.87%	9.14%	0.73%

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<u>Date</u>	<u>Moody's Aaa Public Utility Bond</u>	<u>30-Year U.S. Treasury Bond</u>	<u>Aaa/U.S. Treasury Bond Spread</u>
04/89	9.88%	9.06%	0.82%
05/89	9.60%	8.90%	0.70%
06/89	9.13%	8.35%	0.78%
07/89	8.98%	8.10%	0.88%
08/89	9.02%	8.11%	0.91%
09/89	9.10%	8.17%	0.93%
10/89	9.01%	8.00%	1.01%
11/89	8.92%	7.89%	1.03%
12/89	8.92%	7.90%	1.02%
01/90	9.08%	8.24%	0.84%
02/90	9.35%	8.48%	0.87%
03/90	9.48%	8.57%	0.91%
04/90	9.60%	8.75%	0.85%
05/90	9.58%	8.73%	0.85%
06/90	9.38%	8.43%	0.95%
07/90	9.36%	8.50%	0.86%
08/90	9.54%	8.85%	0.69%
09/90	9.73%	8.99%	0.74%
10/90	9.66%	8.86%	0.80%
11/90	9.43%	8.58%	0.85%
12/90	9.18%	8.23%	0.95%

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<u>Date</u>	<u>Moody's Aaa Public Utility Bond</u>	<u>30-Year U.S. Treasury Bond</u>	<u>Aaa/U.S. Treasury Bond Spread</u>
01/91	9.17%	8.20%	0.97%
02/91	8.92%	8.08%	0.84%
03/91	9.04%	8.21%	0.83%
04/91	8.95%	8.22%	0.73%
05/91	8.93%	8.24%	0.69%
06/91	9.10%	8.48%	0.62%
07/91	9.10%	8.44%	0.66%
08/91	8.81%	8.15%	0.66%
09/91	8.65%	7.96%	0.69%
10/91	8.57%	7.95%	0.62%
11/91	8.52%	7.91%	0.61%
12/91	8.38%	7.69%	0.69%
01/92	8.22%	7.61%	0.61%
02/92	8.30%	7.86%	0.44%
03/92	8.39%	8.00%	0.39%
04/92	8.36%	7.95%	0.41%
05/92	8.32%	7.89%	0.43%
06/92	8.26%	7.83%	0.43%
07/92	8.12%	7.59%	0.53%
08/92	8.04%	7.39%	0.65%
09/92	8.04%	7.34%	0.70%

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<u>Date</u>	<u>Moody's Aaa Public Utility Bond</u>	<u>30-Year U.S. Treasury Bond</u>	<u>Aaa/U.S. Treasury Bond Spread</u>
10/92	8.06%	7.50%	0.56%
11/92	8.11%	7.56%	0.55%
12/92	8.01%	7.46%	0.55%
01/93	7.94%	7.34%	0.60%
02/93	7.75%	7.06%	0.69%
03/93	7.64%	6.78%	0.86%
04/93	7.50%	6.85%	0.65%
05/93	7.44%	6.92%	0.52%
06/93	7.37%	6.82%	0.55%
07/93	7.25%	6.63%	0.62%
08/93	6.94%	6.30%	0.64%
09/93	6.76%	6.03%	0.73%
10/93	6.75%	5.93%	0.82%
11/93	7.06%	6.24%	0.82%
12/93	7.06%	6.26%	0.80%
01/94	7.05%	6.29%	0.76%
02/94	7.19%	6.51%	0.68%
03/94	7.60%	6.94%	0.66%
04/94	8.00%	7.25%	0.75%
05/94	8.11%	7.32%	0.79%
06/94	8.07%	7.38%	0.69%

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<u>Date</u>	<u>Moody's Aaa Public Utility Bond</u>	<u>30-Year U.S. Treasury Bond</u>	<u>Aaa/U.S. Treasury Bond Spread</u>
07/94	8.21%	7.60%	0.61%
08/94	8.15%	7.61%	0.54%
09/94	8.41%	7.84%	0.57%
10/94	8.65%	8.02%	0.63%
11/94	8.77%	8.17%	0.60%
12/94	8.55%	7.91%	0.64%
01/95	8.53%	7.86%	0.67%
02/95	8.33%	7.66%	0.67%
03/95	8.18%	7.52%	0.66%
04/95	8.08%	7.43%	0.65%
05/95	7.71%	7.04%	0.67%
06/95	7.39%	6.68%	0.71%
07/95	7.51%	6.75%	0.76%
08/95	7.66%	6.92%	0.74%
09/95	7.42%	6.44%	0.98%
10/95	7.23%	6.35%	0.88%
11/95	7.13%	6.29%	0.84%
12/95	6.94%	6.05%	0.89%
01/96	6.92%	6.05%	0.87%
02/96	7.11%	6.25%	0.86%
03/96	7.45%	6.62%	0.83%

