COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

Investigation by the Department of Telecommunications and Energy on its own Motion into the Appropriate Pricing, based upon Total Element Long-Run Incremental Costs, for Unbundled Network Elements and Combinations of Unbundled Network Elements, and the Appropriate Avoided Cost Discount for Verizon New England, Inc. d/b/a Verizon Massachusetts' Resale Services in the Commonwealth of Massachusetts	D.T.E. 01-20

SURREBUTTAL TESTIMONY OF JOHN I. HIRSHLEIFER

ON BEHALF OF AT&T and WORLDCOM

December 17, 2001

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on behalf of AT&T and WorldCom
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Q. PLEASE STATE YOUR FULL NAME AND OCCUPATION.

A. My name is John I. Hirshleifer and my business address is Charles River Associates, Inc., 10877 Wilshire Blvd., Los Angeles, California 90024. I am a Vice President at Charles River Associates, Inc. (CRA), an international financial and economic consulting firm.

Q. ARE YOU THE SAME JOHN HIRSHLEIFER WHO PREVIOUSLY SUBMITTED PREPARED DIRECT (5/1/01) AND REBUTTAL (7/18/01) TESTIMONIES ON BEHALF OF AT&T AND WORLDCOM IN THIS PROCEEDING?

A. Yes, I am.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. The purpose of my surrebuttal testimony is to respond to the prepared rebuttal testimony dated July 18, 2001 submitted in this proceeding by Dr. James H. Vander Weide ("Vander Weide Rebuttal") on behalf of Verizon Massachusetts ("VZ-NE") regarding the cost of capital.

I. DR. VANDER WEIDE'S METHODOLOGY FOR DEFINING THE COST OF EQUITY IS SYSTEMATICALLY BIASED TO PRODUCE AN UNREASONABLY HIGH COST OF CAPITAL ESTIMATE.

A. Dr. Vander Weide's Assumption Of Perpetual Growth Guarantees An Excessive Rate Of Return.

Q. DR. VANDER WEIDE DEVOTES A SUBSTANTIAL PORTION OF TESTIMONY ATTEMPTING TO BOLSTER HIS INCORRECT USE OF THE SINGLE STAGE DCF MODEL. IS HE ABLE TO CITE ANY LEADING AUTHORITY

SUPPORTING THE USE OF THE SINGLE STAGE MODEL WHEN THE GROWTH RATE FOR THE SUBJECT COMPANY SIGNIFICANTLY EXCEEDS THE GROWTH RATE OF THE ECONOMY AS A WHOLE?

A. No. While I cite numerous leading scholars and practitioners in my direct testimony that clearly explain why the single-stage model is inappropriate for use in those circumstances, it is striking that he can cite nothing that rebuts these authorities.

The experts that I cited would not be advocating the superiority of multiple stage models if any of Dr. Vander Weide's arguments offered in regulatory proceedings regarding the single stage DCF model were true.

Q. DOES DR. VANDER WEIDE'S ARGUMENT THAT SOME COMPANIES, SUCH AS WAL-MART, INTEL, MERCK AND CENTURYTEL, HAVE GROWN AT HIGH RATES FOR LONGER THAN FIVE YEARS [VANDER WEIDE REBUTTAL, P. 56] MEAN THAT ALL COMPANIES IN THE S&P INDUSTRIALS, OR EVEN ALL TELEPHONE HOLDING COMPANIES, WILL GROW AT RATES HIGHER THAN THE GROWTH RATE IN THE ECONOMY FOREVER?

A. Absolutely not. Not even Wal-Mart, Intel, Merck and CenturyTel will grow at those rates perpetually. Studious analysts would be hard-pressed to agree that these particular companies will all grow at high rates for the *next* 20 years, let alone forever. Intel, for example, has been the single most dominant microprocessor producer serving the microcomputer industry, which grew from a base of close to zero in the early 1980s, when microcomputers were unknown to consumers, to widespread use worldwide as of today. Obviously, the entire S&P Industrials

does not enjoy the incredible position that Intel was in at the commencement of the 1980s.

Q. IN SELECTING FOUR COMPANIES THAT HAVE HAD SEVERAL YEARS OF HIGH GROWTH, DOES DR. VANDER WEIDE MENTION THE MANY OTHER COMPANIES THAT HAD AVERAGE, OR POOR, OR NEGATIVE GROWTH?

A. No. And Dr. Vander Weide is unable to tell us which companies of his S&P Industrial sample, or even of a sample of telephone companies, will grow at above-average rates, and which will have average or below-average rates of growth. Just in the last three years Laidlaw, Helmerich & Payne, Forster Wheeler, Fleetwood Enterprises, Pep Boys, Silicon Graphics, IKON Office Solutions, Milacron and several others were dropped from the S&P Industrial group. Laidlaw's earnings growth rate averaged *negative* 1% over a 10-year period; Pep Boys' *negative* 8.5% over the past 5 years; IKON's *negative* 7.0% over the past 10 years and *negative* 18.0% over the past 5 years.[1] Had these and other companies that have been dropped from the S&P Industrials over the course of time remained in the set, the expected growth rate for the aggregate sample would also likely be lower than the rate currently forecasted.

Q. DR. VANDER WEIDE INDICATES THAT THERE ARE MORE THAN 100 COMPANIES THAT HAVE BEEN IN THE S&P 500 WITH EARNINGS GROWTH EXCEEDING 10% OVER THE 19 YEAR PERIOD FROM 1980 TO 1999.

[1] Value Line Investment Survey, Stock Profile Reports, June 16, 2000, May 18, 2001, and April 20, 2001.

[VANDER WEIDE DIRECT, P. 56] IS THE S&P 500 GENERALLY DESIGNED TO BE AN INDEX OF LEADING COMPANIES?

A. Yes. The guiding principle for inclusion in the S&P 500 is that they are "leading companies in leading US industries."[2] In addition to rebutting Dr. Vander Weide's argument that all companies are expected to grow at high rates forever, this fact highlights a selection bias that further taints his choice of comparables. By using an index that is periodically repopulated by dropping selected poorly-performing companies and adding better-performing companies, Dr. Vander Weide is assuring himself that he will be using companies expected to have comparatively favorable growth expectations on the whole.

Q. DO OTHER SCHOLARS AND PRACTITIONERS AGREE THAT COMPANIES OFTEN FAIL TO SUSTAIN ABOVE-AVERAGE RATES OF EARNINGS GROWTH?

A. Yes. They are well aware of the fact that not all of the companies that have grown for many years at high growth rates will necessarily continue to exhibit such rapid growth.

