ORIGINAL

AT&T

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September 2, 1998

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

RE: Docket No. 980696-TP

Dear Mrs. Bayo:

Enclosed for filing in the above referenced dockets on behalf of AT&T of the Southern States, Inc.'s (AT&T) and MCI Telecommunications Corporation is the Rebuttal Testimony of Catherine Petzinger, John Hirshleifer, Michael Majoros, Art Lerma, and Don Wood/Brian Pitkin. Please note that the Rebuttal Exhibit CEP-1 attached to Catherine Petzinger's Rebuttal Testimony may contain proprietary confidential business information and is being filed separately in accordance with Rule 25-24.006(5), Florida Administrative Code.

Copies of the foregoing are being served on all parties or record in accordance with the attached Certificate of Service. Thank you for your assistance in this matter.

Sincerely,

Tracy Hatch

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BEFORE

THE FLORIDA PUBLIC SERVICE COMMISSION

ORIGINAL

DOCKET NO. 980696-TP

REBUTTAL TESTIMONY

OF

JOHN I. HIRSHLEIFER

ON BEHALF OF

AT&T COMMUNICATIONS OF THE SOUTHERN STATES, INC.

AND

MCI TELECOMMUNICATIONS CORPORATION

SEPTEMBER 2, 1998

REBUTTAL TESTIMONY OF

JOHN I. HIRSHLEIFER

ON BEHALF OF AT&T COMMUNICATIONS

OF THE SOUTHERN STATES, INC

AND

MCI TELECOMMUNICATIONS CORPORATION

DOCKET NO. 980696-TP

Q. PLEASE STATE YOUR FULL NAME AND OCCUPATION.

A. My name is John I. Hirshleifer and my business address is FinEcon, 10877 Wilshire Blvd., Los Angeles, California 90024. I am Vice President and Director of Research of FinEcon, a firm which provides financial economic consulting services to corporations, law firms and government agencies.

Q. ARE YOU THE SAME JOHN HIRSHLEIFER WHO PREVIOUSLY SUBMITTED PREPARED DIRECT TESTIMONY ON BEHALF OF AT&T COMMUNICATIONS OF THE SOUTHERN STATES, INC. AND MCI TELECOMMUNICATIONS CORPORATION IN THIS PROCEEDING?

A. Yes, I am.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my rebuttal testimony is to comment on BellSouth's, and Sprint/United and Sprint/Centel's[1], proposal to adopt a 11.25% cost of capital as supported by Dr. Randall S. Billingsley, BellSouth Telecommunications' ("BellSouth") cost of capital expert witness. I will also provide rebuttal to the testimony of Dr. James Vander Weide, who advocates an overall 12.65% cost of capital for GTE.

Q. WHAT IS YOUR VIEW OF THE COST OF CAPITAL ESTIMATE SUBMITTED IN THIS PROCEEDING ON BEHALF OF BELLSOUTH, SPRINT AND GTE?

A. I believe that the 11.25% cost of capital advocated by BellSouth and Sprint, and the 12.65% cost of capital advocated by GTE are far in excess of the forward-looking cost of capital for the provision of network elements or universal service, and are inconsistent with publicly-available cost of capital estimates by parties outside the context of this proceeding.

Q. IS THE 11.25% RATE ADVOCATED BY BELL SOUTH FORWARD-LOOKING?

A. No. It was determined by the FCC in 1990. The FCC stated in Paragraph 250.(4) of its May 8, 1997 Universal Service Order that:

"... the cost of debt has decreased since we last set the authorized rate of return. The reduction in the cost of borrowing caused the Common Carrier

Bureau to institute a preliminary inquiry as to whether the currently authorized federal rate of return is too high, given the current marketplace cost of equity and debt. We will reevaluate the cost of capital as needed to ensure that it accurately reflects the market situation for carriers." Pursuant to Paragraph 250.(4), the Florida Commission is free to use a state-prescribed rate which can be based on more forward-looking data.

Q. DR. BILLINGSLEY TESTIFIED THAT HE HAD PERFORMED INDIRECT TESTS OF REASONABLENESS IN SUPPORT OF THE 11.25% COST OF CAPITAL. DO YOU BELIEVE THAT DR. BILLINGSLEY'S TWO "TESTS OF REASONABLENESS" ARE PERSUASIVE?

A. No. They are mathematically self-fulfilling: i.e., they assume the desired conclusion. If you take the 11.25% cost of capital and assume that it is correct (which there is no reason to do), and you assume Dr. Billingsley's cost of debt estimate is correct, and you assume that historical or previously-allowed capital structures are correct, then you have to get a high implied cost of equity. However, this Commission does not have to assume that 11.25% is the correct cost of capital *a priori*.

Q. DR. BILLINGSLEY HAS TESTIFIED THAT TELEPHONE HOLDING COMPANIES ARE NOT ACCURATE PROXIES FOR BELLSOUTH. THEREFORE, HE CALCULATES A DCF COST OF EQUITY ON A

SAMPLE OF COMPANIES DERIVED BY A STATISTICAL CLUSTER ANALYSIS. DO YOU AGREE WITH HIS PREMISE AND APPROACH?

A. No. First, he has provided no convincing argument or evidence showing that the telephone holding companies are not the closest available set of comparables for the business of unbundled network element leasing. As I have discussed in my direct testimony, the telephone holding companies are riskier than the network element leasing business because of their many riskier businesses. Therefore, use of telephone holding companies as proxies will yield a conservatively high cost of capital estimate. Although Dr. Billingsley has performed an arcane statistical analysis, his results do not, in my opinion, pass the tests of reason and common sense. If one were to accept the results of his cluster analysis, then one would have to believe that the risk of the network element leasing business was more similar to the risks faced by Coca Cola, McDonalds and Wal-Mart stores, as examples, than to the risks faced by BellSouth's parent company (which owns LEC's and the underlying network elements). It is clear on its face, however, that the risk of the network element leasing business has virtually nothing in common with the risks of a McDonalds or Wal-Mart.

I am further convinced of the inaccuracy of Dr. Billingsley's approach by my experience as a witness in several of Ameritech's state network element hearings. In those proceedings Ameritech's own cost of capital expert used a set comparable companies which was almost exactly the same as the set of

telephone holding companies that I have used. I note also that major brokerage firms and investment banks which issue analyst reports for BellSouth and other telephone holding companies see no need to resort to statistical cluster analysis when choosing proxy companies for valuing these companies. They view other telephone holding companies to be the best proxies for the subject telephone holding company being valued. This is true even though the telephone holding companies do not participate in exactly the same businesses or to the same proportionate degree. Ameritech, for example, is one of the largest providers of home security alarm services in the nation. BellSouth, in contrast, has no involvement in this business whatsoever.

Q. IN REBUTTALS TO YOUR TESTIMONIES FILED IN OTHER STATES, DR. BILLINGSLEY CLAIMS THAT HIS STATISTICAL MODEL GIVES "OBJECTIVE" RESULTS, IMPLYING THAT YOUR CHOICE OF COMPARABLES IS INHERENTLY SUBJECTIVE. IS THIS CORRECT?

A. No. Dr. Billingsley has glossed over the fact that the formulation of his model and the data he chooses to analyze are subjective. The factors he has chosen to consider in the model are based on his subjective judgment, and there is no basis to conclude the formulation of his model is necessarily correct or the best one for the purposes it was intended. The results of his model— which fly in the face of common sense— dramatically highlight this issue. Moreover, it is not clear how many different model formulations Dr. Billingsley considered

before selecting the model used in his testimony. When all of these issues are taken into consideration, I do not believe that Dr. Billingsley has offered a plausible reason for abandoning the basic notion that telephone holding companies are the best available comparables to use as a starting point for estimating the cost of capital for the network element leasing business.

Q. FROM YOUR KNOWLEDGE AND EXPERIENCE, DO INVESTORS USE CLUSTER ANALYSIS TO DETERMINE COMPARABLE COMPANIES FOR COST OF CAPITAL ESTIMATION PURPOSES?

