The GSA's Three-Year Growth Rates

42. The S&P data base contains each RHCs' earnings per share for 1997, along with two EPS numbers for each of the years 1998, 1999, and 2000. The first EPS number for each year is the average consensus analysts' estimate of EPS for each year; the second EPS number for each year is calculated by multiplying each RHC's 1997 EPS by (1 + its historical growth rate over the previous five years). The GSA uses the EPS data calculated from historical growth rates to calculate its "three-year growth forecast" for each RHC. Not surprisingly, the GSA's three-year growth rates are equal to the RHCs' five-year historical growth rates. The GSA completely ignores the analysts' projected EPS values for 1998, 1999, and 2000 in calculating their three-year growth rate. Thus, the GSA's so-called "three-year growth forecast" is not an analysts' forecasted growth rate at all: it is simply an historical growth rate for the previous five years.

43. The GSA's calculation of its three-year growth forecast for the RHCs can be demonstrated using data for Bell Atlantic. S&P reports 1997 EPS of $1.58 for Bell Atlantic. Bell Atlantic's five-year historical growth rate from 1992 to 1997 was 6.43 percent.[14] Using the historical EPS growth rate of 6.43 percent, GSA projects Bell Atlantic's EPS in 1998, 1999, and 2000 to be $1.68, $1.79, and $1.90, respectively. The GSA obtains their three-year growth rate by dividing 1.90 by 1.58, raising the result to the one-third power, and subtracting 1. Since the GSA multiplies the 1997 EPS value of $1.58 by 6.43 percent, and each succeeding EPS value by the same percentage, the GSA's three-year growth rate equals the five-year historical 6.43 percent EPS growth rate.

[14] Calculated from a log linear regression.

44. If the GSA had correctly used the analysts' forecasted EPS values for the RHCs to calculate their three-year growth rate, rather than the historically extrapolated values, they would have obtained significantly higher growth estimates. In the case of Bell Atlantic, the GSA would have obtained a three-year growth forecast of 9.85 percent, not the 6.43 percent historical growth rate that the GSA characterizes as a "three-year forecast of earnings per share." Thus, the GSA's use of five-year historical growth rates has caused them to significantly underestimate investors' expectations of future growth for the RHCs.

45. The GSA also fails to recognize that there is no logical reason to combine a three-year growth forecast with a five-year growth forecast to estimate the long-term growth component of the DCF Model. To the contrary, one should use the longest analyst growth forecast that is available to estimate the growth component of the DCF Model. In this case, the longest analyst growth forecast is a five-year forecast. There is no justification for combining the five-year forecast with a forecast for a shorter period, even if calculated correctly. If the GSA had employed just the consensus analysts' long-term growth forecast to estimate the growth component of its DCF Model, its cost of equity estimate would have increased by at least 56 basis points.

Analysts versus Historical Growth Forecasts

46. The issue of whether investors use analysts' or historical growth rates to forecast future growth has been thoroughly studied in the finance literature. Indeed, there is considerable empirical evidence that analysts' forecasts are better predictors of future growth than a firm's historical growth rates and that investors actually use these forecasts. As an example of this literature, I cite a study I prepared in conjunction with Willard T. Carleton, Karl Eller Professor of Finance at the University of Arizona, on the use of analysts' versus historical growth rates in

the DCF Model.[15] In our study, we performed a correlation analysis to identify the historically-oriented growth rates which best described a firm's stock price. We then did a regression study comparing the historical growth rates with the consensus analysts' forecasts. In every case, the regression equations containing the average of analysts' forecasts statistically outperformed the regression equations containing the historical growth estimates. These results are consistent with those found by Cragg and Malkiel, the early major research in this area. These results are also consistent with the hypothesis that investors use analysts' forecasts, rather than historically-oriented growth calculations, in making buy and sell decisions. They provide overwhelming evidence that the analysts' forecasts of future growth are superior to historically-oriented growth measures in predicting a firm's stock price.

47. The GSA's use of historical EPS growth rates is also inconsistent with their own statements on page 15 of their Direct Case: "Unfortunately, recent historical trends in RBOC earnings have been extraordinarily erratic. This is partly owing to mergers (SBC, Bell Atlantic) and partly to special charges (all five RBOCs in 1993, 1994 or 1995)." From this statement, it is obvious that the GSA failed to recognize that its three-year growth rates were, in fact, five-year historical growth rates.

I/B/E/S versus ACE Growth Forecasts

48. In its Notice of Proposed Rulemaking, the Commission asks for comments on its proposal to use the ACE forecasts of long-term EPS growth rather than the I/B/E/S long-term growth forecasts. The GSA accepts the Commission's proposal to use the ACE forecasts, but supplements the ACE forecasts with forecasts based on five-year historical growth. My analysis of the ACE forecasts strongly suggests that the I/B/E/S growth forecasts are superior to the ACE

[15] This study is described in a paper entitled "Investor Growth Expectations and Stock Prices: the Analysts versus Historical Growth Extrapolation," published in the Spring 1988 edition of *The Journal of Portfolio Management*.

forecasts because the I/B/E/S consensus forecasts are based on significantly more analysts than the ACE forecasts and the I/B/E/S forecasts are more highly correlated with stock prices than the ACE consensus forecasts.

49. Standard & Poor's obtains their ACE forecasts by surveying a group of analysts that follow the companies in the S&P data base. From its surveys, S&P reports a mean ACE long-term EPS growth forecast and a median long-term EPS growth forecast for each company. The GSA uses the median ACE long-term EPS growth forecast for each RHC as one data point in their growth estimate for their DCF Model. The ACE median growth forecast for both Ameritech and Bell Atlantic is based on 12 contributing analysts, while the median growth forecast for BellSouth, SBC, and U S West, is based on 13 contributing growth forecasts. The I/B/E/S consensus growth forecasts for the RHCs are based on the individual estimates of 17 to 20 analysts, depending on the company. A similar disparity between the number of analysts reporting to the ACE and I/B/E/S surveys holds for larger samples of companies, including the S&P Industrials and the companies in the S&P Compustat data base. The average I/B/E/S growth forecast for firms in the S&P Industrials, for example, is based on the individual estimates of more than 17 analysts, while the average ACE forecast is based on the individual estimates of just 12 analysts. These data clearly demonstrate that I/B/E/S is a more comprehensive data base than ACE.