Burton Malkiel, for example, has stated that,

> Corporations and industries have life cycles similar to most living things. There is, for corporations in particular, a high mortality rate at birth. *Survivors* can look forward to rapid growth, maturity, and then a period of stability. Later in the life cycle, companies eventually decline and either perish or undergo a substantial metamorphosis. Consider the leading corporations in the United States 100 years ago. *Such names as Eastern Buggy Whip Company, La Crosse and Minnesota Steam Packet Company, Lobdell Car Wheel Company, Savanna and St.*

[2] Standard & Poor's, General Criteria for S&P U.S. Index Membership, September 2000, p. 3.

> *Paul Steamship Line, and Hazard Power Company, the already mature enterprises of the time, would have ranked high in a "Fortune Top 500" list of that era. All are now deceased…*
>
> *And even if the natural life cycle doesn't get a company, there's always the fact that it gets harder and harder to grow at the same percentage rate.* A company earning $1 million need increase its earnings by only $100,000 to achieve a 10 percent growth rate, whereas a company starting from a base of $10 million in earnings needs $1 million in additional earnings to produce the same record.
>
> *The nonsense of relying on very high long-term growth rates* is nicely illustrated by working with population projections for the United States. If the populations of the nation and of California continue to grow at their recent rates, 120 percent of the United States population will live in California by the year 2035! Using similar kinds of projections, it can be estimated that at the same time 240 percent of the people in the country with venereal disease will live in California. As one Californian put it on hearing these forecasts, 'Only the former projections make the latter one seem at all plausible.'[3]

Q. DR. VANDER WEIDE ARGUES THAT THE SINGLE-STAGE DCF MODEL IS VALID IF FIRMS CAN GROW AT A CONSTANT GROWTH RATE IN EXCESS OF GNP FOR 40 OR 50 YEARS. [VANDER WEIDE REBUTTAL, P. 56] IS THIS A MEANINGFUL DEFENSE OF THE SINGLE-STAGE MODEL?

A. No. It appears to be a very strong argument *against* using the single stage model. It is impossible to predict which, if any, companies could grow at rates above the economy's growth for that length of time. It does not appear likely that many would grow at high rates for that long. While some *small* companies with novel products can have many years of high

[3] Burton G. Malkiel, *A Random Walk Down Wall Street*, 1999, pp. 97-99 (emphasis added).

percentage growth, most do not.[4] Sustained future periods of above-average growth are less likely for the average company in the S&P 500 list: a company must already have a relatively large capitalization to enter this list in the first place. And sustained future periods of above-average earnings growth are even less likely for Verizon, one of the largest telephone holding company in the United States, and the other Bell holding companies. These are already enormous companies, and their growth rates are likely to slow further as the high-growth worldwide markets for wireless phones and data services saturate.

Investment bankers, for example, do not assume 40 to 50 years of high growth in their valuation analyses. All use growth rate projections that assume that growth tapers off over time in their DCF models. In valuing Sprint PCS, Morgan Stanley Dean Witter (Morgan Stanley) projected an initially high free cash flow growth rate which consistently declines every year: 76.9% (2003), 46.1% (2004), 25.3% (2005), 13.7% (2006), 8.7% (2007) and 4.2% (2008). After 2008, Morgan Stanley specifically stated that it assumed a 6.0% growth of free cash flow in perpetuity.[5]

Similarly, Morgan Stanley projected declining free cash flow growth rates for Alltel, one of the companies in my sample of comparables: 25.6% (2001), 18.4% (2002), 12.8% (2003),

[4] "While many investors recall the newly-issued story stocks, such as Intel, Microsoft, and Wal-Mart, which have made investors rich, most forget about the many such firms that fail to fulfill their promise when they are issued. A study by Tim Loughran and Jay Ritter followed every operating company (almost 5,000) that went public between 1970 and 1990. Those who bought at the market price on the first day of trading and held the stock for five years, reaped an average annual return of only 5 percent." Jeremy J. Siegel, *Stocks for the Long Run* (1998), at p. 102 (citation omitted).

[5] Morgan Stanley Dean Witter, "Sprint PCS Group," March 13, 2000, p. 6.

8.9% (2004), 8.4% (2005), 6.0% (2006), 4.5% (2007) and 1.2% (2008) and assumed the perpetual growth after year 2008 to be 4%.[6]

If Morgan Stanley had assumed 40 years of growth for Alltel at the average growth rate over the first five years of 14.8%, or even at 8.4% as of year 5, it would have obtained a much higher valuation.

Q. IN PERFORMING DCF VALUATIONS, HAVE YOU EVER SEEN AN INVESTMENT BANK OR FINANCIAL ANALYST ASSUME THAT A COMPANY'S EARNINGS OR CASH FLOWS WILL GROW AT EITHER A HIGH RATE PERPETUALLY, OR FOR 40 OR 50 YEARS?

A. No. I have examined numerous DCF valuations over the years and all have used forecast methodologies similar to those used by investment banks as described in the prior answer. This is because analysts are constrained by the reasonability of their valuation results. No one reasonably expects that companies that are growing quickly now will grow at high rates for long, long periods of time. If one were to make such assumptions, the resulting valuations would be stratospheric, and it would be clearly evident to the analyst that the assumptions made were simply wrong.

Q. IS IT REASONABLE TO ASSUME THAT THE ENTIRE S&P INDUSTRIALS WILL GROW AT RATES EXCEEDING THE GROWTH RATE OF THE ECONOMY FOR 40 OR 50 YEARS?

[6] Morgan Stanley Dean Witter, "Alltel Corporation," March 13, 2000, p. 3.

A. No. It is fairly easy to predict that the companies which currently comprise the S&P Industrials, used by Dr. Vander Weide as his comparable set, will *not* grow at rates significantly above the economy's growth rate for that length of time.

Q. IF DR. VANDER WEIDE SAYS THAT ONLY 40 TO 50 YEARS OF HIGH GROWTH ARE REQUIRED TO MAKE THE SINGLE-STAGE MODEL ACCEPTABLE, IS HE REALLY SAYING THAT HE SHOULD BE USING A TWO-STAGE MODEL WITH 40 YEARS OF SUPERNORMAL GROWTH AND THEREAFTER GROWTH AT THE ECONOMY'S RATE?

A. Of course. He is clearly validating the use of multiple stage models, although he unrealistically assumes that virtually all companies will grow at high rates for long periods of time.

Q. IF HE WERE TO USE A TWO-STAGE DCF MODEL THAT ASSUMED 40 YEARS OF SUPERNORMAL GROWTH, WOULD HE ARRIVE AT THE SAME COST OF EQUITY ESTIMATE THAT HE OBTAINS FROM A SINGLE STAGE DCF MODEL?