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<u>Date</u>	<u>Moody's Aaa Public Utility Bond</u>	<u>30-Year U.S. Treasury Bond</u>	<u>Aaa/U.S. Treasury Bond Spread</u>
04/96	7.60%	6.76%	0.84%
05/96	7.73%	6.94%	0.79%
06/96	7.83%	6.94%	0.89%
07/96	7.78%	7.05%	0.73%
08/96	7.59%	6.88%	0.71%
09/96	7.76%	7.00%	0.76%
10/96	7.50%	6.78%	0.72%
11/96	7.21%	6.55%	0.66%
12/96	7.33%	6.56%	0.77%
01/97	7.53%	6.82%	0.71%
02/97	7.47%	6.70%	0.77%
03/97	7.70%	6.96%	0.74%
04/97	7.88%	7.13%	0.75%
05/97	7.72%	6.93%	0.79%
06/97	7.55%	6.73%	0.82%
07/97	7.29%	6.53%	0.76%
08/97	7.39%	6.58%	0.81%
09/97	7.33%	6.49%	0.84%
10/97	7.18%	6.33%	0.85%
11/97	7.09%	6.08%	1.01%
12/97	6.99%	5.96%	1.03%

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<u>Date</u>	<u>Moody's Aaa Public Utility Bond</u>	<u>30-Year U.S. Treasury Bond</u>	<u>Aaa/U.S. Treasury Bond Spread</u>
01/98	6.85%	5.83%	1.02%
02/98	6.91%	5.89%	1.02%
03/98	6.96%	5.92%	1.04%
04/98	6.94%	5.87%	1.07%
05/98	6.94%	5.93%	1.01%
06/98	6.80%	5.69%	1.11%
07/98	6.80%	5.68%	1.12%
<b>AVERAGE</b>	<b>6.85%</b>	<b>5.75%</b>	<b>1.10%</b>

Sources: *Moody's Bond Record*  
*The Wall Street Journal*



### "A" vs. Treasury Bond Yields

<u>Date</u>	<u>Moody's A Public Utility Bond</u>	<u>30-Year U.S. Treasury Bond</u>	<u>A/U.S. Treasury Bond Spread</u>
10/87	11.34%	9.62%	1.72%
11/87	10.82%	8.91%	1.91%
12/87	10.98%	9.09%	1.89%
01/88	10.76%	8.81%	1.95%
02/88	10.10%	8.42%	1.68%
03/88	10.09%	8.59%	1.50%
04/88	10.54%	8.98%	1.56%
05/88	10.81%	9.26%	1.55%
06/88	10.79%	9.06%	1.73%
07/88	11.04%	9.22%	1.82%
08/88	11.17%	9.37%	1.80%
09/88	10.61%	9.11%	1.50%
10/88	10.01%	8.92%	1.09%
11/88	9.90%	9.02%	0.88%
12/88	10.06%	9.01%	1.05%
01/89	10.08%	8.94%	1.14%
02/89	10.07%	9.00%	1.07%
03/89	10.23%	9.14%	1.09%
04/89	10.18%	9.06%	1.12%
05/89	9.99%	8.90%	1.09%
06/89	9.64%	8.35%	1.29%

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<u>Date</u>	<u>Moody's A Public Utility Bond</u>	<u>30-Year U.S. Treasury Bond</u>	<u>A/U.S. Treasury Bond Spread</u>
07/89	9.50%	8.10%	1.40%
08/89	9.52%	8.11%	1.41%
09/89	9.58%	8.17%	1.41%
10/89	9.54%	8.00%	1.54%
11/89	9.51%	7.89%	1.62%
12/89	9.44%	7.90%	1.54%
01/90	9.56%	8.24%	1.32%
02/90	9.76%	8.48%	1.28%
03/90	9.85%	8.57%	1.28%
04/90	9.92%	8.75%	1.17%
05/90	10.00%	8.73%	1.27%
06/90	9.80%	8.43%	1.37%
07/90	9.75%	8.50%	1.25%
08/90	9.92%	8.85%	1.07%
09/90	10.12%	8.99%	1.13%
10/90	10.05%	8.86%	1.19%
11/90	9.90%	8.58%	1.32%
12/90	9.73%	8.23%	1.50%
01/91	9.71%	8.20%	1.51%
02/91	9.47%	8.08%	1.39%
03/91	9.55%	8.21%	1.34%
04/91	9.46%	8.22%	1.24%
05/91	9.44%	8.24%	1.20%