50. An additional weakness of the ACE forecasts is that only the current month's forecast data are available from S&P, whereas I/B/E/S maintains historical data on the consensus analysts' growth forecasts. Furthermore, the GSA uses the median ACE consensus growth forecast, which Standard & Poor's reports will no longer be available.

51. The superiority of the I/B/E/S consensus analysts forecasts over the ACE consensus analysts forecasts can be further demonstrated by examining the results of a regression study which compares the ability of the I/B/E/S and ACE growth forecasts to predict company stock prices. The regression study used the equation:

$$\frac{P}{E} = a \times \textit{Dividend Payout} + b \times \textit{growth rate} + c \times \textit{std. dev. of growth rate},$$

where P/E is the company's P/E ratio at year-end 1998; dividend payout is the company's dividend payout ratio at year-end 1998, growth rate is either the I/B/E/S or ACE long-term consensus analysts' mean growth rate, and std. dev. of growth rate is the standard deviation of either the I/B/E/S or ACE long-term consensus analysts' growth rates. The companies examined included all dividend-paying companies in the S&P Compustat database that have both ACE and I/B/E/S long-term growth estimates. The results of this regression study are shown in Tables 1 and 2.

Table 1
Regression Output with ACE Growth Forecasts

	Intercept	Dividend Payout	ACE Mean Growth	Standard Deviation of Growth	Adjusted R Square	F
Coefficient	-1.97	21.64	77.38	26.45	0.184	84.75
t Statistic	(-1.25)	(15.19)	(7.42)	(1.41)		

Table 2
Regression Output with I/B/E/S Growth Forecasts

	Intercept	Dividend Payout	I/B/E/S Mean Growth	Standard Deviation of Growth	Adjusted R Square	F
Coefficient	-3.54	22.14	113.24	-62.79	0.667	745.64
t Statistic	(-3.03)	(47.18)	(12.37)	(-4.55)		

These results clearly indicate that the I/B/E/S growth rates are significantly more highly correlated with stock prices than the ACE growth rates (the adjusted R square for the equation with the I/B/E/S growth forecast is .667, compared to an adjusted R square of only .184 for the equation with the ACE forecast). Since stock prices reflect the decisions of individual investors to buy and sell securities, these data are also consistent with the view that more investors use the I/B/E/S growth estimates to forecast future growth when they make buy and sell decisions.

Historical Dividend Growth Rates

52. The GSA also reports DCF results for the RHCs using the five-year historical trend in dividends per share ("DPS") as the growth component in the DCF Model. Although the GSA rejects these results as being unreasonably low, they also conclude from these data that "[t]he historical results may also suggest another factor: the possible bias of investment analysts toward overestimation." [GSA Direct Case page 16]. This conclusion is unfounded. Rather than suggesting that the analysts' growth estimates are too high, the GSA's extremely low DCF results obtained using historical DPS growth rates simply reflect the decisions of the RHCs to reduce their dividend payout ratios over the last five years and the failure of historical data to indicate a company's future growth potential in a rapidly changing industry.

VI. Market Weighting

53. The GSA uses an average median growth forecast for the RHCs of 8.4 percent in their calculation. GSA's 8.4 percent median long-term growth forecast differs from the market-weighted average 9.1 percent ACE median long-term growth forecast noted above for two reasons. First, the GSA reports an 8 percent growth forecast for BellSouth instead of the currently reported ACE median growth forecast for BellSouth of 9 percent. Second, the GSA calculates a simple average of the median growth forecast for each RHC, rather than a market-

weighted average. Financial analysts generally use market value weighted average DCF results to reflect the fact that investors hold more of large companies in their portfolios than small companies. The GSA's use of equal weighting, rather than market value weighting, reduces their cost of equity estimate for the ILECs by at least an additional 34 basis points. Thus, the GSA's use of historical growth rates and simple, rather than market value weighting, causes them to underestimate the ILECs' cost of equity by at least 90 basis points (34 plus 56, see paragraph 45).

VII. DCF Model

54. The GSA's DCF results for the RHCs are based on the assumption that the RHCs pay dividends only at the end of each year. Since the RHCs pay dividends quarterly, and investors value the quarterly payment of dividends, the GSA's DCF results underestimate the RHCs' cost of equity. The GSA's underestimation of the RHCs' cost of equity can be demonstrated by recognizing that the GSA's DCF Model combines an annual dividend with a market price that necessarily includes investor's knowledge that dividends are paid quarterly. Since an investor attributes some value to the quarterly payment of dividends, a firm's stock price will be higher when it pays dividends quarterly than when it pays the same amount of dividends annually. Even though the GSA uses the higher price which reflects the quarterly payment of dividends, it does not similarly reflect quarterly dividends in calculating the dividend components of the DCF cost of equity. The GSA, therefore, creates a clear mismatch of data sets which causes it to understate the cost of equity capital for the RHCs.

55. The GSA's use of the Annual DCF Model for firms that pay dividends quarterly is inconsistent with financial theory and practice. Financial theory suggests that the present value of a stream of dividends depends on both the magnitude and the timing of the dividend

payments. Common sense would tell us the same. Since dividends are, in fact, paid quarterly, the GSA should have used a DCF Model that assumes quarterly dividend payments. Investors would certainly recognize the correct timing of dividend payments when using the DCF Model to value stocks. Thus, the Quarterly DCF Model provides the most accurate basis for valuing the dividend stream expected by the investor. In practice, investors recognize the correct timing of cash receipts when they use the DCF Model to value long-term bonds, mortgages, and other investments.