A. No. This fact alone entirely contradicts his assertion that 40 years of supernormal growth justifies the use of a single stage model. Even in comparison to a two-stage model with 40 years of supernormal growth, the one-stage model improperly used by Dr. Vander Weide yields a significantly higher – and not credible – cost of equity.

To illustrate, I calculated the costs of equity of a hypothetical company using a one-stage DCF model and a 2-stage DCF model assuming that the high growth rate lasts 40 years. For this illustration I assumed that the company's IBES-equivalent growth rate equals the

weighted average IBES growth rates of the telephone holding companies in my comparables sample (12.15%), and that the company pays a dividend yield of 2.53%, equal to the weighted average dividend yield of the sample. If it were assumed that 40 years of growth were correct, the cost of equity estimated using the one-stage DCF model overstates the cost of equity calculated using the 40-year two-stage DCF model by at least 150 basis points. (See Attachment JH-11.)

Moreover, the present value of the projected dividend stream in years 41 and beyond composes 41% of the total present value of the stock if the single-stage DCF model is used. The present value of just the portion of the dividend stream projected for years 100 and beyond accounts for 11% of the current stock value.

Alternatively, using a modified 3-stage DCF model which assumes the first stage to last 20 years and convergence to the long-term growth rate of economy over the next 20 years, one arrives at a cost of equity estimate of 12.38%, which is 230 basis points lower than the single-stage DCF estimate.

Q. HAS DR. VANDER WEIDE ALWAYS ARGUED THAT AN ASSUMPTION OF 40 TO 50 YEARS OF SUPERNORMAL GROWTH IS ALL THAT IS REQUIRED TO USE THE SINGLE STAGE MODEL?

A. No. In his testimony in a Virginia TELRIC proceeding, his alternative, but similar, argument was that the impact on present value of dividend growth rate assumptions beyond *20* years was

de minimis due to the effect of discounting.[7] This assertion is also incorrect. In fact, the present value of constantly-growing dividends beyond year 20 accounts for more than 60% of the company's stock value using my hypothetical company.

Q. WHAT COST OF CAPITAL WOULD RESULT IF A TWO-STAGE DCF MODEL WITH A FIRST STAGE OF 20 YEARS OF SUPERNORMAL GROWTH IS UTILIZED?

A. If I were to calculate a cost of equity assuming 20 years of supernormal growth as Dr. Vander Weide suggested, and then growth at the economy growth rate, the resulting cost of equity would equal 11.48%, 320 basis points less than the single-stage DCF estimate. (See Attachment JH-11.)

Q. DR. VANDER WEIDE CLAIMS THAT VALUE LINE FORECAST DATA CAN BE USED TO SUPPORT HIS ASSUMPTION THAT THE 5-YEAR I/B/E/S GROWTH RATES FOR HIS GROUP OF "COMPARABLE" COMPANIES WILL PERSIST INDEFINITELY IN THE FUTURE. [VANDER WEIDE REBUTTAL, PP. 57-58] HOW DO YOU RESPOND TO THIS ASSERTION?

A. This assertion makes little sense, since Value Line does not publish any forecasts that predict growth more than five years into the future. I note that in prior rebuttal testimonies, Dr. Vander Weide has claimed that Value Line itself "publishes an estimate of each company's long-run

[7] Direct Examination of Dr. James H. Vander Weide, Before the State Corporation Commission of Virginia, On Behalf of Bell-Atlantic-Virginia, Inc., Case No. PUC970005, pp. 204-205.

growth from internal sources beyond the period beginning in 2003-2005"[8] which according to him confirmed that relatively high growth rates could be sustained for indefinitely long periods. This claim foundered because it was clear to any reader of the Value Line reports that forecasts are provided for up to five years only. In fact, the Value Line reports cited by Dr. Vander Weide provided no forecast beyond the year 2005. My staff additionally confirmed directly with Value Line that it does not make the long-term forecasts asserted by Dr. Vander Weide.

Q. IF VALUE LINE DOES NOT MAKE FORECASTS BEYOND A FIVE-YEAR HORIZON, HOW IS DR. VANDER WEIDE UTILIZING DATA OBTAINED FROM VALUE LINE?

A. Dr. Vander Weide is saying that, by using the traditional book "b times r" method (where "b" represents book earnings that are retained by the company, and "r" represents the book return on *book* equity) he, not Value Line, is inferring a long-run growth rate by looking at *book* retained earnings growth and merely *assuming* it will persist indefinitely into the future.

Dr. Vander Weide is simply taking data from Value Line reports and using a method sometimes used in past traditional regulatory hearings for stable, regulated industries which are not expected to experience significant variance from their historical growth rates, and whose book value equities are approximately equal to the market value of their equities. Similar to his assertions that five-year analyst forecast growth rates are expected by investors to persist

[8] See for example, Responsive Testimony of Dr. Vander Weide on behalf of Bell Atlantic-New York, Case 98-C-1357, filed June 26, 2000, p. 41.

forever, Dr. Vander Weide has not provided any evidence that investors believe that supernormal growth rates obtained using this set of assumptions will persist forever.

Dr. Vander Weide's utilization of the "b times r" method is particularly ironic in this case because this method is based on the return on *book* equity. Elsewhere in his testimony, Dr. Vander Weide repeatedly argues that it is only a market value capital structure that should be used in a forward-looking analysis. In this instance, by using a book value of equity as a base for forecasting future returns, Dr. Vander Weide calculates a higher growth rate than he would have if he had used a market value of equity. Dr. Vander Weide provides neither explanation nor justification for this analytical discrepancy. In fact, contrary to the position that he is taking in these regulatory proceedings, in his own article published in 1988 Dr. Vander Weide concluded that "in all cases, the plowback [b times r] estimate of future growth performed poorly, indicating that—contrary to generally held views—plowback is not a factor in investor expectations of future growth."[9]

Q. DR. VANDER WEIDE CLAIMS THAT THE SPECIFIC ASSUMPTIONS YOU HAVE MADE REGARDING GROWTH RATES AND STAGE LENGTHS IN YOUR THREE-STAGE ANALYSIS ARE UNUSUAL AND ARBITRARY [VANDER WEIDE REBUTTAL, P. 56]. HOW DO YOU RESPOND?