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<u>Date</u>	<u>Moody's A Public Utility Bond</u>	<u>30-Year U.S. Treasury Bond</u>	<u>A/U.S. Treasury Bond Spread</u>
06/91	9.59%	8.48%	1.11%
07/91	9.55%	8.44%	1.11%
08/91	9.29%	8.15%	1.14%
09/91	9.16%	7.96%	1.20%
10/91	9.12%	7.95%	1.17%
11/91	9.05%	7.91%	1.14%
12/91	8.88%	7.69%	1.19%
01/92	8.84%	7.61%	1.23%
02/92	8.93%	7.86%	1.07%
03/92	8.97%	8.00%	0.97%
04/92	8.93%	7.95%	0.98%
05/92	8.87%	7.89%	0.98%
06/92	8.78%	7.83%	0.95%
07/92	8.57%	7.59%	0.98%
08/92	8.44%	7.39%	1.05%
09/92	8.40%	7.34%	1.06%
10/92	8.54%	7.50%	1.04%
11/92	8.63%	7.56%	1.07%
12/92	8.43%	7.46%	0.97%
01/93	8.27%	7.34%	0.93%
02/93	8.04%	7.06%	0.98%
03/93	7.90%	6.78%	1.12%
04/93	7.81%	6.85%	0.96%

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"A" vs. Treasury Bond Yields

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<u>Date</u>	<u>Moody's A Public Utility Bond</u>	<u>30-Year U.S. Treasury Bond</u>	<u>A/U.S. Treasury Bond Spread</u>
05/93	7.86%	6.92%	0.94%
06/93	7.75%	6.82%	0.93%
07/93	7.54%	6.63%	0.91%
08/93	7.25%	6.30%	0.95%
09/93	7.04%	6.03%	1.01%
10/93	7.03%	5.93%	1.10%
11/93	7.30%	6.24%	1.06%
12/93	7.34%	6.26%	1.08%
01/94	7.33%	6.29%	1.04%
02/94	7.47%	6.51%	0.96%
03/94	7.85%	6.94%	0.91%
04/94	8.22%	7.25%	0.97%
05/94	8.33%	7.32%	1.01%
06/94	8.31%	7.38%	0.93%
07/94	8.47%	7.60%	0.87%
08/94	8.41%	7.61%	0.80%
09/94	8.64%	7.84%	0.80%
10/94	8.86%	8.02%	0.84%
11/94	8.98%	8.17%	0.81%
12/94	8.76%	7.91%	0.85%
01/95	8.73%	7.86%	0.87%
02/95	8.52%	7.66%	0.86%
03/95	8.37%	7.52%	0.85%

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<u>Date</u>	<u>Moody's A Public Utility Bond</u>	<u>30-Year U.S. Treasury Bond</u>	<u>A/U.S. Treasury Bond Spread</u>
04/95	8.27%	7.43%	0.84%
05/95	7.91%	7.04%	0.87%
06/95	7.60%	6.68%	0.92%
07/95	7.70%	6.75%	0.95%
08/95	7.83%	6.92%	0.91%
09/95	7.62%	6.44%	1.18%
10/95	7.46%	6.35%	1.11%
11/95	7.43%	6.29%	1.14%
12/95	7.23%	6.05%	1.18%
01/96	7.22%	6.05%	1.17%
02/96	7.37%	6.25%	1.12%
03/96	7.73%	6.62%	1.11%
04/96	7.89%	6.76%	1.13%
05/96	7.98%	6.94%	1.04%
06/96	8.06%	6.94%	1.12%
07/96	8.02%	7.05%	0.97%
08/96	7.84%	6.88%	0.96%
09/96	8.01%	7.00%	1.01%
10/96	7.77%	6.78%	0.99%
11/96	7.49%	6.55%	0.94%
12/96	7.59%	6.56%	1.03%
01/97	7.77%	6.82%	0.95%
02/97	7.64%	6.70%	0.94%