A. No. And as previously stated, the sophisticated investments banks do not either.

Q. IN REBUTTALS TO YOUR TESTIMONIES FILED IN OTHER STATES, DR. VANDER WEIDE HAS SAID THAT THE USE OF MULTIPLE STAGE DCF MODELS IS NOT NECESSARY. DR. BILLINGSLEY HAS SUGGESTED THAT THE PERPETUAL GROWTH ASSUMPTION IN THE DCF MODEL MOST ACCURATELY REFLECTS THE EXPECTATIONS OF INVESTORS, AND THAT THE THREE-STAGE DCF MODEL REFLECTS SOLELY YOUR SUBJECTIVE ASSUMPTIONS. IS THIS TRUE?

A. No. Quite to the contrary. The perpetual growth assumption systematically guarantees an inaccurately high cost of equity estimate inconsistent with investor expectations. Prominent economists familiar with current cost of

capital research have recognized that the simple perpetual growth DCF model using short-run forecasts is inappropriate to use if a company's short-run growth rate is expected to exceed the long-run growth rate of the economy, or the cost of equity will be overestimated. I have cited these economists and practitioners extensively in my direct testimony.

Neither Dr. Billingsley nor Dr. Vander Weide have cited any credible support for the naïve application of the perpetual growth DCF model using short-run growth forecasts in this circumstance.

Q. DO YOU BELIEVE THAT THIS COMMISSION SHOULD NECESSARILY USE THE PERPETUAL GROWTH DCF MODEL IF IT HAS BEEN USED IN THE PAST?

A. No. As highlighted by the excerpts of academics and practitioners cited in my direct testimony, one must understand when the perpetual growth DCF model is— and is not— suitable. In the case of a regulated utility in the traditional regulation setting, growth has traditionally been limited and has not exceeded the growth rate of the economy. If the growth rate does not exceed the economy-wide growth rate, and the growth rate is expected to be very stable, the use of the perpetual growth model is reasonable. In this case, however, I use a set of comparables comprised of holding companies which are engaged in numerous businesses that are, in the short-run, expected to grow at rates much greater than the aggregate economy. The wireless business, as an

example, has forecasted growth rates exceeding 30% (see exhibit JH-1). It is absolutely clear that this business will not grow at such a high rate indefinitely.

Q. BOTH DR. VANDER WEIDE AND DR. BILLINGSLEY HAVE FILED REBUTTAL TESTIMONIES IN OTHER STATES IMPLYING THAT DR. DAMODARAN SAYS IN HIS BOOK THAT THE BEST USE FOR THE THREE-STAGE DCF MODEL IS FOR COMPANIES WITH GROWTH RATES IN EXCESS OF 25 PERCENT. WHAT ARE YOUR COMMENTS?

A. That assertion indicates a very inaccurate and incomplete reading of Dr. Damodaran's book. Dr. Damodaran describes in his book numerous DCF models with varying formulations and characteristics. Dr. Damodaran attempts to distinguish the circumstances under which each type of model might be most appropriate. It is obvious that the three-stage model described by Dr. Damodaran is a complex model which is not the model I employ, as I have stated in my direct testimony. Dr. Damodaran's three-stage model requires year-specific payout ratios, growth rates and betas. In contrast, the "H Model" described by Dr. Damodaran appears to be most analogous to the model I have used.

Dr. Damodaran states that:

"The H model is a two-stage model for growth, but unlike the classical two-stage model, the growth rate in the initial growth phase is not constant but declines linearly over time to reach the stable-growth rate in steady stage."[2]

Dr. Damodaran indicates that the best use for this model is for firms that are growing rapidly at the present, but for which the growth is expected to decline gradually over time as their differential advantage over their competitors declines.

Q. DOES DR. DAMODARAN SUGGEST ANY GROWTH RATE LIMITATIONS FOR THE USE OF THE "H MODEL"?

A. No. It appears from Dr. Damodaran's extensive analysis that the "H Model" is intended for companies which will grow at rates lower than those for which his formulation of a 3-stage model would be appropriate.

Q. DOES DR. DAMODARAN ALSO DESCRIBE THE CLASSICAL TWO-STAGE MODEL IN HIS BOOK?

A. Yes.

Q. WHAT DOES DR. DAMODARAN SAY ABOUT COMPANIES WHICH MIGHT BE APPROPRIATE FOR THE CLASSICAL TWO-STAGE DCF MODEL?

A. Damodaran suggests that one type of company for which this would be a suitable model is a company:

"...in an industry that is enjoying supernormal growth because significant barriers to entry (either legal or as a consequence of infrastructure requirements) can be expected to keep out new entrants for several years.

The assumption that the growth rate drops precipitously from its level in the initial phase to a stable rate also implies that this model is more appropriate for firms with modest growth rates in the initial phase. It is more reasonable, for instance, to assume that a firm growing at 12% in the high-growth period will see its growth rate drop to 6% after that than it is for a firm growing at 40% in the high-growth period."[3]

Q. IF YOU ASSUMED THAT THE CLASSICAL TWO-STAGE MODEL WAS THE MOST APPROPRIATE MODEL TO USE, WHAT IMPACT WOULD IT HAVE HAD ON YOUR DCF COST OF EQUITY ESTIMATE?

A. If I had instead utilized this model— which certainly appears applicable in this case based on Dr. Damodaran's analysis— it would have resulted in a lower cost of equity than what I actually calculated. This again provides evidence that my cost of capital estimate is conservatively high.

Q. DR. BILLINGSLEY HAS CLAIMED IN PRIOR STATE REBUTTAL TESTIMONIES THAT IT IS SUBJECTIVE OF YOU TO ASSUME THAT THE 5-YEAR I/B/E/S GROWTH RATES FOR YOUR GROUP OF COMPARABLE COMPANIES WILL NOT PERSIST INDEFINITELY IN THE FUTURE. HE IMPLIES THAT INVESTORS WOULD ASSUME PERPETUAL GROWTH AT THESE RATES. HOW DO YOU RESPOND TO THIS ASSERTION?

A. I believe that it is quite the opposite. Dr. Billingsley argues that investors take 5-year forecasts, which in the case of the telephone holding companies include subsidiaries with growth rates exceeding 30%, and assume uncritically that such growth rates will last forever. However, there is no reason to believe that investors are so unsophisticated. Investors recognize that five-year forecasts mean that they are intended for five years. They appreciate the fact that even five-year forecasts become less accurate in the later years of the forecast period, and they understand that high growth businesses by necessity will slow down as their markets saturate. The comments by academics and practitioners cited in my direct testimony support this view. Dr. Billingsley has himself stated in previous rebuttal testimony that U.S. financial markets are "highly efficient" (Billingsley Georgia Rebuttal Testimony, p. 41[4]), which also supports my belief that investors are sophisticated in evaluating information available in the marketplace.

Q. IS DR. VANDER WEIDE'S AND DR. BILLINGSLEY'S PERPETUAL GROWTH ASSUMPTION BASED ON FIVE-YEAR ANALYST FORECASTS SUBJECTIVE?

A. Absolutely, and as I have shown above, it is in this instance an incorrect assumption which would not be made by investors.

Q. IN PRIOR STATE REBUTTAL TESTIMONIES, DR. BILLINGSLEY AND DR. VANDER WEIDE HAVE ARGUED THAT SOME

COMPANIES HAVE GROWN AT HIGH RATES FOR LONGER THAN FIVE YEARS. DR. BILLINGSLEY HAS SPECIFICALLY REFERRED TO MCI'S HISTORICAL GROWTH RATES INDICATED IN VALUE LINE. DOES THIS INVALIDATE YOUR APPROACH AND MAKE THE PERPETUAL GROWTH MODEL MORE SUITABLE?

A. Not at all. In the real world, individual companies participating in a particular line of business will have differing growth rates which will occur over different time periods. Clearly, a few companies will do extraordinarily well, and may grow at high rates for many years. In fact, in my analysis I assume above average growth for most telephone companies over the next twenty years. Other companies will perform very poorly, and may experience low or negative growth (or go out of business entirely). The greatest proportion of industry participants will experience growth somewhere between the highest-growth stars and the weak underperformers. Investors today cannot definitively predict which companies in an industry will be the winners and which will be the losers. On average, no reasonable analyst would expect high growth in excess of the economy's growth for all of the industrys' companies forever.