A. First, this hardly constitutes a defense of Dr. Vander Weide's perpetual growth assumption for companies experiencing high-growth currently, which is not only an arbitrary assumption, it is an

[9] James H. Vander Weide and Willard T. Carleton, "Investor Growth Expectations: Analysts vs. History," Journal of Portfolio Management, Spring 1988, p. 80.

unequivocally incorrect one. As cited in my direct testimony, for example, Professor William Sharpe of Stanford and his co-authors indicated that sophisticated institutional investors found the assumptions of single-stage and two-stage models overly simplistic, and that they preferred three-stages models for providing the best combination of realism and ease of use.[10]

Professor Aswath Damodoran of New York University illustrates many analytical approaches for discounted cash flow modeling. Dr. Damodaran describes numerous multiple-stage DCF models with varying formulations and characteristics. Dr. Damodaran states that it is unrealistic to assume that a company with a high growth rate would grow at this rate in perpetuity. Depending on how high the company's current growth rate is, Dr. Damodaran suggests different patterns and different lengths of time for the high-growth period. After the period of high growth, Dr. Damodaran assumes that the company will continue to grow at the stable growth rate of the economy. He suggests the following guidelines for defining the length of this first stage:[11]

If the Current Growth Rate Is:	*Length of High Growth Period:*
= 1 % higher than stable growth rate	No high growth
1-10 % higher than stable growth rate	5 years
> 10 % higher than stable growth rate	10 years

[10] Direct Testimony of John I Hirshleifer in DTE 01-20, May 1, 2001, p. 13.

[11] Damodaran, Aswath, *Applied Corporate Finance: A User's Manual*, John Wiley & Sons, 1999, p. 447.

Notably, Dr. Damodaran *never* suggests that the single-stage DCF model should be used for companies with growth rates significantly above the growth rate of the economy.

Second, Dr. Damodaran makes it clear that an assumption of an abrupt decline is more acceptable for companies growing at *lower* super normal growth rates. For those companies a two-stage or H Model could be used.

Had I utilized either Dr. Damodaran's two-stage or H model with a 5-year initial stage as suggested for all of the individual telephone holding companies, the cost of equity estimates would have been lower than what I actually calculated.[12] (See Attachment JH-11.) Consequently, my DCF model results are conservatively high in comparison to the results of these multi-stage models.

Q. UNDER WHAT CIRCUMSTANCES DOES DR. DAMODARAN SUGGEST THAT THE "H MODEL" SHOULD BE USED?

A. Dr. Damodaran states that:

[12] In Dr. Damodaran's two-stage model, the growth rate between years 5 and 20 equals the long-term growth rate. In my model, however, the growth rates are higher than the long-term rate until year 20. Consequently, the cost of equity resulting from my model will necessarily be higher than an estimate derived from Dr. Damodaran's 2-stage model.

> 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.[13]

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. Therefore, this model appears suitable for use with telephone holding companies.

As shown in Attachment JH-4 of my direct testimony, the telephone holding companies in the sample have five-year earnings growth rates between 11% and 14.8% (4.7% and 8.5% above the stable growth rate of 6.29%). Had I applied Dr. Damodaran's H model to the set of comparables, the resulting costs of equity would have been *lower* than those that I calculated. This is because in the H model the high initial growth rates begin to decline immediately, while my DCF model assumes that the IBES five-year growth rates do not decline over the first 5 years. After the initial growth phase, the growth rate declines linearly to the long-term rate until year 20. Therefore, in every year after the first my model utilizes higher growth rates than would be used in the H model.

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:

[13] Damodaran, Aswath, *Damodaran on Valuation: Security Analysis for Investment and Corporate Finance*, John Wiley & Sons, New York, 1994, p. 115.

> …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. [14]

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

A. As I stated above, if I had instead used 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.

Q. DOES DR. DAMODARAN HIMSELF DESCRIBE A 3-STAGE DCF MODEL?

A. Yes, although his 3-stage model is more complex and differs in many ways from the model I employ. Dr. Damodaran's three-stage model allows for an initial period of high growth, a transitional period in which growth declines, and a final stable-growth phase. However, Dr. Damodaran states that his three-stage dividend discount model requires year-specific payout ratios, growth rates and betas. The purpose for year-specific betas is to compute distinct costs of equity for each phase of the model. This feature allows an analyst to refine his valuation

[14] Id., pp. 108-109 (emphasis added).

estimate by changing the expected cost of equity in line with the analyst's estimate of the changing risk characteristics of the firm being valued. My model does not assume changing payout ratios nor does it utilize betas. Because it assumes that the cost of equity changes in each phase, Dr. Damodaran's 3-stage model cannot be used to solve for a cost of equity.

B. The Risks Of Supplying Unbundled Network Elements In Massachusetts Do Not Justify The Use Of DCF Comparison Groups That Include Non-Telephone Companies.

1. TELRIC cost principles do not require the Massachusetts DTE to assume that Verizon-Massachusetts faces intense competition in the wholesale UNE market regardless of the facts.

Q. DR. VANDER WEIDE CLAIMS THAT YOUR COST OF CAPITAL ESTIMATE IS INCONSISTENT WITH THE FORWARD-LOOKING ECONOMIC COST PRINCIPLES ESTABLISHED BY THE FCC. [VANDER WEIDE REBUTTAL, P. 2] IS THIS CORRECT?

A. No. Dr. Vander Weide overlooks key provisions of the FCC August 8, 1996 Order which provide guidance for the determination of costs of capital associated with UNEs.

Dr. Vander Weide states that:

> The forward-looking economic cost principle is economically relevant only in a competitive market for telecommunications services. Thus, the forward-looking economic cost principle, at its heart, is based on the assumption that the market for local exchange services is fully competitive. [Vander Weide Direct, pp. 35-36]

> A proper definition of the cost of capital for use in Verizon MA's forward-looking cost studies is based on the assumption that the market for local exchange services is competitive. [Vander Weide Direct, p. 48]
>
> The FCC's cost study principles require that cost studies "replicate…the conditions of a competitive market" for unbundled network elements. [Vander Weide Direct, p. 44]
>
> I estimated the incumbent LEC's market cost of capital under the assumption that the market for UNEs is competitive. Since facilities-based competition is a substitute for UNEs, and facilities-based competition is vigorous, the market for UNEs, in fact, is competitive. [Vander Weide Rebuttal, p. 32]

Dr. Vander Weide also stated [Vander Weide Rebuttal, p. 2] that the FCC required the "assumption of a competitive telecommunications market." These erroneous foundational assumptions are entirely contrary to the purpose of the 1996 Act and are indisputably contradicted in paragraphs 688 and 702 of the FCC August 8, 1996 Order, which I have cited in my May 1, 2001 direct testimony.