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<u>Date</u>	<u>Moody's A Public Utility Bond</u>	<u>30-Year U.S. Treasury Bond</u>	<u>A/U.S. Treasury Bond Spread</u>
03/97	7.87%	6.96%	0.91%
04/97	8.03%	7.13%	0.90%
05/97	7.89%	6.93%	0.96%
06/97	7.72%	6.73%	1.00%
07/97	7.48%	6.53%	0.95%
08/97	7.51%	6.58%	0.93%
09/97	7.47%	6.49%	0.98%
10/97	7.35%	6.33%	1.02%
11/97	7.25%	6.08%	1.17%
12/97	7.16%	5.96%	1.20%
01/98	7.04%	5.83%	1.21%
02/98	7.12%	5.89%	1.23%
03/98	7.16%	5.92%	1.24%
04/98	7.16%	5.87%	1.29%
05/98	7.16%	5.93%	1.23%
06/98	7.03%	5.69%	1.52%
07/98	7.03%	5.68%	1.35%
<hr/>			
<b>AVERAGE</b>	<b>8.70%</b>	<b>7.55%</b>	<b>1.15%</b>
<hr/>			

Sources: *Moody's Bond Record*  
*The Wall Street Journal*

**BellSouth Telecommunications  
 Book Value Capital Structure  
 June 30, 1998**

<u>Source</u>	<u>Ratio</u>	<u>Rate</u>	<u>Weighted Cost</u>
Equity	56.44%	15.00% (Implied)	8.47%
Debt	<u>43.56%</u>	6.39%	<u>2.78%</u>
Total	100.00%		11.25%

**60% Equity Ratio Used in BellSouth Telecommunications Cost Studies**

<u>Source</u>	<u>Ratio</u>	<u>Rate</u>	<u>Weighted Cost</u>
Equity	60.00%	14.35% (Implied)	8.61%
Debt	<u>40.00%</u>	6.60%	<u>2.64%</u>
Total	100.00%		11.25%

**BellSouth Telecommunications  
 Market Value Capital Structure  
 July 1998**

<u>Source</u>	<u>Ratio</u>	<u>Rate</u>	<u>Weighted Cost</u>
Equity	86.40%	14.20%-14.46%	12.27%-12.49%
Debt	<u>13.60%</u>	6.60%	<u>.90%</u>
Total	100.00%		13.17%-13.39%

**Sprint-Florida  
 Book Value Capital Structure  
 June 30, 1998**

<u>Source</u>	<u>Ratio</u>	<u>Rate</u>	<u>Weighted Cost</u>
Equity	60.05%	13.99% (Implied)	8.40%
Debt	<u>39.95%</u>	7.13%	<u>2.85%</u>
Total	100.00%		11.25%

**Capital Structure Used in Sprint-Florida Cost Studies**

<u>Source</u>	<u>Ratio</u>	<u>Rate</u>	<u>Weighted Cost</u>
Equity	59.58%	14.17% (Implied)	8.44%
Debt	<u>40.42%</u>	6.95%	<u>2.81%</u>
Total	100.00%		11.25%

**Sprint-FL Market Value Capital Structure  
 July 1998**

<u>Source</u>	<u>Ratio</u>	<u>Rate</u>	<u>Weighted Cost</u>
Equity	83.10%	14.30%-14.53%	11.88%-12.07%
Debt	<u>16.90%</u>	6.95%	<u>1.17%</u>
Total	100.00%		13.05%-13.24%



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Market Value Capital Structure of Portfolio of Companies Comparable in Risk to  
 BellSouth Telecommunications  
 July of 1998