What was particularly interesting about Dr. Billingsley's example in his prior rebuttal testimony is that he pointed out that MCI's current 5-year growth forecasts were in the 12% range, even though he stated that average earnings growth over the past 10 years had been 28% according to Value Line (Billingsley Georgia Rebuttal Testimony, p. 50[5]). Dr. Billingsley did not

mention that the same Value Line report indicated that MCI's growth rate over the past 5 years was only 5%. Clearly then, a tapering off of the high growth rate is occurring, consistent with the use of multiple stage DCF models and inconsistent with the perpetual DCF model. The use of a perpetual growth DCF model when MCI was growing at rates exceeding 28% would have dramatically overestimated MCI's true cost of equity at that time. Given that MCI's forecast growth rate of around 12% is significantly in excess of the growth rate of the economy, the same error arises by using a perpetual growth rate DCF model today.

Q. IN HIS PRIOR REBUTTAL TESTIMONIES, DR. BILLINGSLEY APPEARS TO ARGUE THAT INVESTORS SUBSUME ALL OF THE INFORMATION REGARDING THE DIFFERENTIAL GROWTH RATES OF SUBSIDIARY COMPANIES INTO THE PERPETUAL GROWTH MODEL. DOES THAT MAKE SENSE?

A. No. It is clear that it would be an extraordinarily difficult analysis to arrive at a single, perpetual growth rate estimate that accurately reflects the average growth of various businesses, some of which are relatively low-growth, such as the local exchange business, and other businesses which will grow astronomically for some period and then taper off to lower growth rates. Furthermore, there would not be the overwhelming support for multiple-stage DCF models as cited in my direct testimony if Dr. Billingsley's assertion were true.

Q. BOTH DR. VANDER WEIDE AND DR. BILLINGSLEY HAVE ALSO ARGUED IN PRIOR REBUTTAL TESTIMONIES THAT THE PERPETUAL GROWTH ASSUMPTION IS SOMEHOW INCONSEQUENTIAL BECAUSE LATER CASH FLOWS HAVE LITTLE IMPACT ON PRESENT VALUE. IS THIS CORRECT?

A. This is plainly wrong, as evidenced by the enormous difference between Bellsouth's, GTE's and my cost of equity estimates using the DCF model. Their argument overlooks the tremendous impact of compounding over time. By assuming perpetual dividend growth compounding at unrealistically high rates, but at the same time holding the price of the subject company's stock constant in the DCF model, the discount rate— or cost of equity— must get much higher by mathematical necessity in order to equate the enormous assumed dividends over time to the current price. In contrast, a more logical alternative assumption would be that-- if the market genuinely believed that high growth would be realized forever— the price of the subject company would rise.

Q. BOTH DR. VANDER WEIDE AND DR. BILLINGSLEY DISCUSS THE RISKS OF THE TELECOMMUNICATIONS BUSINESS. IS THE TELECOMMUNICATIONS BUSINESS THE SUBJECT OF THIS PROCEEDING?

A. No. The telecommunications business is a very broad category which includes such businesses as GTE's and BellSouth's wireless communications

endeavors. It therefore appears that they have incorrectly blurred the risks of various other risky businesses with that of the low-risk network element leasing business in their analyses.

Q. ARE THE RISKS OF COMPETITION, TECHNOLOGICAL INNOVATIONS, AND REGULATORY CHANGE DISCUSSED AT GREAT LENGTH BY DR. BILLINGSLEY AND DR. VANDER WEIDE SOMETHING THAT THE FINANCIAL MARKETS ACCOUNT FOR IN VALUING THE COMMON STOCKS OF COMPANIES?

A. Yes. The financial markets have been continuously absorbing and incorporating information about competition, and technological and regulatory change. This is evident from financial analyst reports and the public disclosures of the telephone holding companies themselves over the past several years. As Dr. Billingsley has stated, the U.S. financial markets are highly efficient. Dr. Vander Weide similarly testified in his direct testimony that "[e]conomists and investors consider all the risks that a firm might incur over the future life of the company" [Vander Weide direct, pg. 13]. If investors are aware of new risks which impact a company's value, they incorporate it into the cost of equity immediately. Consequently, Dr. Billingsley's and Dr. Vander Weide's arguments that the incumbent LEC's are facing dramatic new risks which require an increase to the market-determined cost of capital are puzzling. One would have to assume— contrary to their own statements— that the investing public is totally naive and would not

account for these various risks, even though the information about risks have been widely disseminated and discussed. I have read many of Dr. Vander Weide's testimonies filed in recent years and note that— both before and after the passage of the 1996 Telecommunications Act— he has described these kinds of risk in great detail based on publicly-available information.

Q. ASSUMING THAT MORE COMPETITION ARISES AT THE RETAIL TELEPHONE BUSINESS LEVEL, IS THERE EVIDENCE THAT INCREASED RETAIL COMPETITION WOULD MAKE THE WHOLESALE BUSINESS OF LEASING UNBUNDLED NETWORK ELEMENTS LESS RISKY?

A. Yes. Bell Atlantic is a large regional Bell holding company comparable to BellSouth. Bell Atlantic has recently agreed to merge with GTE. Bell Atlantic had indicated in a Strategic Overview previously published on its Internet web site (attached as Rebuttal JH-2) that the business of leasing network elements, in and of itself, represented an opportunity for the company, since retail competition would increase utilization of its network at the wholesale level without the need to make any additional investment.

Q. IS THE PROSPECT OF INCREASED COMPETITION IN THE RETAIL PHONE SERVICE RELEVANT FOR PURPOSES OF DETERMINING THE COST OF CAPITAL IN THIS PROCEEDING?

A. No. The FCC in its August 8 Order explicitly defined the relevant risk as the risk incurred in the business of leasing unbundled network elements at wholesale [August 8 Order at ¶702]. (That the FCC has indicated that "the risk adjusted cost of capital need not be uniform for all elements," further indicates that the relevant risks are those inherent in the business of leasing elements itself, not the risks entailed with retail phone service. [Id. at ¶702.])

Q. IN PRIOR REBUTTAL TESTIMONY FILED IN OTHER STATES, DR. BILLINGSLEY CONTENDED THAT YOUR MENTION OF THE RISK OF PHYSICAL BYPASS, PARTICULARLY FOR BUSINESS CUSTOMERS, WAS INCONSISTENT WITH YOUR DISCUSSION OF CAPITAL MARKET THEORY, WHICH SHOWS THAT COMPETITIVE RISKS CAN BE DIVERSIFIED AWAY AND WOULD NOT BE COMPENSATED BY THE MARKET WITH A RISK PREMIUM. WOULD YOU PLEASE EXPLAIN THE IMPLICATIONS OF CAPITAL MARKET THEORY WITH RESPECT TO YOUR TESTIMONY REGARDING RISK?

A. I discuss many potential risks of the network element leasing business in my testimony so that the Commission can get an accurate picture of the risks this business faces, particularly in relation to other businesses engaged in by telephone holding companies. Some of these risks could be viewed as systematic, meaning that they could not be diversified away, and others nonsystematic, such as the risk of competition. According to capital market

theory, an investor will not require extra compensation in the form of a higher cost of equity for risks that he or she can diversify away simply by acquiring a portfolio of companies in that business. Dr. Billingsley's inference is that because I describe both types of risks, I am assuming that BellSouth must be compensated for both in its cost of equity. I do not make that statement. Instead, my goal is to elucidate capital market theory regarding diversifiable risks. Ironically, Dr. Billingsley is criticizing me for fully discussing the issues of risk in my testimony (which he has not done), both from the point of view of those who consider competitive risks to be significant and from the viewpoint of capital market theory.