Q. DID THE FCC IN FACT CONSIDER AND EXPLICITLY REJECT THE ASSUMPTION OF FULL COMPETITION FOR TELRIC PURPOSES?

A. Yes. At paragraph 688 of the FCC's August 8, 1996 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. DR. VANDER WEIDE STATES THAT YOU USE A "MONOPOLY ASSUMPTION." [VANDER WEIDE REBUTTAL, P. 21] IS THAT CORRECT?

A. No. My approach estimates a *forward-looking* cost of capital as required by TELRIC (¶700 of the August 8, 1996 Order), which impounds all of the forward-looking risk that the market anticipates, including risks of future competition if they are relevant. Dr. Vander Weide has stated his belief that "local service is competitive in Massachusetts." [Vander Weide Rebuttal, p. 17] Therefore, according to Dr. Vander Weide's own logic and belief, my market-based approach already fully reflects the risk of a competitive market. As I note below, however, Verizon's economic consultant has stated that TELRIC requires a monopoly assumption.

Q. HAS ANY COURT AGREED WITH YOU ABOUT THE RISK ASSUMPTIONS IMPLIED BY THE TELRIC STANDARD?

A. Yes. In the 1997 UNE proceeding before the Delaware PSC, Dr. Vander Weide argued for Bell Atlantic, as he does again here in Massachusetts for Verizon, that the TELRIC standard requires state commissions to assume that the supplier of unbundled network elements faces intense competition in the wholesale market. The Delaware Public Service Commission rejected this argument for the same reasons I offer here. Bell Atlantic appealed to the United States District Court in Delaware. The court upheld the Delaware Commission on this point, again for the same reasons I have offered here:

> Bell points to an apparent contradiction in assuming instantly competitive prices for network elements (even though no such competition now exists) but, in the context of determining cost of capital, assuming little competition and, consequently, low costs of capital. … The Telecommunications Act attempts to recreate the prices that a

> hypothetical efficient company would charge for its network elements and services in a competitive market. Indulging in this fiction, however, does not change the fact that ILECs like Bell do not face the same competitive risks as firms operating in a competitive market. Indeed, ILECs have had no competition for decades, and they will face little competition in the market for network elements in the near future. *See August 8, 1996 Order* ¶ 702, at 353. Therefore, in introducing competition in the local telephone market, it makes perfect sense to recreate competitive prices while acknowledging that the current lack of competition warrants reduced costs of capital.[15]

Q. HAS ANY CONSULTING FIRM TO VERIZON STATED WHAT LEVEL OF COMPETITION SHOULD BE ASSUMED FOR TELRIC PURPOSES?

A. Yes. National Economic Research Associates (NERA) is a consultant to Verizon. Dr. William Taylor, Verizon's economic witness in multiple TELRIC proceedings, is a senior vice president with NERA. In the New York UNE cost proceeding, an excerpt of a report authored by NERA, was entered as evidence as Exhibit 408. (See Attachment JH-12.) That excerpt states in part:

> In terms of the more general concept of incremental costs, TELRIC maintains the following specific assumptions.
>
> First, the business decision being modeled is that of a hypothetical local exchange carrier that offers unbundled elements to retail providers (possibly itself) at undifferentiated prices. Hence the increments in question are the total volume for the elements demanded by the retail providers.
>
> Second, the time horizon over which the ILEC offers the wholesale elements is assumed to be the longest of the long-run. *Implicit in this*

[15] *Bell Atlantic-Delaware, Inc. v. McMahon*, 80 F.Supp.2d 218 (D. Del. 2000) at 240 n. 19.

> *definition are the assumptions that (1) the ILEC will effectively be a monopolist in the provision of network elements for the indefinite future* and (2) competitors will need to obtain such elements to compete over this time frame.[16] [footnotes omitted; *emphasis added*]

2. Dr. Vander Weide exaggerates the competitive risk of VZ-NE's local telephone service generally and fails to distinguish between the competitive risks of providing UNEs at wholesale and providing local telephone services at retail.

Q. HAS ANY COURT NOTED DR. VANDER WEIDE'S FAILURE TO DISTINGUISH BETWEEN THE COMPETITIVE RISKS OF PROVIDING UNES AT WHOLESALE AND PROVIDING LOCAL TELEPHONE SERVICES AT RETAIL?

A. Yes. In *Bell Atlantic-Delaware, Inc. v. McMahon*, 80 F.Supp.2d 218, 240 (D.Del. 2000), the court stated as follows (emphasis in original):

> In assessing Bell's case for an elevated cost of equity, the Hearing Examiners criticized the testimony of Bell's expert, Dr. James Vander Weide. The Examiners noted that Vander Weide based his cost of equity on the risk associated with Bell's retail business instead of on the future demand for Bell's network elements that it will sell at *wholesale*. AT&T's expert, Bradford Cornell, also criticized Vander Weide's analysis as "ignor[ing] the critical fact that the business at hand in this proceeding is *not* local retail phone service that already exists, but rather the new business of leasing of network elements at *wholesale* for use in providing competitive phone services to an existing *retail* market." [citation omitted] The distinction between wholesale and retail is crucial.

[16] Excerpt from "An Economic Evaluation of Network Cost Models", NERA, August 7, 2000, Exhibit 408, State of New York Public Service Commission, *Proceeding on Motion of the Commission to Examine New York Telephone Company's Rates for Unbundled Network Elements*, Case 98-C-1357.

> Retail competition is competition for the end user of telephone service. That sort of competition is not at issue when determining the risks associated with leasing unbundled network elements (e.g., loops and switches) at wholesale. The risks associated with leasing "bottleneck" network elements at wholesale is less than that associated with competition for retail service. *See August 8, 1996 Order* ¶ 702, at 353 (noting that network elements "generally are bottleneck, monopoly services that do not now face significant competition"). This is so because Bell often is the only provider of these network elements, and it is to Bell that new entrants must come to lease or purchase loops, switches, or other network elements. Thus, even if retail competition intensifies, Bell's prominence as a wholesale provider of network elements will remain largely unaffected—at least until new entrants build their own networks. [footnote omitted] Accordingly, the Hearing Examiners correctly rejected Vander Weide's testimony as impermissibly attributing the risks of retail competition to the competition in the sale of unbundled network elements. *See August 8, 1996 Order* ¶691, at 348 (explaining that, "[o]nly those costs that are incurred in the provision of network elements in the long run shall be directly attributable to those elements").