56. The GSA's DCF results are also based on the assumption that the risk proxy companies incur no flotation costs when they issue equity securities. The GSA's no-flotation-cost assumption is inconsistent with the reality that all firms which have sold securities in the capital markets have incurred some level of flotation costs, including underwriters' commissions, legal fees, and printing expenses. These costs are withheld from the proceeds of the stock sale or are paid separately and must be recovered over the life of the equity issue. Costs vary depending upon factors such as the size of the issue and the type of registration method used, but in general these costs range between three and five percent of the proceeds from the issue [see Clifford W. Smith, "Alternative Methods for Raising Capital," *Journal of Financial Economics* 5 (1977) 273—307]. In addition to these costs, for large equity issues (in relation to outstanding equity shares), there is likely to be a decline in price associated with the sale of shares to the public. On average, the decline due to market pressure has been estimated at two to three percent.[16] Thus, the total flotation cost, including both issuance expense and market pressure, could range anywhere from five to eight percent of the proceeds of an equity issue. I believe a combined five

[16] See Richard H. Pettway, "The Effects of New Equity Sales Upon Utility Share Prices," *Public Utilities Fortnightly*, May 10, 1984, 35—39.

percent allowance for flotation costs is a conservative estimate that should be used in applying the DCF Model in this proceeding.

57. A flotation cost adjustment is required whether or not a company is expected to issue new stock in the near future. Previously incurred flotation costs have not been expensed in previous proceedings; rather, they are a permanent cost associated with past issues of common stock. Just as an adjustment is made to the embedded cost of debt to reflect previously incurred debt issuance costs (regardless of whether additional bond issuances were made in the test year), so should an adjustment be made to the cost of equity regardless of whether additional stock was issued during the test year. An adjustment for flotation costs on equity is not meant to recover any cost that is properly assigned to prior years. In fact, an adjustment only allows the company to recover the current carrying costs associated with flotation expenses incurred at the time stock sales were made. The original flotation costs themselves will never be recovered, because the stock is assumed to have an infinite life.

58. The GSA's failure to include quarterly compounding and flotation costs causes the GSA to significantly underestimate the RHCs' cost of equity. The impact of excluding quarterly compounding and flotation costs on the GSA's DCF results for the RHCs is approximately 31 basis points.[17]

VIII. Risk

59. The GSA's Direct Case is based on the GSA's opinion that access services are offered in a low risk, near monopoly environment. On page 2, the GSA states:

> Unfortunately, the level of competition for interstate access services is still very low. The Common Carrier Bureau's Industry Analysis Division recently reported that notwithstanding the passage of the Telecommunications Act in February of

[17] The impact of excluding quarterly compounding and flotation costs on the DCF results for the S&P Industrials discussed in ¶72 would be less, approximately 18 basis points.

> 1996, Incumbent Local Exchange Carriers ("ILECs") still account for 96.8 percent of all local services revenues.

In citing this reference, the GSA fails to recognize that the interstate access and local exchange markets are not equivalent. The interstate access market has been open to full competition since the mid-1980's, while the local exchange market has only been open to full competition since the passage of the Telecommunications Act of 1996. As a result of the early opening of the interstate access market to full competition, and the strong economic incentive large customers have to avoid paying the portion of local loop costs that are allocated to interstate access, competition in the interstate access market is significantly more advanced than local exchange competition.

60. The GSA also fails to recognize that risk depends on investors' opinions about expected future levels of competition, not current levels of competition. Investors expect future levels of competition in the interstate access market to be significantly greater than current levels of competition because: (1) interstate access services are priced above incremental cost in order to recover the 25 percent of the cost of the local loop that is allocated to interstate access services; (2) large customers of interstate access services can avoid paying the 25 percent local loop allocation either by purchasing interstate access services from alternative providers or building their own facilities to link their PBXs with interexchange carriers' POPs; (3) facilities-based competitive access providers have spent billions of dollars to build facilities to bypass the ILECs' interstate access services; (4) the investment required to enter the interstate access market as a facilities-based provider is significantly less than the investment required to enter the local exchange market as a facilities-based provider; (5) a large proportion of the ILECs' access revenues come from a relatively small percentage of their access customers; and (7) competitors now have collocation agreements in central offices serving a majority of the ILECs' most

profitable customers.[18] These considerations force investors to project that the ILECs are likely to lose a significant portion of their interstate access revenues over the next five to ten years. Indeed, recent data indicate that CLECs added more new business lines than the RBOCs during 1998,[19] and analysts are forecasting dramatic losses in the ILECs' share of the access market. PaineWebber forecasts that CLECs will capture 40 to 50 percent of business access lines by 2007,[20] and with respect to the residential market, a customer survey conducted for Morgan Stanley indicates that "AT&T would take 42 percent share in a competitive market for local and long distance residential customers."[21]

61. Investors' views of the risk of interstate access services are also based on their recognition that competitive local exchange carriers are spending billions of dollars to bypass the ILECs' interstate access services. Within the past two years, WorldCom paid $14 billion for one CLEC, MFS, $2.9 billion for another CLEC, Brooks Fiber; and $37 billion for MCI, at least in part because WorldCom placed a high valuation on MCI's interstate access facilities. As a result of WorldCom's recent investments, MCI WorldCom has competitive local access networks in place in more than 100 cities nationwide, and financial analysts indicate that MCI WorldCom has an unbeatable competitive advantage in the market for business customers because of its national and international coverage. Business customers prefer to obtain a bundle of services

[18] Michael R. McCullough recently testified that "93 percent of Bell Atlantic's access demand come[s] from only 20 percent of its central offices." Mr. McCullough also noted that "competitors have collocated in approximately 370 central offices throughout the Bell Atlantic region," which gives them "access to about 90 percent of Bell Atlantic's special access demand." See Affidavit of Michael R. McCullough, *In the Matter of Petition of Bell Atlantic Telephone Companies for Forbearance from Regulation as Dominant Carriers in Delaware; Maryland; Massachusetts; New Hampshire; New Jersey; New York; Pennsylvania; Rhode Island; Washington, D. C.; Vermont; and Virginia*, filed January 20, 1999, ¶9 and ¶15.

[19] "CLECs Surpass Bells in Net Business Line Additions for First Time," Salomon Smith Barney, May 6, 1998.

[20] "Telecommunications Services," PaineWebber, July 27, 1998, p. 7.