The question for this Commission to decide is whether it accepts the premise of capital market theory with regard to competitive risks. If it does not, then the risk of physical bypass should be considered. If it is considered, the current reality is that there are only small in-roads in facility bypass and the likelihood of it developing significantly over the near term is low. The August 8 Order describes the current competitive position of the incumbent LEC's network element business as being natural or bottleneck monopolies which do not now face significant competition (August 8 Order at ¶'s 11, 702). BellSouth's own trade association agrees with this view. In a brochure which the United States Telephone Association distributes to public consumers, it states:

"Be a smart consumer and arm yourself with information, especially about what long-distance companies don't want you to know— such as the fact that

they don't own, invest in or repair the local networks they'll use to carry your local calls. Those networks have been built and are maintained by your local telephone companies."[6] [emphasis added].

In the same vein, the findings of the Florida Commission's draft report on local telecommunications competition dated September 19. 1997 are that "local competition is developing much more slowly than many expected three years ago."

On the other hand, if the Commission concludes that capital market theory is correct, then competitive risks simply are not relevant.

While I see room for debate on this subject, my sense is that capital market theory is correct on this issue. The following hypothetical helps to analyze this question. Assume first that there are only two companies in the network element leasing business, BellSouth and GTE. In addition, assume that GTE becomes a much better competitor, that this is known to the market, and that GTE wins significant business away from BellSouth.[7] Under such circumstances, BellSouth's market has become more competitive and its market share will drop. In valuing the two companies, investors will forecast future cash flows for each company. BellSouth's forecasted cash flows will be reduced, while GTE's will be increased. BellSouth's stock price will fall and GTE's will rise. If competitive risk also affects cost of equity, investors will additionally increase BellSouth's cost of equity, which will cause its stock price to fall further. GTE's market in turn has become relatively less competitive, so investors will reduce GTE's cost of capital and the price will go

up even further. Looked at in this light, it is questionable that investors would require the second reduction in BellSouth's price by additionally increasing its cost of equity, particularly since the operating risks of the two companies are the same.

Finally assume that an investor buys both GTE and BellSouth. This investor now owns 100% of the profits from the network element leasing business, and bears no risk of competition whatsoever, even though BellSouth and GTE continue to compete with one another. If competition affects the cost of equity, this creates a puzzle for the investor who has just bought all of the competitors. Before he acquired both companies, he assigned a higher cost of equity to BellSouth. What cost of equity does he use after the acquisition to value his interest in BellSouth? BellSouth's competitive risks have not changed at all, but the investor does not bear any of that risk. His industry-wide profits remain constant regardless of which individual company wins the competitive war. Similarly, the investor receives no added benefit from the fact that GTE is the better competitor, even though he paid an added premium for this company by reducing the cost of equity. The most plausible answer to this puzzle is that competitive risk does not change the cost of equity to begin with, precisely because an investor does not consider unsystematic risks which can be diversified away easily. This is why capital market theory states that when determining the cost of equity, investors are concerned with the fundamental operating risks of a business, not the idiosyncracies affecting the individual competitors.

Q. DOES THE FACT THAT THE NETWORK ELEMENT BUSINESS LEASING BUSINESS FACES SOME RISKS TURN IT INTO A HIGH-RISK BUSINESS AS DR. BILLINGSLEY AND DR. VANDER WEIDE SUGGEST?

A. No. All businesses face some risks, including low-risk businesses. As discussed above, both the FCC and Bell Atlantic view it as a low-risk business in their public pronouncements.

Q. IN REBUTTAL TESTIMONIES FILED IN OTHER STATES, DR. BILLINGSLEY HAS QUESTIONED THE APPLICABILITY OF CAPITAL MARKET THEORY WHICH YOU HAVE DESCRIBED ABOVE. IS DR. BILLINGSLEY INCONSISTENT IN HIS USE OF THE CAPITAL ASSET PRICING MODEL?

A. Yes. On the one hand, Dr. Billingsley uses the capital asset pricing model in his analysis. Yet on the other, he attacks its "pristine theory" (Billingsley Georgia Rebuttal Testimony, pg. 60[8]) as being impractical because it inconveniently negates his argument that competitive risks are highly significant to BellSouth.[9] However, the foundation of the model is that diversifiable risks do not increase the cost of capital. As Ibbotson Associates states: "...unsystematic risk is that portion of total risk that can be avoided by diversifying; the CAPM concludes that unsystematic risk is not rewarded with a risk premium. For example, the possibility that a firm will lose market share

to a competitor is a source of unsystematic risk for the stock of a particular company."[10] [emphasis added]

Q. IN REBUTTAL TESTIMONY FILED IN OTHER STATES, DR. BILLINGSLEY HAS ASSERTED THAT THE FCC CONSIDERS COMPETITIVE RISKS IMPORTANT TO THE COST OF CAPITAL. HAS THE FCC SPECIFICALLY ADDRESSED THE CAPITAL MARKET THEORY QUESTION?

A. Not to my knowledge. Looking at Dr. Billingsley's specific citation to the FCC's Third Report and Order (FCC-96-489), the FCC stated that "potential competition could increase the risk facing the incumbent LECs, and thus increase their cost of capital, thus mitigating, to some extent, the factors suggesting that incumbent LECs cost of capital has decreased since 1990. [emphasis added] (Billingsley Georgia Rebuttal Testimony, p. 13[11]) However, the FCC's May 8 Order regarding universal service at paragraph 250.(4) states that:

"There are other factors however, that may mitigate or offset any potential increase in the cost of capital associated with additional competition. For example, until facilities-based competition occurs, the impact of competition on the ILEC's risk associated with the supported services will be minimal because the ILEC's facilities will still be used by competitors using either resale or purchasing access to the ILEC'S unbundled network elements."

Consequently, it does not appear that the FCC has definitively concluded that these risks will increase the LECs' cost of capital. but that they are leaving them open for consideration.

Q. DOES THIS FCC STATEMENT ALSO INDICATE THAT, EVEN IF COMPETITIVE RISKS DO INCREASE LEC COST OF CAPITAL, THAT ON NET THE COST OF CAPITAL HAS DECLINED SINCE THE TIME THAT THE FCC DETERMINED THE 11.25% ACCESS CHARGE RATE?

A. Yes. While I believe that the FCC is leaving the final decision to state Commissions, it is clearly its position that. if all of the factors are considered including competitive risks, the net cost of capital has declined from the time the 11.25% was adopted. One clear indication of this is the significant decline in interest rates since the FCC's Rate Represcription Order adopted in September of 1990 which I have discussed in my direct testimony. In its May 8 Order regarding universal service at paragraph 250.(4), the FCC stated that "[t]he reduction in the cost of borrowing caused the Common Carrier Bureau to institute a preliminary inquiry as to whether the currently authorized federal 11.25 percent rate of return is too high given the current marketplace cost of equity and debt."

Q. IN PRIOR REBUTTAL TESTIMONIES, DR. BILLINGSLEY HAS CRITICIZED YOUR ESTIMATION OF THE COST OF DEBT. IS DR. BILLINGSLEY CORRECT THAT NETWORK ELEMENTS WOULD ONLY BE FINANCED WITH LONG-TERM DEBT?

A. No. The network elements have varied expected economic lives, not all of which are necessarily long-term. In addition, the network element leasing business, like any other business, would be financed using a variety of sources and maturities. Dr. Billingsley would be hard-pressed to name any companies which are financed with 100% long-term debt.

Q. IN OTHER STATE REBUTTALS, DR. VANDER WEIDE AND DR. BILLINGSLEY HAVE INDICATED THAT YOUR USE OF THE ANNUAL DCF MODEL UNDERSTATES THE COST OF CAPITAL ESTIMATE. IS THIS TRUE?

A. No. When calculating the cost of equity applicable to an investor, the investor assumes that he or she will get quarterly dividends. As investors normally receive dividends quarterly, they will reinvest them and get the benefit of quarterly compounding. In other words, investors earn their cost of equity as calculated by the quarterly DCF model by reinvesting their cash flows quarterly. The purpose of this proceeding, however, is to determine the cost of capital which the telephone operating companies should be allowed. In contrast to investors, telephone operating companies are able to reinvest their cash flows on an approximate monthly basis. Consequently, if the

Commission allows a rate which is estimated using an annual DCF model, then the operating phone company gets an effective rate higher than the allowed rate because of monthly compounding. This effective rate will in fact exceed the rate calculated using a quarterly DCF basis. Thus, it would be entirely inappropriate to calculate the DCF cost of equity on a quarterly compounding basis for purposes of this proceeding, because this would give the operating phone company the benefit of both quarterly and monthly compounding. If the Commission were to decide that it preferred the quarterly DCF model, then a decompounding adjustment would have to be made to remove the benefit of monthly compounding.