Q. IN HIS REBUTTAL TESTIMONY DR. VANDER WEIDE HAS ARGUED THAT SIGNIFICANT FACILITIES-BASED COMPETITION ALREADY EXISTS FOR LOCAL EXCHANGE SERVICES IN MASSACHUSETTS, AND INVESTORS EXPECT FUTURE COMPETITION TO INCREASE RAPIDLY. [VANDER WEIDE REBUTTAL, P. 24] WHAT IS YOUR RESPONSE TO THIS ARGUMENT?

A. I have reviewed the evidence that Dr. Vander Weide claims shows the existence of substantial competition in Massachusetts. In general his examples do not clearly distinguish between facilities offered by network competitors, and end users which are retail customers of competitors but ultimately use VZ-NE's network elements on a wholesale basis. This fails the crucial distinction correctly affirmed by the Delaware District Court. As stated by ABN Amro in its January 20, 2000 report covering Bell Atlantic, for example, 1.1 million access lines that

Bell Atlantic lost to retail competition as of the close of the third quarter of 1999 are *now provided by Bell Atlantic on a wholesale basis*.[17] In its August 2000 announcement of quarterly results Verizon stated that its "wholesale business provid[es] nearly 2.9 million switched access lines and 541,000 unbundled loops."[18] To the extent that competitors are using Verizon's network elements, Bell Atlantic retains those facilities revenues and has lost nothing on the UNE level, which is the sole subject of this proceeding.[19] Unless Verizon proves that the wholesale network facilities business, as opposed to the retail local exchange businesses, has become dramatically competitive, it fails with respect to at least one element of its burden of proof required by paragraphs 680 and 702 of the FCC August 8, 1996 Order.

Q. DOES DR. VANDER WEIDE CITE ANY EVIDENCE REGARDING THE NUMBER OF LINES THAT ARE ACTUALLY PROVIDED BY CLECs IN MASSACHUSETTS?

A. Yes. In referring to Dr. Taylor's declaration in the Massachusetts Section 271 filing before the FCC, he notes that competitors served 418,000 lines over their own facilities [Vander Weide Direct, p. 28]. Even if this were true, that number amounts to only 8.8% of total end-user lines reported by the FCC for local exchange in its most recent data on local competition (4,762,233

[17] ABN Amro also added that "[o]ffsetting these setbacks, Bell Atlantic added nearly 6 million lines from year-end 1995 through the third quarter of 1999, a 3.2% CAGR." (p. 24) [emphasis added].

[18] Verizon Press Release, "Verizon Communications Announces Second Quarter Results," August 8, 2000.

[19] In its May 15, 2000 "Telecom -Wireline" report Morgan Stanley Dean Witter highlighted that in the first quarter of 2000 it "saw some renewed strength in local and access revenues. Sales of value added services and strong wholesale business more than offset local competition."

lines).[20] But, more significantly, the 418,000 figure that Dr. Vander Weide takes from Dr. Taylor does not represent lines served exclusively over the facilities of competitive carriers. Dr. Taylor had derived that number by subtracting from 676,000 competitive lines reported by the FCC the lines served by UNE-P and resale.[21] Thus, all we know about the resulting 418,000 lines is that they are not served by UNE-P or resale. We do not know how many of these lines are served exclusively over the facilities of competing carriers. Without more information, it is possible that every single one of these lines rely on one or more network elements provided by Verizon, and indeed may rely predominantly on Verizon facilities. Dr. Vander Weide's hearsay reference to purported "evidence" not offered by Verizon in this proceeding does not prove that Verizon's network elements are subject to significant competition.

Q. DR. VANDER WEIDE ARGUES THAT THIS MINIMAL CLEC PENETRATION PORTENDS GREAT UNE COMPETITION IN THE FUTURE. HOW DO YOU RESPOND TO THIS ARGUMENT?

A. This is again the type of speculation about future developments that fails any burden of proof with respect to competitive risk. Just as one could speculate that there *might* be great facilities-based competition someday in the indefinite future, one could equally speculate that competition could move in other directions because the barriers to entry are so high. For example, one-time potential competitors such as Northpoint, Rhythms and Covad have disappeared into bankruptcy.

[20] FCC News, *Federal Communications Commission Releases Latest Data on Local Telephone Competition*, May 21, 2001, Table 6.

[21] Declaration of William E. Taylor, ¶ 25, filed on September 22, 2000 in FCC Docket No. 00-176.

Dr. Vander Weide also implies that if a few facilities-based competitors have made modest inroads, all is lost for Verizon in the eyes of investors. If this bleak outlook were true for the dominant network element provider, which touts itself as one of the largest and the most successful competitors in the national marketplace, one can only imagine how the market would view the prospects for competitors that currently have only a tiny sliver of the Massachusetts facilities market. However, the market does not appear to agree with Dr. Vander Weide's jaundiced assessment of Verizon, given publicly available estimates of the cost of capital for telephone holding companies. Verizon itself does not believe in such a bleak outlook for its future. Last year Verizon's President and Co-CEO Ivan Seidenberg trumpeted the company's confidence in its expected performance by announcing its aggressive buy-back of its shares.[22] More recently, Mr. Seidenberg noted that "[i]n the second quarter [of 2001], our long-distance business knocked the cover off the ball not only in Massachusetts but across our footprint ..."[23] On November 5, 2001, Verizon announced that Verizon residential customers in Massachusetts can now consolidate their local, long-distance, wireless, high-speed Internet access and optional services on a single bill.[24]

In sharp contrast to Dr. Vander Weide's dim view of Verizon's prospects due to purported competitive pressures, Brian Adamik of the Yankee Group has commented that:

[22] Verizon Press Release, "Verizon Responds to Recent Market Activity," July 21, 2000.

[23] Verizon Press Release, "Verizon Communications Second Quarter Earnings Highlighted by Strong Long-Distance and Wireless Sales," July 31, 2001.

[24] Verizon News Release, "Verizon and Verizon Wireless Team Up to Offer the Convenience of Single Bill for All Services," November 5, 2001.

As serious as California's electric power crisis is, it's a minor inconvenience compared to the looming disaster in the national telecommunications market created in the wake of the Telecom Act of 1996.

In telecommunications, we are rolling back the competitive progress made over the last ten years --- disabling the enabling industry of economic growth just when we need it most.

There is still no meaningful competition in residential local service. Worse, long distance and other famously competitive segments of the telecom market are moving towards monopoly control. As incredible as it seems, we are well on our way to re-creating regional versions of the old Bell System monopoly, controlled by the four giant regional Bell companies --- SBC, Verizon, Bell South and Qwest/U.S. West.

Those companies are gradually winning permission to enter long distance in individual states with their local service monopolies still intact. In those states, the regional Bell company becomes the only effective provider of combined local and long-distance service. For a company in that position, grabbing long-distance market share is like shooting fish in a barrel.