[21] "Telecommunications Services," Morgan Stanley Dean Witter, August 11, 1997, p. 3.

from a single provider that can provide services worldwide. No ILEC can approach the level of coverage of MCI WorldCom:

> WCOM stands alone as the only company that owns U.S. local and long-distance assets, undersea cable assets, the most extensive and highest-capacity global IP backbone and international in-country network assets.... WorldCom can do local for an MCI business customer as well as a Bell can, but no Bell can remotely match WorldCom's ability to serve an MCI business customer for global or national network services....
>
> WCOM is the only company in the telecom world that has domestic U.S. local and long-distance facilities, international local and long-distance facilities, and the ability to connect those dots via broadband undersea fiber with a global 1,000-plus point-of-presence Internet backbone overlaying this network fabric.[22]

62. AT&T has also invested billions of dollars to enter the interstate access market. AT&T paid $11.3 billion to purchase Teleport, the largest CLEC in the industry at the time, and paid $48 billion for TCI, the second largest multiple systems cable operator in the country. Investors are also aware that AT&T is the largest provider of cellular service in the U.S., and potentially the largest provider of PCS services in the country. Furthermore, investors are aware that AT&T has closed an agreement with Time Warner, the nation's largest cable company, to upgrade Time Warner's cable network to provide telephony in a joint venture with AT&T, and that AT&T has closed or is near to closing deals with the next three largest cable providers. AT&T's ownership of TCI and its agreements with the other large cable companies provide AT&T competitive access to two-thirds of the cable households in the United States. AT&T's national and international footprints also give AT&T a significant competitive advantage over the ILECs in the access market.

[22] "MCI WorldCom, Inc.," Grubman, J. B., Salomon Smith Barney, October 9, 1998.

63. In addition to traditional wireline competition for interstate access, investors are aware that Internet Service Providers ("ISPs") are rapidly developing the technology to provide voice telecommunications service over Internet protocol networks. The cost of voice telecommunications from ISPs is significantly less than the cost of voice services from ILECs because the ISPs do not have to pay access charges for either originating or terminating calls. The potential competition from the ISPs threatens the ILECs' entire investment in wireline access facilities.

64. Finally, investors are aware that AT&T and other carriers have developed marketing strategies for wireless services that encourage customers to make their wireless phones their "only phones." In fact, AT&T and others have reduced the price of wireless service to the point that it is becoming an attractive alternative to the ILECs' wireline service. One of the major advantages of wireless services is that wireless services allow customers to bypass the ILECs' access services. A recent Deutsche Bank Research report states that "wireless telephones are becoming a credible wireline bypass vehicle" and a "wireline replacement product."[23] Other analysts predict that a fourth of current wireline customers will shift exclusively to wireless by 2002; and by 2007, they predict that half of current wireline customers will shift exclusively to wireless.[24]

65. In summary, the GSA's risk assessment is naive at best, and misleading at worst. A sound analysis of the risk of providing interstate access indicates that interstate access is among the riskiest services offered by the ILECs.

[23] "Investing in a World Without Wires," Deutsche Bank Research, November 13, 1998, p. 2.
[24] "The Communications Battleground," p. R4, *The Wall Street Journal Special Report on Telecommunications,* September 11, 1997.

IX. Independent Estimate of the ILECs' Weighted Average Cost of Capital

Proxy Group

66. As part of my evaluation of GSA's Direct Case, I have conducted my own analysis of the ILECs' weighted average cost of capital using a market interest rate, a market value capital structure, and a market-based measure of the ILECs' cost of equity. Given the difficulties described above of applying the DCF Model to telecommunications companies, my analysis uses the S&P Industrials as the best proxy group for measuring the ILECs' weighted average cost of capital.

67. Because the interstate access market is highly competitive, and financial analysts expect the access market to be even more competitive within the next several years, the S&P Industrials are a logical proxy for the risks of investing in the ILECs' interstate access services. The S&P Industrials are a well-known sample of publicly-traded competitive companies whose risk, on average, approximates the risk of providing interstate access services in a competitive market. Furthermore, the S&P Industrials as a group are subject to significantly less industry restructuring than the RHCs; and thus the assumptions of the DCF Model apply reasonably well to the S&P Industrials.

Cost of Debt

68. I measure the market cost of debt investment for my proxy group of S&P Industrials using the 6.68 percent yield to maturity on Moody's A-rated industrial bonds for December 1998, as reported by Moody's Investors Service.[25] This estimate is conservative because it does not include the flotation costs that must be paid to issue the debt securities required to finance local exchange facilities.

[25] My proxy group of S&P Industrials have an average bond rating of A.

Market Value Capital Structure

69. To determine an appropriate target capital structure for the ILECs, I examine data for three groups of companies: my proxy group of S&P Industrials, the local exchange companies included in the S&P Industrials, and the IXCs. I examine the most current available data for these groups, and also review data for the past five years. In all periods after 1994, the average market value capital structure for any group contains no more than 25 percent debt, and no less than 75 percent equity. More typically, the capital structure for these groups contains no more than 20 percent debt and at least 80 percent equity.

70. The specific average market value capital structures of the S&P Industrials, the local exchange companies in the S&P Industrials, and the IXCs are shown on Schedule 4. As shown there, the average market-based capital structure of the S&P industrials at September 30, 1998, contains 17.9 percent debt and 82.1 percent equity. The average market-based capital structure of the S&P Industrials for the five-year period beginning December 31, 1994, through September 30, 1998,[26] contains 19.90 percent debt and 80.10 percent equity. The average market-based capital structure of the local exchange companies in the S&P Industrials at September 30, 1998, contains 18.4 percent debt and 81.6 percent equity; and their five-year average market-based capital structure contains 21.0 percent debt and 79.0 percent equity. The major interexchange carriers employ less debt and more equity than the local exchange companies. The IXCs' average market-based capital structure at September 30, 1998, contains 12.8 percent debt and 87.2 percent equity, while their five-year average market-based capital structure contains 16.3 percent debt and 83.7 percent equity. Thus, the average market-based capital structure of the local exchange companies in the S&P Industrials is approximately equal

[26] Data for year-end 1998 are not yet available.

to the average market-based capital structure of the S&P Industrials, while the IXCs average market-based capital structure contains less debt and more equity than that of the local exchange companies.[27]

71. Based on my examination of these data, I recommend, as a lower bound, that a target market value capital structure containing no more than 25 percent debt and no less than 75 percent equity be used to calculate the ILECs' weighted average cost of capital. As an upper bound, I recommend that a target capital structure containing 20 percent debt and 80 percent equity be used to calculate the ILECs' weighted average cost of capital. Since these capital structures contain significantly less equity than the current actual market value capital structures of all the company groups I have reviewed, my recommended range of capital structure weights is conservative.