Q. DR. VANDER WEIDE BELIEVES THAT TELEPHONE HOLDING COMPANIES ARE LESS RISKY THAN THE BUSINESS OF NETWORK ELEMENT LEASING. IN PRIOR REBUTTAL TESTIMONIES, DR. BILLINGSLEY BELIEVES THAT YOU HAVE MADE INCONSISTENT ARGUMENTS REGARDING DIVERSIFICATION IN RELATION TO TELEPHONE HOLDING COMPANIES. IS THAT THE CASE?

A. No. In the case of telephone holding companies, engaging in businesses which are systematically riskier than the network element leasing business will always make the risk of the telephone holding company greater than that of the network leasing business. Overall risk can never fall because of the acquisition of systematically riskier businesses. This can be illustrated with a simple

example. If you hold a one-asset portfolio comprised of a productive local oil well with enormous proven reserves, you will not make that oil well less risky by undertaking wildcat oil drilling in Iraq. Your overall holdings become more risky by making a fundamentally riskier investment. In the context of the telephone holding companies, the FCC and the major rating agencies have recognized that investments in businesses outside of local exchange have made them riskier.

Q. DR. BILLINGSLEY'S RISK PREMIUM ANALYSIS DIFFERS FROM YOURS, AND LEADS TO A SIGNIFICANTLY HIGHER COST OF EQUITY ESTIMATE. HOW DO YOU VIEW HIS APPROACH?

A. The equity risk premium is a subject of great research and debate in finance, and no definitive consensus has been reached. In my analysis, I attempted to consider all of the prevailing research by leading academics which I thoroughly discuss in my direct testimony. It is clear that Dr. Billingsley has not addressed recent research, particularly that of Blanchard, Siegel and Ross et al. which indicates that the forward-looking market premium over U.S. Treasury bonds is in the 2 to 5% range, far lower than what Dr. Billingsley estimates. My direct testimony also cites to a number of other sources regarding market estimates of the risk premium, including articles in *Fortune, The Economist* and the FCC's 1990 Rate Represcription Order.

Q. HAVE YOU SEEN OTHER OPINIONS REGARDING THE MAGNITUDE OF THE EQUITY RISK PREMIUM NOT REFERENCED IN YOUR DIRECT TESTIMONY?

A. Yes. Scholars at the American Enterprise Institute stated in the Wall Street Journal the following:

"Allow us now to suggest a hypothesis about the huge returns posted by the stock market over the past few years: As mutual funds have advertised the reduction of risk acquired by taking the long view, the risk-premium required by shareholders has gradually drifted down. Since Siegel's results suggest that the correct risk premium might be zero, this drift downward— and, the corresponding trend toward higher stock prices— may not be over."[12]

In addition, Alfred Rappaport states that:

"The premium should be based on expected rates of return rather than average historical rates. This approach is crucial because with the increased volatility of interest rates over the past two decades the relative risk of bonds has increased, thereby lowering risk premiums to a range from 3 to 5 percent. Those who estimate the market risk premium as the long-run average excess of stock returns over government bond returns will typically obtain a figure in the 7 to 9 percent range. This historical approach ignores that market risk premiums vary over time and at the present time can lead to significant undervaluation."[13]

Q. DO YOU HAVE ANY INFORMATION REGARDING THE MARKET RISK PREMIUM USED BY WALL STREET BROKERAGES?

A. Yes. My staff was able to obtain the July-end 1998 market risk premium estimated by Merrill Lynch. As of that time, Merrill Lynch estimated the market risk premium over the long-term Treasury yield to be 5.07%. This is 43 basis points lower than the 5.50% market risk premium over long-term Treasuries which I used in my study.

Q. HOW DOES DR. BILLINGSLEY ARRIVE AT SUCH A HIGH RISK PREMIUM?

A. Dr. Billingsley arrives at a large risk premium by making the same mistake with the market that he made for individual companies. That is, he assumes growth for an infinite period at a rate exceeding the growth rate of the aggregate economy. Had he properly taken account of the fact that growth must eventually slow, as I do in my direct testimony, he would have arrived at a market risk premium more consistent with that which I recommend.

Q. DR. VANDER WEIDE INDICATES IN HIS DIRECT TESTIMONY THAT THE COST OF CAPITAL IS FORWARD-LOOKING. HE STATES FURTHER THAT "FORWARD-LOOKING ECONOMIC COST STUDIES ARE PREDICATED ON THE ASSUMPTION THAT THE MARKET FOR ALL LOCAL EXCHANGE SERVICES IS FULLY

COMPETITIVE" [VANDER WEIDE DIRECT, PG. 38]. DOES THE FCC AGREE WITH DR. VANDER WEIDE'S ASSUMPTION?

A. No. In its August 8 Order, the FCC states explicitly at paragraph 702 that, "Based on the current record, we conclude that the currently authorized rate of return at the federal or state level is a reasonable starting point for TELRIC calculations, and incumbent LECs bear the burden of demonstrating with specificity that the business risks that they face in providing unbundled network elements and interconnection services would justify a different risk-adjusted cost of capital or depreciation rate. These elements generally are bottleneck, monopoly services that do not now face significant competition. We recognize that incumbent LECs are likely to face increased risks given the overall increases in competition in this industry, which generally might warrant an increased cost of capital, but note that, earlier this year, we instituted a preliminary inquiry as to whether the currently authorized federal 11.25 percent rate of return is too high given the current marketplace cost of equity and debt. On the basis of the current record, we decline to engage in a time-consuming examination to determine a new rate of return, which may well require a detailed proceeding. States may adjust the cost of capital if a party demonstrates to a state commission that either a higher or lower level of cost of capital is warranted, without that commission conducting a "rate-of-return or other rate based proceeding." We note that the risk-adjusted cost of capital need not be uniform for all elements. We intend to re-examine the issue of the appropriate risk-adjusted cost of capital on an ongoing basis, particularly in

light of the state commissions' experiences in addressing this issue in specific situations. [emphasis added] [footnotes omitted]

It is clear that none of the above provisions stated in paragraph 702 which I have highlighted would be necessary if the FCC intended a presumption of full competition.

Q. IF THE ILEC'S HAVE A STRICT BURDEN OF PROOF REQUIREMENT (AS STATED IN PARAGRAPH 702) FOR DEMONSTRATING THAT THE MARKET FOR NETWORK ELEMENTS IS RISKIER FOR PURPOSES OF COST OF CAPITAL ESTIMATION, CAN DR. VANDER WEIDE MERELY ASSUME THAT THE NETWORK ELEMENT MARKET—WHICH IS AT THIS TIME A NEAR-MONOPOLY— IS COMPETITIVE?

A. No, he cannot. Dr. Vander Weide has "assumed away" the requisite burden of proof. As Dr. Vander Weide provides no evidence that the business of network element leasing has become fully competitive, this inappropriate foundational assumption appears to moot his entire analysis.

Q. DID THE FCC IN FACT CONSIDER AND REJECT THE ASSUMPTION OF FULL COMPETITION?

A. Yes. At paragraph 688 of the FCC's August 8 Order, it stated that "...USTA's argument unrealistically assumes that competitive entry would be

instantaneous. The more reasonable assumption of entry occurring over time will reduce the costs associated with sunk investment."

Q. IS THERE ANY CONNECTION BETWEEN DR. VANDER WEIDE'S HYPOTHETICAL ASSUMPTION OF A FULLY COMPETITIVE MARKET AND A FORWARD-LOOKING COST OF CAPITAL?