The Big Three long distance companies (AT&T, WorldCom/MCI and Sprint) were expected to become strong competitors in the new market for combined local and long distance. ***Yet the Bells have used their control of the local networks to keep long-distance carriers and other potential competitors out of the local market.*** Meanwhile, the Big Three are struggling for their future existence.

Their stock went into free fall over the last year. AT&T is restructuring itself into four independent businesses to reduce its dependence on voice long distance. WorldCom/MCI, a pioneer in long- distance competition, is now a takeover target by SBC, the biggest of the regional Bells. Speculation persists that Bell South wants to acquire Sprint at its current bargain price. Of the hundreds of smaller companies now competing in long distance, it's clear that only a handful will survive.

Many new companies launched to compete in local services are in financial collapse as they try to compete with the Bells while still

depending on them for local network support. Furthermore, at least eight high-speed Internet access providers went out of business or declared bankruptcy in late 2000 and early this year.[25]

Q. IS IT NOT POSSIBLE THAT FACILITIES-BASED COMPETITION, ALREADY EXISTING OR EMERGING IN THE FUTURE, WILL DEPRIVE VZ-NE OF REVENUES IN THE BUSINESS OF LEASING UNBUNDLED NETWORK ELEMENTS?

A. Though it is possible that some wholesale competition may develop, the market has already incorporated its expectations of such losses, if any, in the price of Verizon's stock. If such fears of competition were significant to investors' estimates of the required cost of capital, they have already accounted for them in valuing Verizon's stock.

Morgan Stanley states that,

> There is no doubt that competitive pressures are significant in the industry, with the recent opening up of New York to Bell Atlantic long distance heralding the new era. Nevertheless, we continue to firmly believe that the pie is growing, and those companies who execute effectively can succeed despite competitive pressures. The Bells have already absorbed significant local and toll competition from CLECs as well as significant rate reductions over the past several years. We also see the control of the customer, and the local loop combining with scale advantages to create significant competitive leverage for the local phone companies.[26]

Prudential Financial states that:

[25] Brian Adamik, Yankee Group, "The death of competitive telecom?", CBS MarketWatch.com, Inc., May 3, 2001 (emphasis added).

[26] Morgan Stanley Dean Witter, "Telecom - Wireline", January 21, 2000.

> While we believe any large incumbent telecommunications company faces challenges with culture and the integration of acquisitions, we believe Verizon is better positioned today than it has been in a long time. It is poised to rapidly gain market share in long distance and data markets. It is also likely to be one of the biggest beneficiaries as a weak market limits competition from competitive local exchange carriers (CLECs). …
>
> **Verizon's Low Business Market Share Highlights The Fact that The CLECs Will Likely Have a Difficult Time in Verizon's Markets.** It also highlights the fact that in many of Verizon's markets, there isn't much "low hanging fruit" for the CLECs and others to grab. There was a time when a CLEC could win business just by sending a sales rep to see a customer. The Bells were once notorious (in our view) for under-serving business customers. That has changed. Today, most segments of the business are now highly competitive, and we suspect the RBOCs now have much more to gain than to lose.
>
> ***Wholesale Services***
>
> Carriers should also be an important customer group for the foreseeable future. As with other RBOCs, Verizon serves most of the other carriers. This is particularly true in the densely populated markets of the Northeast. It can be extremely expensive to lay fiber in some of these markets, and Verizon is often the only economical choice for an alternative carrier.[27]

In that report, Prudential Financial used a 9.5% WACC to estimate a target price for Verizon's common stock.

Q. FROM THE STANDPOINT OF FINANCE THEORY, IS COMPETITIVE RISK GENERALLY ACCEPTED AS BEING RELEVANT TO THE DETERMINATION OF THE COST OF CAPITAL?

[27] Prudential Financial, "Wireline Telecommunications Services," May 29, 2001, pp. 131, 136.

A. As I thoroughly discuss in my direct testimony, capital market theory indicates that the market would not increase the cost of capital for an individual company based on competitive risks that investors can protect against by purchasing a diversified portfolio of stocks.

Q. IN HIS REBUTTAL TESTIMONY DR. VANDER WEIDE HAS TESTIFIED THAT TELEPHONE HOLDING COMPANIES ARE ACTUALLY LESS RISKY THAN THE LEC'S BECAUSE THEY HAVE DIVERSIFIED [VANDER WEIDE REBUTTAL, P. 40]. CAN THIS BE TRUE?

A. No. As I stated in my rebuttal testimony, engaging in businesses which are systematically riskier than the wholesale network element business, such as wireless or international ventures, will always make the risk of the telephone holding company greater than that of the wholesale network element business. Overall risk can never fall because of the acquisition of systematically riskier businesses.

In its last rate represcription proceeding the FCC stated that:

> It seems counterintuitive to suggest, as Bell Atlantic does, that diversification into riskier businesses could actually reduce the business risk of an RHC so that it is lower than the business risk of the regulated business.[28]

> However, the record does show that the RHCs are also involved in activities which are perceived as riskier than their regulated telephone business. We therefore find that we should give some weight in our decision to the possibility that a cost of equity estimate for an RHC as a

[28] FCC Order 90-315, In the Matter of Represcribing the Authorized Rate of Return for Interstate Services of Local Exchange Carriers, CC Docket No. 89-624, September 19, 1990, ¶ 84, p. 7517.

whole company might somewhat *overstate* the cost of equity for interstate access service alone.[29]

Q. IS IT LIKELY THAT THE ILECS HAVE BECOME SIGNIFICANTLY RISKIER AFTER THE SEPTEMBER 11 TERRORIST ATTACKS?

A. It does not appear so. An online article published on CBS.Marketwatch.com noted that:

> After all, there's nothing like a crisis, economic or otherwise, to reinforce faith in the tried and true. In this case, that's the big local phone companies.
>
> …the downturn in the U.S. economy has threatened the livelihood of many independent local carriers, better known as CLECs in the industry. The terrorist attack, by damaging the economy even further, has only exacerbated that problem. The result: fewer companies are likely to switch phone service in the near future.
>
> "Rightly or wrongly, for small and medium businesses the Baby Bells are a safe bet," said analyst Danny Zito, who covers smaller carriers at Lehman Brothers.
>
> **Rivals laid waste**
>
> Indeed, in the phone sector, the fallout from the attack is likely to fall entirely on smaller independents. Even before Sept. 11, they had been struggling to generate new sales and raise more cash to fund their businesses. Many had gone belly up.
>
> …In the local phone market, the customer freeze couldn't have come at a worse time. These days, every new dollar is vital for smaller phone carriers struggling to survive. Most have large debts and need to spend more money to attract new business.