Cost of Equity

72. I measure the market cost of an equity investment in the S&P Industrials by applying the DCF Model to the S&P Industrials.[28] Since the S&P Industrials are a well-known sample of publicly-traded competitive companies whose risk, on average, approximates the risk of providing interstate access service in a competitive market, I believe the S&P Industrial group is a good proxy for the risks of investing in the facilities required to provide interstate access service. Applying the DCF Model to the S&P industrials, I obtain a market-weighted average

[27] I also calculated capital structures for local exchange operating companies using the capital market data described on Schedule 3. As shown there, an average market value capital structure for the local exchange companies containing 20 percent debt and 80 percent equity is reasonable.

[28] In applying the DCF Model to the S&P Industrials, I included in the DCF analysis only those companies in the S&P Industrial group which have a reported stock price, pay a dividend, have a positive growth rate, have at least 3 analysts' long-term growth estimates, and have at least one common share outstanding. To be conservative, I also eliminated those 25 percent of companies with the highest and lowest DCF results. The weighted average DCF result for all four quartiles is 15.51 percent, while the weighted average DCF result for 2nd and 3rd quartiles shown on Schedule 5 is 14.77 percent. Elimination of the 1st and 4th quartiles of the S&P Industrials has a negligible effect on the market value capital structure.

DCF cost of equity of 14.77 percent for the S&P Industrials (see Schedule 5).

73. I estimate the ILECs' overall weighted average cost of capital to be in the range 12.7 percent to 13. 2 percent. The 12.7 percent estimate is based on a 6.68 percent market cost of debt, a target market value capital structure containing 25 percent debt and 75 percent equity, and a cost of equity of 14.77 percent (see Table 3).

Table 3
Weighted Average Cost of Capital Using 25/75 Capital Structure

Source of Capital	Cost Rate	Percent	Weighted Cost
Debt	6.68%	25.00%	1.67%
Equity	14.77%	75.00%	11.08%
WACC			12.75%

Using the same costs of debt and equity and a target capital structure containing 20 percent debt and 80 percent equity, I estimate the ILECs' weighed average cost of capital to be 13.2 percent, as shown below.

Table 4
Weighted Average Cost of Capital Using 20/80 Capital Structure

Source of Capital	Cost Rate	Percent	Weighted Cost
Debt	6.68%	20.00%	1.34%
Equity	14.77%	80.00%	11.82%
WACC			13.15%

X. Low-End Adjustment Mechanism

74. AT&T's filing in the initial round of this proceeding focused entirely on AT&T's recommendation to eliminate the low-end adjustment mechanism of price cap regulation. AT&T defends this recommendation on the grounds that: (1) the low-end adjustment mechanism rewards inefficient carriers; (2) there are other mechanisms to assure a carrier's financial viability; and (3) the low-end adjustment mechanism relies on a rate-of-return framework that

the Commission has criticized in previous price cap orders. None of AT&T's arguments provides a sufficient basis for eliminating the low-end adjustment mechanism.

75. AT&T's first argument, that the low-end adjustment mechanism rewards inefficient carriers, fails to recognize that price cap regulation provides very strong incentives for companies to be efficient. As a result, inefficiency is likely to be a rare phenomenon, and low earnings are more likely to signal a problem with the estimated productivity factor than a problem with inefficient behavior. As the Commission recognized when it initially established the low-end adjustment mechanism, a company's low earnings "may be attributable to an error in the productivity factor, the application of an industry-wide factor to an individual LEC, or unforeseen circumstances in a particular area of the country."[29]

76. In considering AT&T's arguments, the Commission should recognize that the price cap LECs' obligation to provide service to all customers imposes restrictions on the price cap LECs that are absent from competitors in other industries. Competitors in other industries can improve their earnings by choosing to serve only the most profitable customers, while the price cap LECs must serve all customers, whether profitable or not. Because the price cap LECs are required to serve as the carrier of last resort, it is in the country's best interest to support the price cap LECs' access to the capital markets. By providing a temporary backstop for the price cap LECs' earnings, the low-end adjustment mechanism protects the price cap LECs' bond ratings, reduces the price cap LECs' cost of debt, and supports the price cap LECs' provision of high quality telecommunications services to all customers.

77. AT&T's second argument, concerning the existence of alternative mechanisms for maintaining a carrier's financial viability, also misses the point. The low-end adjustment

[29] Policy and Rules Concerning Rates for Dominant Carriers, CC Docket No. 87-313, Second Report and Order, FCC 90-314, released October 4, 1990, ¶147.

mechanism is different from the alternatives mentioned by AT&T: the low-end adjustment mechanism is certain and low cost, and provides only temporary relief. The certainty of the low-end adjustment mechanism provides some assurance to investors that the price cap LECs will not experience financial ruin as a result of error in the specification of price caps. Furthermore, investors are assured that the price cap LECs will not have to expend significant resources in regulatory proceedings. Investors also recognize that the price cap LECs continue to have a strong incentive to improve productivity, because any rate increases are temporary.[30] The alternative options for special regulatory relief cited by AT&T are less effective than the low-end adjustment mechanism because the price cap LECs would incur additional expenses in seeking regulatory relief, there are significant delays in the regulatory process, and the outcome of regulatory proceedings is highly uncertain.

78. AT&T's final argument, that the low-end adjustment mechanism relies on a rate-of-return framework, is incongruous with AT&T's vigorous pleadings in price cap proceedings that the price cap LECs' rates should be reduced, and their productivity factor increased, because their rates of return were too high. The rate-of-return argument also fails to recognize that the low-end adjustment mechanism cannot be used to grant a price cap LEC a permanent increase in its interstate access rates, since the increase is temporary. In addition, since rates are only adjusted when a company's rate of return is 100 basis points below the benchmark, there is little danger that the company would be able to use the low-end adjustment formula to earn a return greater than its cost of capital.

[30] Under the Commission's rules, any rate increases granted through the low-end adjustment mechanism must be reversed the following year.