A. None at all. Economic cost of capital are by definition forward looking. In other words, when assessing the cost of capital of any publicly-traded company as of today, the market accounts for all known risks existing currently and the possibility of risks that could develop or increase in the future. In the context of a publicly-traded telephone holding company, which owns local exchange companies and network elements, the market does not hypothetically assume that the network element leasing business will immediately become competitive when the real-world evidence indicates that facilities competition exists only to a very limited degree and may take years to develop due to its high cost. Instead, the market continuously evaluates real-world information regarding all relevant risks, including those which may arise or increase in the future, and incorporates the likelihood of those risks occurring into the current costs of capital of the telephone holding companies. Consequently, Dr. Vander Weide has calculated a hypothetical cost of capital, not a forward-looking economic cost of capital as required for this proceeding.

Q. DOES DR. VANDER WEIDE DISAGREE WITH YOUR ASSERTION THAT THE MARKET HAS ALREADY ACCOUNTED FOR THE RISK OF POTENTIAL COMPETITION?

A. It does not appear so (although we do disagree as to the extent of competition that the market actually expects). At page 31 of his direct testimony, he stated that "[i]nvestors are primarily interested in future expected competition when they assess the investment risk of GTE because expected future competition is a primary determinant of volatility in the expected returns on their investment."

Q. IF DR. VANDER WEIDE IS CORRECT THAT THE MARKET HAS INCORPORATED THIS INFORMATION ALREADY, IS THERE ANY NEED TO HYPOTHETICALLY ASSUME A FULLY COMPETITIVE MARKET AND THEREBY USE S&P INDUSTRIALS AS COMPARABLE COMPANIES INSTEAD OF TELEPHONE HOLDING COMPANIES?

A. None whatsoever. The DCF method for estimating the cost of equity is based on market prices which incorporate all available information in the marketplace.

Q. WHAT DID THE FCC SAY SPECIFICALLY WITH REGARD TO THE EFFECT OF COMPETITION ON THE PROVISION OF UNIVERSAL SERVICE?

A. The discussion at Paragraph 250.(4) of the FCC's May 8, 1997 Universal Service Order is virtually the same as appeared at paragraph 702 of the FCC's August 8 Order discussed above. It states that:

"We realized that, with the passage of the 1996 Act, the level of local service competition may increase, and that this competition might increase the ILECs' cost of capital. There are other factors, however, that may mitigate or offset any potential increase in the cost of capital associated with additional competition. For example, until facilities-based competition occurs, the impact of competition on the ILEC's risks associated with the supported services will be minimal because the ILEC's facilities will still be used by competitors using either resale or purchasing access to the ILEC's unbundled network elements. In addition, the cost of debt has decreased since we last set the authorized rate of return. The reduction in the cost of borrowing caused the Common Carrier Bureau to institute a preliminary inquiry as to whether the currently authorized federal rate of return is too high, given the current marketplace cost of equity and debt. We will reevaluate the cost of capital as needed to ensure that it accurately reflects the market situation for carriers." [emphasis added]

Q. TO THE EXTENT THAT THERE IS RISK INVOLVED IN THE PROVISION OF UNIVERSAL SERVICE AS DISCUSSED IN DR. VANDER WEIDE'S TESTIMONY, IS THIS ALSO A RISK WHICH THE MARKET ANTICIPATES AND ACCOUNTS FOR?

A. Yes.

Q. IS THE USE OF A LARGE, DIVERSE PROXY GROUP LIKE THE S&P INDUSTRIALS TO ESTIMATE COST OF CAPITAL CONSISTENT WITH REAL-WORLD FINANCIAL PRACTICE?

A. No. A fundamental objective in estimating the cost of capital is choosing the correct target. The most widely-accepted technique for determining the cost of capital therefore begins with the capital costs experienced by companies with businesses comparable to the line of business under consideration. In this case, therefore, the first step is to identify a group of comparable companies (or proxy group) with characteristics as similar as possible to the business of providing network elements and universal service, which is the business for which the cost of capital is being determined.

Q. DR. VANDER WEIDE TESTIFIED THAT GTE HAD A VALUE LINE BETA OF .95, WHICH HE ARGUES JUSTIFIES THE USE OF THE S&P INDUSTRIALS AS A PROXY FOR ESTIMATING THE LEC'S COST OF EQUITY. IS THIS POSITION CONSISTENT WITH PRIOR ARGUMENTS WHICH HE HAS MADE REGARDING BETAS?

A. No. In numerous rebuttal testimonies filed in other states, Dr. Vander Weide has vigorously objected to the use of historical betas computed over a 5-year time period because in his opinion they were not sufficiently forward looking proxies for risk. It is therefore extraordinary that he now uses a 5-year beta to support such an integral element of his analysis. As I noted in my direct testimony, BARRA betas are forward-looking and can be used as a check

against any betas utilized. If Dr. Vander Weide had instead used the forward-looking BARRA beta of .75 as of December 31, 1997, he would have properly concluded that GTE is actually far less risky than either the S&P Industrials or the market as a whole. I also note that the forward-looking BARRA beta of .75 is less than the beta of .78 which I estimated for GTE and utilized in my analysis.

Q. IN PRIOR REBUTTAL TESTIMONIES, DR. VANDER WEIDE SUGGESTS THAT TELEPHONE HOLDING COMPANIES CANNOT BE USED AS PROXIES FOR OTHER TELEPHONE HOLDING COMPANIES BECAUSE THE ANALYSTS' FORECASTS DO NOT CORRECTLY ACCOUNT FOR POST-MERGER GROWTH FORECASTS, WHILE STOCK PRICES DO. IS THIS A SOLID ARGUMENT FOR NOT USING TELEPHONE HOLDING COMPANIES AS THE PROXY GROUP?

A. No. Dr. Vander Weide provides no evidence that this is the case. The impact of anticipated mergers on stock prices is complex. Stock prices can fluctuate up and down over time in anticipation of merger benefits, merger detriments and the probability that the merger will be consummated. Empirical finance research indicates that the acquiring company in an acquisition or merger sometimes overpays, which causes the price of the acquiring company to fall. This could cause cost of equity estimates to be too high for acquiring companies according to Dr. Vander Weide's premise, which would have an

offsetting impact. In his own S&P Industrial sample, Dr. Vander Weide has not provided an analysis of which, if any, of these companies were going through, or perhaps affected by the anticipation of, a merger. When all these implications are considered, I do not believe that Dr. Vander Weide has offered a supportable reason for not using the appropriate proxy group.

Q. WHY IS DR. VANDER WEIDE'S DCF COST OF EQUITY ESTIMATE HUNDREDS OF BASIS POINTS HIGHER THAN YOUR ESTIMATE?

A. As I have already mentioned in regard to Dr. Billingsley's approach, the most significant assumption which would causes this difference is the incorrect use of a single-stage DCF model that assumes that five-year analyst forecast growth rates which exceed the growth rate of the economy will persist forever for the sample companies. The fallacy of such growth assumptions is easily demonstrated. Consider this: if any one of the companies in the S&P group experienced super-normal growth in excess of the market-wide rate of growth forever, that one company would eventually grow to become the entire economy. The impossibility of such a result proves that rapidly growing companies can continue such growth only for a relatively finite period of time, at which point their growth must converge with the growth rate of the overall economy.

Q. DR. VANDER WEIDE TESTIFIED IN PRIOR STATE REBUTTAL TESTIMONIES THAT VALUE LINE PROVIDED LONG-RUN

GROWTH ESTIMATES IN EXCESS OF 5 YEARS WHICH SOMEHOW JUSTIFIED HIS PERPETUAL GROWTH ASSUMPTION. IS HE CORRECT?

A. No. Value Line does not provide long-run growth estimates, which is readily apparent from the Value Line reports themselves and which my staff confirmed directly with Value Line. Value Line provides 5 year forecasts, similar to the term of the IBES forecasts.

Q. WHY ARE YOU CRITICAL OF DR. VANDER WEIDE'S USE OF THE S&P INDUSTRIALS AS A COMPARISON GROUP FOR ESTIMATING THE COST OF CAPITAL FOR THE BUSINESS OF LEASING UNBUNDLED NETWORK ELEMENTS OR FOR THE PROVISION OF UNIVERSAL SERVICE?