COMPANY	MARKET VALUE OF COMMON EQUITY	BOOK VALUE OF TOTAL DEBT	BOOK VALUE OF PREFERRED EQUITY	DEBT / TOTAL CAPITAL <sup>1</sup>	EQUITY / TOTAL CAPITAL
Abbott Labs	45082.33	2719.33	0.00	0.0569	0.9431
Alcoa	12523.06	1952.10	55.80	0.1382	0.8618
Amoco Corporation	44042.19	5688.00	0.00	0.1144	0.8856
Anheuser Busch	21364.94	4365.60	0.00	0.1697	0.8303
Avery Dennison	4293.47	447.70	0.00	0.0944	0.9056
Cincinnati Bell	4044.29	459.80	0.00	0.1021	0.8979
Corning Incorporated	10409.03	1349.10	19.80	0.1162	0.8838
DuPont & Co.	5296.19	1198.23	0.00	0.1845	0.8155
Electronic Data	62488.41	12083.00	237.00	0.1647	0.8353
Eli Lilly	21081.98	1900.40	0.00	0.0827	0.9173
Hershey Foods	7859.55	1317.38	0.00	0.1436	0.8564
Kellogg	14274.71	1995.20	0.00	0.1226	0.8774
Mobil Corporation	48318.84	2553.79	0.00	0.0502	0.9498
Nalco Chemical	52525.39	6664.00	336.00	0.1176	0.8824
R. R. Donnelley	2536.65	357.40	33.40	0.1335	0.8665
Rohm & Haas	5341.44	606.00	126.00	0.1205	0.8795
Southern New England Telephone	2426.38	1343.20	0.00	0.3563	0.6437

<sup>1</sup> Debt is defined as the book value of total debt plus the book value of preferred equity.

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COMPANY	MARKET VALUE OF COMMON EQUITY	BOOK VALUE OF TOTAL DEBT	BOOK VALUE OF PREFERRED EQUITY	DEBT / TOTAL CAPITAL <sup>1</sup>	EQUITY / TOTAL CAPITAL
Texaco	29131.67	6392.00	368.00	0.1883	0.8117
TRW Incorporated	6699.44	1656.00	1.00	0.1983	0.8017
Warner-Lambert	24380.57	2203.30	0.00	0.0829	0.9171
Average <sup>2</sup>	\$21,206.03	\$2862.57	.58.85	0.1359	0.8641

<sup>1</sup> The average debt and equity ratios are calculated as the average of the respective ratios for each individual company.

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Market Value Capital Structure of Portfolio of Companies Comparable in Risk to  
 Sprint-Florida  
 July of 1998

COMPANY	MARKET VALUE OF COMMON EQUITY	BOOK VALUE OF TOTAL DEBT	BOOK VALUE OF PREFERRED EQUITY	DEBT / TOTAL CAPITAL <sup>1</sup>	EQUITY / TOTAL CAPITAL
Anheuser Busch	20403.68	4365.60	0.00	0.1763	0.8237
Appache Corporation	2921.84	1518.58	0.00	0.3420	0.6580
Atlantic Richfield	20901.43	6201.00	1.00	0.2288	0.7712
Avery Dennison	3983.09	447.70	0.00	0.1010	0.8990
Avon Products	6909.85	234.30	0.00	0.0328	0.9672
Cincinnati Bell	3836.35	459.80	0.00	0.1070	0.8930
Dow Chemical	18591.33	6258.00	49.00	0.2533	0.7467
Du Pont & Company	59840.60	12083.00	237.00	0.1707	0.8293
Ecolab Incorporated	2426.29	308.27	0.00	0.1127	0.8873
Electronic Data	19643.88	1900.40	0.00	0.0882	0.9118
Harley Davidson	2570.94	370.64	0.00	0.1260	0.8740
Leggett & Platt	3016.29	512.80	0.00	0.1453	0.8547
Phillips Petroleum Corporation	10676.61	3659.00	0.00	0.2552	0.7448
PPG Industries	9758.93	1701.00	0.00	0.1484	0.8516
Rayonier Incorporated	1085.06	425.52	0.00	0.2817	0.7183
Rohm & Haas	4692.44	606.00	126.00	0.1349	0.8651
Sprint Corporation	18784.93	3879.60	11.50	0.1716	0.8284
Sundstrand Corporation	2565.60	365.00	0.00	0.1245	0.8755
TRW Incorporated	6419.33	1656.00	1.00	0.2052	0.7948

<sup>1</sup> Debt is defined as the book value of total debt plus the book value of preferred equity.

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COMPANY	MARKET VALUE OF COMMON EQUITY	BOOK VALUE OF TOTAL DEBT	BOOK VALUE OF PREFERRED EQUITY	DEBT / TOTAL CAPITAL <sup>1</sup>	EQUITY / TOTAL CAPITAL
U. S. Freightways Corporation	641.70	115.65	0.00	0.1527	0.8473
Average <sup>1</sup>	\$10,983.51	\$2,353.39	\$21.28	0.1690	0.8310

<sup>1</sup> The average debt and equity ratios are calculated as the average of the respective ratios for each individual company.