Impact of Extraordinary Write Offs on Total Equity
of Telecommunications Holding Companies
(Millions of $)[31]

Company	1995—1993 Total Adjustments[32]	1995 Total Equity	Adjustments as Percent of Equity
Ameritech	2,234.0	7,014.5	32%
Bell Atlantic	2,150.0	6,683.6	32%
BellSouth	2,718.0	11,825.0	23%
NYNEX	2,919.4	6,079.2	48%
Pacific Telesis	5,084.0	2,190.0	232%
SBC	4,946.5	6,255.8	79%
U S West	3,123.0	7,948.0	39%
GTE	4,682.0	6,871.0	68%
SNET	951.3	352.9	270%
TOTAL	28,808.2	55,220.0	52%

[31] Data is taken from Company Annual Reports.

[32] This is a conservative estimate of the impact of extraordinary one-time write offs on reducing the book value of the equity of these telecommunications companies, since this estimate includes only write offs for discontinuance of regulatory accounting and OPEB taken during 1993, 1994, and 1995, and does not include the large extraordinary write offs taken for OPEB prior to 1993 by Ameritech, Bell Atlantic, BellSouth, NYNEX, U S West, and GTE.

Market Value Capital Structures
of the RHCs, the Local Exchange Companies in the S&P Industrials,[33]
the S&P Industrials, and the IXCs[34]
at September 30, 1998[35]

Company	Total Debt	Total Equity	Percent Debt	Percent Equity
RHCs	63,950.20	315,586.58	16.8%	83.2%
Local Exchange Cos.	85,885.31	381,550.88	18.4%	81.6%
S&P Industrial Group	545,967.26	2,511,255.36	17.9%	82.1%
IXCs	28,112.00	191,916.14	12.8%	87.2%
Average	723,914.77	3,400,308.96	17.6%	82.4%

[33] RHCs, GTE, and ALLTEL
[34] AT&T and MCI WorldCom
[35] Data from Compustat, January 1999.

Market Value Capital Structures
Of Local Exchange Carriers[36]

Item	All Reporting Local Exchange Companies	Regional Bell Operating Companies	Other Reporting Local Exchange Companies
Depreciation & Amortization Expense	21,460,189	16,758,832	4,701,357
Operating Income Taxes	6,724,781	4,961,696	1,763,085
Non-Operating Income Taxes	274,343	150,690	123,653
Interest and Related Items	3,909,525	3,084,808	824,717
Net Income	11,503,863	7,821,894	3,681,971
EBITDA	43,872,701	32,777,920	11,094,783
EBITDA X 7.0	307,108,907	229,445,440	77,663,481
EBITDA X 8.0	350,981,608	262,223,360	88,758,264
Notes Payable	7,717,756	5,490,769	2,226,987
Current Maturities – Long-Term Debt	1,688,398	1,400,480	287,918
Current Maturities – Capital Leases	124,894	119,658	5,236
Long-Term Debt	44,772,218	35,141,010	9,631,208
Total Debt	54,303,266	42,151,917	12,151,349
Percent Debt at 7X EBITDA	17.7%	18.4%	15.6%
Percent Debt at 8X EBITDA	15.5%	16.1%	13.7%
Percent Debt at 85% of 7X EBITDA	20.8%	21.6%	18.4%
Percent Debt at 85% of 8X EBITDA	18.2%	18.9%	16.1%

[36] Data from FCC Common Carrier Bureau, Statistics of Communications Common Carriers, 1997 edition, pp. 40—44.

Capital Structure of the S&P Industrials[37]
1994—1998

	Total Debt	Market Equity	Percent Debt	Percent Equity
Dec-94	378,703.516	1,117,631.499	25.3%	74.7%
Dec-95	420,973.915	1,480,604.666	22.1%	77.9%
Dec-96	447,725.769	1,765,944.195	20.2%	79.8%
Dec-97	477,276.537	2,265,306.177	17.4%	82.6%
Sep-98	545,967.260	2,511,255.364	17.9%	82.1%
5-Yr. Ave.	2,270,646.997	9,140,741.900	19.9%	80.1%

Capital Structure of Local Exchange Companies in the S&P Industrials[38]
1994—1998

	Total Debt	Market Equity	Percent Debt	Percent Equity
1994	54,437.03	147,114.10	27.0%	73.0%
1995	56,667.80	205,240.90	21.6%	78.4%
1996	57,155.44	198,006.91	22.4%	77.6%
1997	78,740.20	317,473.72	19.9%	80.1%
1998	85,885.31	381,550.88	18.4%	81.6%
5-Yr.Ave.	332,885.77	1,249,386.51	21.0%	79.0%

Capital Structure of the IXCs, AT&T and WCOM
1994—1998

	Total Debt	Market Equity	Percent Debt	Percent Equity
1994	25,818.00	81,945.53	24.0%	76.0%
1995	31,615.28	110,153.14	22.3%	77.7%
1996	15,169.01	93,485.74	14.0%	86.0%
1997	17,361.81	127,087.13	12.0%	88.0%
1998	28,112.00	191,916.14	12.8%	87.2%
5-Yr. Ave.	118,076.10	604,587.69	16.3%	83.7%