A. While Dr. Vander Weide agrees with me that the cost of equity capital is largely a function of risk, he does not attempt to identify a comparable group consisting of companies with similar risk. Instead the analysis is performed on a group consisting of virtually all the S&P Industrials, including such diverse firms as automobile manufacturers, oil companies, producers of food and food ingredients, publishing and entertainment companies and pharmaceutical giants. Because Dr. Vander Weide's analysis is based on the performance of large industrial companies generally rather than a group of comparable companies, his results are of no relevance to the wholesale telephone business or the provision of universal service. It simply makes no sense to select a

proxy group that has nothing in common with firms providing local retail phone service, much less a company set up solely for the purpose of leasing unbundled network elements at wholesale. Under his approach, Dr. Vander Weide must strain to identify similarities among a diverse group of companies — i.e. between companies in the telephone business and large businesses in general — out of a sea of differences.

It makes far more sense to begin with a group of companies — i.e., telephone holding companies — that have some similarity to the firm that will sell access to telephone facilities at wholesale. At that point, we can discuss intelligently any differences in risk between a telephone holding company which owns many risky businesses — such as wireless and international ventures — and the lower-risk business of providing unbundled network elements and universal service.

Q. ARE YOU AWARE OF ANY MAJOR COMPANIES THAT USE THE S&P INDUSTRIALS TO ESTIMATE THEIR COST OF CAPITAL INSTEAD OF A PROXY GROUP OF COMPANIES PARTICIPATING IN THE SAME LINE OF BUSINESS?

A. No. And as I have previously noted, Ameritech's own cost of capital expert witness used a set comparable companies which was almost exactly the same as the set of telephone holding companies which I have used.

Q. DO INVESTMENT BANKS USE THE S&P INDUSTRIALS AS THE COMPARABLES FOR TELEPHONE COMPANIES?

A. No. Major brokerage firms and investment banks which issue analyst reports for GTE view other telephone holding companies to be the best proxies for the subject telephone holding company being valued.

Q. DR. VANDER WEIDE INDICATES THAT THE THEORETICALLY CORRECT CAPITAL STRUCTURE TO BE USED IN COST OF CAPITAL ESTIMATION SHOULD BE BASED ON MARKET WEIGHTS. WOULD MARKET-WEIGHTED WACC CALCULATIONS FOR EITHER THE S&P INDUSTRIALS OR FOR GTE PROVIDE AN ACCURATE ESTIMATE OF THE COST OF CAPITAL FOR THE NETWORK ELEMENT LEASING BUSINESS?

A. No. Such estimates would be too high. It is critical to emphasize that the target market value capital structure should be used to determine the cost of capital for the business in question, which is clearly understood by all academics. In this proceeding, the business is the provision of network elements and universal service. This is a distinctly different, and far less risky business than the overall combined businesses of the publicly-traded GTE holding company, or of the S&P industrials. Therefore, I have utilized the market-weighted WACC estimate for the riskier GTE holding company as the upper bound of my WACC range estimate for the network element leasing business.

Q. WHY DO YOU USE A BOOK VALUE CAPITAL STRUCTURE TO ESTABLISH THE LOWER BOUND OF YOUR WACC ESTIMATE RANGE?

A. I believe that GTE and other telephone holding companies have not issued more debt due largely to increased risks entailed in other lines of business such as cellular, long-distance, airphone, international ventures and paging. As there are no publicly-traded companies involved solely in the business of network element leasing, the true market-weighted capital structure for this business is not observable and can only be estimated. The purpose for using a book value capital structure (which has been commonly used in traditional rate of return hearings) is to approximate a capital structure which may better reflect the risk of the network element leasing business, rather than the risk of telephone holding companies engaged in many riskier businesses. At the time that the equity proceeds were recorded on their books at what was then market value, the telephone holding companies were much more focused on the traditional local exchange business. This is much closer to the business of providing unbundled network elements and universal service when compared to the various endeavors undertaken by telephone holding companies today. Therefore, the book value is used to provide the lower-bound of my range estimate. As discussed in my direct testimony, I believe that the midpoint of the range is the most reasonable WACC estimate.

Q. HAS EITHER DR. BILLINGSLEY OR DR. VANDER WEIDE PROVIDED ANY REAL-WORLD EVIDENCE THAT THE COST OF CAPITAL APPLICABLE TO THE PROVISION OF NETWORK ELEMENTS AND UNIVERSAL SERVICE IS AS HIGH AS THEY SUGGEST?

A. No. In particular, neither have been able to cogently address the real-world, investor-oriented evidence described in my direct testimony which provides independent assurance that my estimate is in the correct range. For example, in the Bell Atlantic/NYNEX merger proxy statement dated September 9, 1996 (after the passage of the 1996 Telecommunications Act and the release of the FCC's August 8 Order), Merrill Lynch as part of its fairness opinion performed a DCF analysis of the companies using an 8 to 10% discount rate for their telephone company operations. It is notable that this was disclosed in a securities filing seeking investor approval of a multi-billion dollar merger which subjected Merrill Lynch and the officers and directors of both NYNEX and Bell Atlantic to federal and state securities laws with onerous disclosure requirements. I also noted in my direct testimony that a Salomon Brothers analyst report dated January 1996 estimated the cost of capital for the regional Bell holding companies to be 8.6%. Salomon disclosed in that report that it had been an underwriter for BellSouth, Bell Atlantic and several other RBHC's.

Morever, interest rates have dropped dramatically since the FCC determined the 11.25% access charge rate in 1990. Using this 304 basis point

decline from September 1990 to December 1997 as a rough guide implies a current cost of capital of 8.21% (11.25% minus 3.04%).

Consequently, I see no real-world evidence indicating that a hypothetical cost of capital posited to be hundreds of basis points higher by Dr. Billingsley or Dr. Vander Weide is anything close to the true cost of capital for either the business of unbundled network element leasing or the provision of universal service.

Q. DOES THAT CONCLUDE YOUR PRESENT TESTIMONY?

A. Yes, it does.

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[1] For ease of understanding, I will hereinafter refer to Sprint/United and Sprint/Centel collectively as "Sprint".

[2] Damodaran, Aswath. Security Analysis for Investment and Corporate Finance, John Wiley and Sons, New York, 1994, p. 115.

[3] *Ibid.*, pp. 108-109.

[4] In Re Review of Cost Studies, Methodologies, and Cost-Based Rates for Interconnection and Unbundling of BellSouth Telecommunications Services, Before The Georgia Public Commission, Docket No. 7061-U, Rebuttal Testimony of Dr. Randall S. Billingsley, August 29, 1997, p. 41, at 16.

[5] *Ibid.*, p. 50, at 17-20.

[6] *"Call Them On It! 4 Questions the Long-Distance Companies Don't Want You To Ask"*, United States Telephone Association.

[7] The conclusions of this hypothetical would continue to hold if one alternatively assumed that BellSouth and GTE were equally efficient and competitive, and that the market became much more competitive due to the entry of several new competitors.

[8] In Re Review of Cost Studies, Methodologies, and Cost-Based Rates for Interconnection and Unbundling of BellSouth Telecommunications Services, Before The Georgia Public Commission, Docket No. 7061-U, Rebuttal Testimony of Dr. Randall S. Billingsley, August 29, 1997, p. 60, at 13.

[9] Dr. Sharpe won the Nobel prize for his work in developing this "pristine theory".

[10] Ibbotson Associates, *Stock, Bonds, Bills and Inflation, 1996 Yearbook*, Chicago, pg. 148.

[11] In Re Review of Cost Studies, Methodologies, and Cost-Based Rates for Interconnection and Unbundling of BellSouth Telecommunications Services, Before The Georgia Public Commission, Docket No. 7061-U, Rebuttal Testimony of Dr. Randall S. Billingsley, August 29, 1997, p. 13, at 15-21.