[37] Data from Compustat, February 1999.
[38] RHCs, GTE, and ALLTEL

Discounted Cash Flow Analysis of the S&P Industrial Group

Name	Dec. 98 Average Price	Dividend	IBES Mean Growth	Cost of Equity
Abbott Laboratories	48.031	0.15	12.6%	14.09%
Adobe Systems Inc	42.500	0.05	15.6%	16.17%
Aetna Inc	79.594	0.20	14.7%	15.92%
Air Products & Chemicals Inc	37.594	0.17	12.0%	14.15%
Albertsons Inc	62.125	0.17	13.5%	14.81%
Allegheny Teledyne Inc	19.625	0.16	12.4%	16.31%
Allergan Inc	62.563	0.13	13.8%	14.80%
AlliedSignal Inc	42.656	0.15	14.1%	15.80%
ALLTEL Corp	56.406	0.29	12.2%	14.65%
Amerada Hess Corp	51.750	0.15	13.7%	15.09%
American Home Products Corp	52.875	0.22	12.6%	14.54%
AMP Inc	50.250	0.27	11.8%	14.35%
Apache Corp	23.406	0.07	13.0%	14.43%
Armstrong World Inds Inc	63.500	0.48	10.4%	13.96%
Atlantic Richfield Co	65.625	0.71	8.1%	13.13%
Automatic Data Processing	38.360	0.07	14.7%	15.52%
Avery Dennison Corp	44.531	0.21	13.1%	15.36%
Bard (C.R.) Inc	47.750	0.19	11.7%	13.58%
Barrick Gold Corporation	19.250	0.07	14.6%	16.24%
Bausch & Lomb Inc	56.406	0.26	13.4%	15.62%
Baxter International Inc	63.813	0.29	12.5%	14.67%
Becton Dickinson & Co	41.500	0.07	13.9%	14.74%
Bemis Co	36.406	0.22	13.5%	16.42%
Bestfoods	54.750	0.25	11.5%	13.62%
Biomet Inc	37.906	0.03	15.0%	15.38%
Black & Decker Corp	54.844	0.12	15.1%	16.16%
Bristol Myers Squibb	126.375	0.39	13.0%	14.48%
Browning-Ferris Inds	29.406	0.19	11.0%	14.05%
Brunswick Corp	22.000	0.13	12.3%	15.01%
Burlington Resources Inc	35.094	0.14	13.7%	15.59%
Campbell Soup Co	55.906	0.21	12.5%	14.29%
Caterpillar Inc	46.656	0.30	10.2%	13.21%
Clorox Co/De	114.156	0.32	12.9%	14.24%
Colgate-Palmolive Co	87.375	0.28	13.7%	15.21%
Columbia/HCA Hlthcr	24.625	0.02	13.1%	13.49%
Conagra Inc	31.125	0.18	12.2%	14.92%
Cooper Industries Inc	48.469	0.33	11.0%	14.22%
Crane Co	28.688	0.07	12.7%	13.82%
Cummins Engine	34.875	0.28	9.6%	13.28%
Dana Corp	38.844	0.29	11.3%	14.84%
Dayton Hudson Corp	48.750	0.09	14.6%	15.49%
Deere & Co	32.031	0.22	10.5%	13.73%
Deluxe Corp	35.906	0.37	8.3%	13.08%
Donnelley (R R) & Sons Co	42.656	0.21	12.1%	14.44%
Dover Corp	34.594	0.11	12.8%	14.25%
Dow Chemical	91.501	0.87	8.7%	13.12%
Dow Jones &Co Inc	47.281	0.24	11.4%	13.80%
Eastman Kodak Co	72.313	0.44	11.2%	14.08%
Ecolab Inc	34.156	0.10	14.0%	15.34%
EG&G Inc	27.281	0.14	10.7%	13.11%

Name	Dec. 98 Average Price	Dividend	IBES Mean Growth	Cost of Equity
Electronic Data Systems Corp	44.500	0.15	13.5%	15.12%
Emerson Electric Co	62.313	0.30	11.7%	13.94%
Engelhard Corp	19.219	0.10	11.0%	13.45%
First Data Corp	28.406	0.02	13.6%	13.94%
Fluor Corp	42.219	0.20	12.0%	14.25%
Fort James Corp	37.344	0.15	12.8%	14.72%
Fortune Brands Inc	32.719	0.21	13.0%	16.08%
Gannett Co	64.313	0.20	11.8%	13.27%
General Electric Co	95.063	0.30	13.4%	14.91%
General Mills Inc	76.501	0.55	9.6%	12.96%
Harnischfeger Industries Inc	9.219	0.10	10.8%	15.95%
Harris Corp	36.625	0.22	11.4%	14.24%
Heinz (H J) Co	56.219	0.34	10.9%	13.77%
Hercules Inc	29.125	0.27	11.0%	15.40%
Hewlett-Packard Co	65.813	0.16	15.2%	16.38%
Honeywell Inc	75.782	0.28	13.0%	14.77%
Illinois Tool Works	59.813	0.15	14.5%	15.71%
Ingersoll-Rand Co	44.188	0.15	12.8%	14.42%
Interpublic Group Of Cos	72.765	0.15	15.0%	16.00%
Intl Business Machines Corp	176.093	0.22	13.5%	14.10%
Intl Flavors & Fragrances	43.313	0.37	10.0%	14.01%
ITT Industries Inc	38.500	0.15	11.6%	13.44%
Johnson & Johnson	80.282	0.25	13.2%	14.69%
Johnson Controls Inc	56.719	0.23	14.0%	15.96%
Jostens Inc	25.031	0.22	10.3%	14.44%
Kimberly-Clark Corp	53.031	0.25	13.0%	15.26%
Knight-Ridder Inc	50.438	0.20	11.2%	13.07%
Limited Inc	27.438	0.13	12.8%	15.07%
Liz Claiborne Inc	31.813	0.11	13.7%	15.40%
Mallinckrodt Inc	31.188	0.17	11.3%	13.80%
Masco Corp	28.031	0.11	13.7%	15.59%
May Department Stores Co	59.688	0.32	10.8%	13.30%
Maytag Corp	58.875	0.18	12.7%	14.16%
McDonalds Corp	72.782	0.09	13.8%	14.39%
McGraw-Hill Companies	96.313	0.39	12.1%	14.02%
Merck & Co	151.625	0.54	13.7%	15.41%
Milacron Inc	19.625	0.12	11.9%	14.81%
Minnesota Mining & Mfg Co	75.625	0.55	10.1%	13.51%
Morton International Inc	26.281	0.12	11.9%	14.07%
Nalco Chemical Co	31.688	0.25	9.7%	13.39%
National Service Inds Inc	35.500	0.31	12.3%	16.49%
New York Times Co -Cl A	32.969	0.10	12.1%	13.47%
Nike Inc -Cl B	38.625	0.12	14.7%	16.21%
Nordstrom Inc	34.656	0.08	14.2%	15.31%
Nucor Corp	41.781	0.12	14.1%	15.49%
Occidental Petroleum Corp	18.500	0.25	9.2%	15.55%
Omnicom Group	54.031	0.13	15.2%	16.33%
Parker-Hannifin Corp	32.313	0.15	10.8%	12.98%
Penney (J C) Co	51.250	0.55	11.2%	16.26%
Pep Boys	14.125	0.07	14.2%	16.43%
Pepsico Inc	39.125	0.13	14.4%	16.01%
Pharmacia & Upjohn Inc	54.125	0.27	12.1%	14.47%
Phillips Petroleum	41.938	0.34	9.7%	13.49%