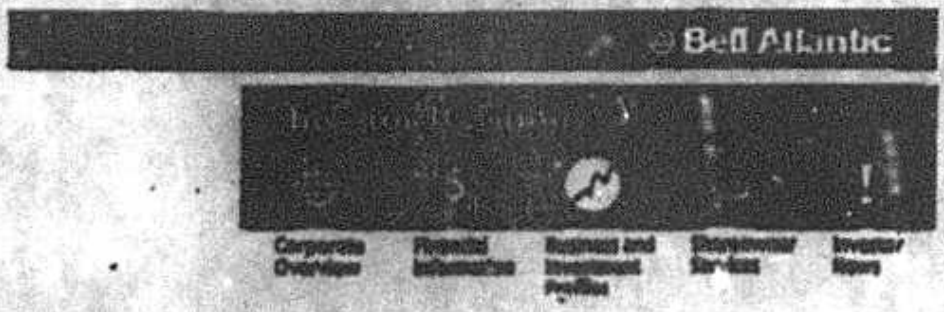
[12] Glassman, James K. and Kevin A. Hassett, *Are Stocks Overvalued? Not a Chance.* The Wall Street Journal, March 30, 1998.

[13] Rappaport, Alfred. Creating Shareholder Value. The Free Press. New York, 1998. p. 39.

Comparison of Earnings Growth Forecasts for Telephone Holding Companies[1] and Wireless Companies

Ticker	Company	IBES 5-yr earnings growth forecast Jan-98
	Telephone Holding Companies	
AIT	Ameritech	8.14%
BEL	Bell Atlantic	7.89%
BLS	BellSouth	8.11%
SBC	SBC Comm.	9.64%
USW	US West	4.62%
AT	ALLTEL	9.86%
CSN	Cincinnati Bell	17.00%
GTE	GTE	8.93%
SNG	So. New England	6.50%
	Mkt-Wtd Average:	**8.41%**
	Wireless Companies	
ATI	Airtouch	34.88%
MTEL	Mobile Telecom	24.33%
NXTL	Nextel Communications	32.50%
USM	U S Cellular	26.63%
	Mkt-Wtd Average:	**33.28%**

(1) Telephone holding companies generally own cellular, paging and other businesses riskier than local telephone operations.



Network Services Strategic Overview

Bell Atlantic's core network services business is an extremely valuable asset, generating significant cash flows and outstanding capital returns. We foresee continued strong earnings growth fueled by solid business volumes, increasing demand for new services, and continuing cost improvements.

Revenue Components		Revenues by Lines of Business	
Local	36%	Consumer	23%
Access	28%	Carrier	21%
Toll	11%	Small Business	15%
Value Added	11%	Large Business	13%
Directory Publishing	9%	Directory	9%
Other	5%	Public + Operator	6%
		Federal Systems	3%

Revenues of $13.3 billion in 1996
Targeting 5% revenue growth in 1997

While the Telecommunications Act of 1996 will accelerate the opening of our local markets to competition, it also removes the artificial barriers that have kept us out of other attractive markets, providing a clear path to entry into new businesses like long distance.

This industry convergence creates a whole new set of business opportunities for companies that can package and market services across the whole range of services demanded by the marketplace. Our landline network platform provides the best and most efficient delivery architecture for the widest range of new services and margin opportunities, especially as our modernization program migrates our network to an ATM switched digital broadband full service platform.

The ability to package and market services will

expand the total pie, particularly as it relates to high-margin services. In the next five to ten years, we expect to see dramatic increases in penetration rates for value-added telephony services, second lines, data connectivity, and video services.

At Bell Atlantic, we are uniquely positioned to put together a full complement of services. The key to our success in the new, open marketplace will be focusing on the high end of the market, not necessarily overall market share. While there are incremental margin opportunities for these services today on a stand-alone basis, the key to profitability in the future will be the margin per customer created by marketing a full package of differentiated services to both residential and business customers.

Growth Strategies

1. Revenue Stimulation
2. New Market Opportunities
3. Network Optimization
4. Improve Cost Structure

1. Revenue Stimulation
A top priority of the network business in 1996 will be achievement of a five percent revenue growth target. We intend to build on the momentum achieved in 1995, with a special emphasis on marketing and product development.

- We will continue to drive growth in existing residential services by stimulating the market with promotional and marketing programs designed to increase penetration.
- We will continue to promote sales of secondary residential lines, targeting more than 800,000 additional lines in 1996.
- We plan to launch a series of new products and services in the residential market, including voice activation and Internet access.
- In the small business area, sales of our customized Centrex -- CustoPak -- are expected to continue strong growth in 1996. In large business, demand for fast-packet services and network integration continues to be driven by increasing use of enterprise networks and the popularity of the World Wide Web.

2. New Market Opportunities
Data Connectivity
The emergence of the World Wide Web, the popularity of on-line services, and the increase in the number of people teleworking and utilizing collaborative computing are expected to drive growth in the data connectivity market through the rest of the

decade.

We are addressing these market needs through the existing switched public network, currently with bandwidth enhancements such as ISDN. Ultimately, the capabilities of the switched digital broadband full service network will provide the platform for meeting longer-term market requirements for high bandwidth connectivity.

We are targeting between three and four million secondary lines in service by the end of the century -- which would represent a penetration of 30 to 35 percent of the residential market. We are also targeting more than one million ISDN lines in service by the year 2000.

Long Distance
The opening of the $70 billion long distance market represents a dramatic expansion of our market potential and a significant opportunity to create shareowner value. In addition to giving us immediate entry into markets outside our region, the Telecommunications Act of 1996 gives us the opportunity to pursue long distance business in markets outside our region immediately, and provides a detailed path for market entry in-region in the 1997-98 time frame.

Out-of-region, we are selectively targeting markets where we have a distinct opportunity for success and profitability, either because of a favorable regulatory situation, brand equity, or an existing wireless presence. Our goal is to gather the necessary expertise and capabilities needed for in-region entry.

In-region, we believe our ability to gain market share profitably will be a result of the following:

- Strong brand name and sizable customer base.
- Expected capital expenditures of only $200 to $300 million to enable our network to carry long distance traffic within the region, thereby avoiding interconnection charges.
- Roughly 40% of originating long distance calls within the mid-Atlantic region also terminate within our territory.

We are planning to capture at least 20 percent of the $10 billion in-region market within five years of entry.

Video Services
The market opportunity in video services is driven by the fact that people simply want better alternatives to today's cable television and video rentals. The cable market in our region is estimated at $4 billion, and video rentals are estimated at $2 billion.

Video is a natural extension of our network

business. Fundamentally, there is no difference between transmitting digital video than any other kind of digitized content. The same broadband network that we are building to serve the voice and data markets will also serve the video market. We are the only telephone company in the country to be doing this today with the first commercial video network anywhere in the nation in Dover Township, New Jersey.

3. Network Optimization
Throughout our network, we have many of the technologies in place to address these new market opportunities. As we complete the final stage of modernization -- the last mile to the customer premise -- we will be able to support the broad range of customer requirements in the areas of voice, data, and video services.

The economics of fiber to the curb are becoming increasingly favorable relative to copper for basic telephony, with comparable capital costs and significantly lower operating costs. Equally attractive are the low variable costs for the addition of broadband data, second lines, and video capabilities, as demand warrants. In this manner, we will optimize returns on our investment base by extending the life of existing facilities, maximizing the penetration potential of transport and vertical services, and minimizing unit costs.

Another opportunity to optimize utilization of our network is a result of the opening of the local marketplace by the Telecommunications Act of 1996. We believe that competition will expand the market in local exchange as it did in long distance -- stimulating total market growth as a result of new entrants.

By selling our network services in a wholesale environment, we can achieve new revenues on our platforms without new capital investment, while preserving efficiencies of scale and scope. Our formula is simple -- make our transport and value-added services so attractive that carriers would rather buy from us than build these capabilities on their own. We believe we are well positioned to preserve network margins using the wholesale channel -- our access prices today are among the lowest in the country, and deep discounting below retail is not required under the legislation.

4. Improve Cost Structure
In the area of expense controls, we already have the lowest cash expense per access line in our industry at $320. We will continue to drive that number lower through continued workforce reductions and the deployment of new operating systems and cost-effective technologies.