Name	Dec. 98 Average Price	Dividend	IBES Mean Growth	Cost of Equity
Pioneer Hi-Bred Internationl	28.375	0.09	15.1%	16.60%
Pitney Bowes Inc	61.406	0.23	13.0%	14.75%
Polaroid Corp	19.938	0.15	10.6%	14.15%
Potlatch Corp	37.375	0.44	7.8%	13.18%
PPG Industries Inc	58.188	0.36	10.3%	13.20%
Praxair Inc	34.813	0.13	13.1%	14.82%
Procter & Gamble Co	88.719	0.25	13.0%	14.36%
Quaker Oats Co	60.219	0.29	10.9%	13.13%
Ralston Purina Co	32.406	0.10	11.7%	13.16%
Raychem Corp	33.656	0.08	15.0%	16.16%
Rite Aid Corp	45.563	0.11	15.4%	16.55%
Rockwell Intl Corp	48.469	0.26	11.9%	14.40%
Rubbermaid Inc	30.500	0.16	13.3%	15.82%
Russell Corp	21.250	0.14	12.0%	15.14%
Sara Lee Corp	28.063	0.12	13.3%	15.27%
Schering-Plough	54.625	0.11	15.2%	16.18%
Seagram Co Ltd	36.094	0.17	14.0%	16.21%
Sears Roebuck & Co	43.563	0.23	12.3%	14.82%
Sherwin-Williams Co	28.344	0.11	12.0%	13.88%
Sigma-Aldrich	30.125	0.07	13.0%	14.11%
Snap-On Inc	33.656	0.22	11.3%	14.40%
Springs Industries	39.281	0.33	9.2%	13.11%
Sprint Fon Group	78.469	0.25	13.4%	14.93%
Stanley Works	29.000	0.22	11.5%	15.02%
Sysco Corp	27.281	0.09	13.1%	14.59%
Tandy Corp	39.813	0.10	15.0%	16.22%
Tektronix Inc	27.000	0.12	13.0%	15.13%
Texaco Inc	54.375	0.45	9.2%	13.06%
Textron Inc	74.000	0.29	14.7%	16.57%
Thomas & Betts Corp	43.188	0.28	12.9%	16.01%
Time Warner Inc	57.375	0.05	14.7%	15.08%
Times Mirror Company	57.438	0.18	14.0%	15.51%
Tribune Co	63.594	0.17	12.8%	14.08%
Unilever	79.532	0.28	11.2%	12.87%
Union Pacific Resources Grp	9.781	0.05	13.8%	16.27%
United Technologies Corp	104.250	0.36	13.0%	14.65%
UST Inc	34.125	0.41	9.8%	15.39%
Walgreen Co	56.219	0.06	15.6%	16.14%
Wal-Mart Stores	77.094	0.08	14.6%	15.09%
Waste Management Inc	43.688	0.01	16.0%	16.11%

Wendy's International Inc	20.375	0.06	15.0%	16.43%
Whirlpool Corp	54.594	0.34	10.2%	13.12%
Winn-Dixie Stores Inc	43.063	0.26	10.4%	13.18%
Wrigley (Wm) Jr Co	86.063	0.20	12.1%	13.20%
Weighted Average				14.77%

Source: Standard & Poor's Compustat Database February 1999. Price is average of December 1998 high and low prices. Quarterly dividend obtained from the indicated annual dividend rate as reported by Compustat , divided by 4. I/B/E/S growth rate is the December mean estimate of the long-term growth rate as reported by Compustat.

Notes: In applying the DCF Model to the S&P Industrials, I included in the DCF analysis only those companies in the S&P Industrial group which have a reported stock price, pay a dividend, have a positive growth rate, have at least 3 analysts' long-term growth estimates, and have at least one common share outstanding. To be conservative, I also eliminated those 25 percent of companies with the highest and lowest DCF results. The weighted average DCF result for all four quartiles was 15.51 percent, while the weighted average DCF result for 2nd and 3rd quartiles shown on Schedule 5 is 14.77 percent. Elimination of the 1st and 4th quartiles of the S&P Industrials had a negligible effect on the market value capital structure.

Notation:

d_0	=	Quarterly Dividend (indicated annual dividend divided by 4).
P_0	=	Average of the monthly high and low stock prices December 1998.
FC	=	Flotation costs expressed as a percent of gross proceeds (5 percent).
g	=	I/B/E/S mean forecast of future earnings growth December 1998.
k	=	Cost of equity using the quarterly version of the DCF Model as shown by the formula below:

$$k = \left[\frac{d_0(1+g)^{\frac{1}{4}}}{P_0(1-FC)} + (1+g)^{\frac{1}{4}} \right]^4 - 1$$

STATE OF NORTH CAROLINA)
)
COUNTY OF Durham)

James H. Vander Weide, being first duly sworn, deposes and says that he has read the foregoing affidavit of James H. Vander Weide, and that the matters and things set forth therein are true and correct to the best of his knowledge, information, and belief.

James H. Vander Weide
James H. Vander Weide

Subscribed and sworn to before me this 11 day of March, 1999.

Carol H Lowans
Notary Public In and For the State of North Carolina

My commission expires on 12-2-2001.

CERTIFICATE OF SERVICE

I hereby certify that on this 16th day of March, 1999, copies of the foregoing "Response to Direct Case and Reply Comments of Bell Atlantic" were sent by first class mail, postage prepaid, to the parties on the attached list.

Jennifer L. Hoh

* Via hand delivery.

Warren Firschein
Federal Communications Commission
Common Carrier Bureau
Accounting Safeguards Division
2000 L Street, N.W.
Room 257
Washington, DC 20554
(with cover letter and diskette)

ITS*
1919 M Street, NW
Washington, DC 20554

(with cover letter and diskette)