[29] *Id*., ¶ 86, p. 7517 (emphasis added).

> … "It's even going to be that much more difficult for CLECs to get financing, and you are going to see more fall by the wayside," [Thomas] Morabito [of McDonald Investments] said.
>
> …With fewer competitors and more growth opportunities, the Baby Bells have naturally become a safe haven for anxious investors. Since the attack, for example, Verizon has climbed more than 9 percent to $55.39 even as the Dow Jones Industrial Average has fallen 8 percent.
>
> …Said analyst Morabito: "In a fearful market, most investors are heading for the stability of the Baby Bells."[30]

3. Dr. Vander Weide has not offered plausible or consistent reasons why telephone companies should not form the appropriate DCF comparison group.

Q. WHAT REASON DOES DR. VANDER WEIDE GIVE FOR USING THE S&P INDUSTRIALS AS A SET OF COMPANIES THAT ARE PURPORTEDLY COMPARABLE TO VERIZON?

A. He states that:

> Since the S&P Industrials are a well-known sample of publicly-traded competitive companies whose risk, on average, approximates the risk of providing telecommunications services 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 local exchange services on a forward-looking basis. [Vander Weide Direct, pp. 48-49]

Notably, Dr. Vander Weide again offers no proof for this assertion.

[30] Bartash, Jeffry, CBS.Marketwatch.com, October 2, 2001, 3:30 AM ET

Q. YOU PREVIOUSLY CITED DR. VANDER WEIDE'S BELIEF THAT THE UNE MARKET IS ALREADY COMPETITIVE. IF SO, COULD HE HAVE JUST USED A SAMPLE OF TELEPHONE HOLDING COMPANIES?

A. Of course.

Q. WHAT ARGUMENTS DOES DR. VANDER WEIDE CURRENTLY OFFER FOR NOT USING THE CLOSEST COMPARABLE COMPANIES?

A. Dr. Vander Weide's reasons are as follows:

> The DCF and CAPM Models provide more uncertain estimates of the cost of equity for companies such as the THCs that are experiencing radical restructuring and profound regulatory, organizational and technological change. In addition, the four or five THCs are simply too small a group to obtain reliable cost of equity estimates. [Vander Weide Rebuttal, p. 47-48]

Q. WHAT ARGUMENT DID DR. VANDER WEIDE OFFER IN THE RECENT NEW YORK UNE COST PROCEEDING?

A. In his New York UNE cost proceeding rebuttal testimony, he had a different argument. Dr. Vander Weide argued that telephone holding companies either involved in mergers or subject to merger speculation could not be used as proxies for other telephone holding companies because "the projected earnings growth associated with the mergers is not reflected in the analysts' growth rates" used in DCF analyses. [Vander Weide New York responsive testimony, p. 30] he assumed that the stock prices would immediately rise upon the merger news and concluded that the DCF cost of equity would be biased downward. In support of his claim, Dr. Vander

Weide produced in his New York responsive testimony an exhibit showing gradually rising I/B/E/S forecast growth rates for several merging telecommunications companies.

I showed that these data did not support Dr. Vander Weide's claim. First, Dr. Vander Weide assumed that the increase of I/B/E/S forecast growth rates over the last several years resulted solely from mergers. However, each of the companies selected by Dr. Vander Weide has engaged in numerous high-growth endeavors during the period illustrated in his exhibit. Obviously, a far greater proportion of growth rate increases would derive from high-growth businesses than would arise from the cost cutting measures which mergers make possible. Industry analysts have stated that "data and wireless continue to expand [LECs'] piece of the revenue pie."[31] ABN AMRO reiterated that it saw "three catalysts of Bell Atlantic growth: high-speed data, global wireless and long-distance entry."[32] Verizon's international business segment, as an example, grew by 18.6% in 2000 and 21.2% in 1999.[33]

Second, had Dr. Vander Weide investigated these mergers, he would have found that the stock price of at least one of the companies declined after the announcement of the merger.[34] A decline in the stock price would result in a *higher* cost of equity if DCF model calculations were performed keeping all other parameters unchanged. Moreover, after the

[31] Morgan Stanley Dean Witter, "Telecom - Wireline", May 15, 2000.

[32] ABN AMRO, "Bell Atlantic Corporation", January 20, 2000.

[33] Verizon Communications Inc. SEC Form 10-K405 for the period ending 12/31/00.

[34] SBC stock declined after the announcement of each of its three mergers: SBC/Pacific Telesis, SBC/SNET and SBC/Ameritech. In three other mergers mentioned by Dr. Vander Weide, all stocks declined after the announcements except for Bell Atlantic stock in connection with its merger with NYNEX.

merger was announced the aggregate market capitalization of the two merging companies went down in 5 out of 6 cases.

Another example in the news was the failed WorldCom/Sprint merger. When U.S. antitrust officials announced their intentions to investigate the planned merger, Sprint's stock price *rose* by 8.7% instead of declining. The day the Department of Justice filed suit to block the merger, WorldCom's stock price *increased* by 12.28%, while Sprint's stock price decreased by 9.56%. Contrary to Dr. Vander Weide's assertions, in the instances where a company's stock price is depressed because of merger anticipation, such as MCI WorldCom's stock, a DCF calculation would have provided a higher, not lower cost of equity estimate.

Q. HAS DR. VANDER WEIDE ATTEMPTED TO DETERMINE WHICH COMPANIES IN HIS S&P INDUSTRIAL SAMPLE ARE SUBJECT TO MERGER OR ACQUISITION SPECULATION IN THIS PROCEEDING?

A. No. And it is very ironic that Dr. Vander Weide does not cull out telephone holding companies that he suggested would yield downwardly-biased cost of equity estimates in the New York UNE cost proceeding. While Dr. Vander Weide has argued that mergers and merger speculation are important to the selection of appropriate comparables, he has not analyzed the companies in his sample to determine which ones are in industries that have or are anticipating merger activity. Standard & Poor's itself acknowledges that "[t]he S&P 500 is a great list of merger candidates -- the companies are well known and widely followed on Wall Street. The list is one of the first places an investment banker turns when searching for a big target."[35]

[35] www.spglobal.com/howmany.html.

Other examples of industries represented in the S&P Industrials that have been involved in substantial merger activity are the banking industry (Wells Fargo, Chase Manhattan and US Bancorp merged with various smaller banks); the chemical industry (Eastman Chemical, Great Lakes Chemical have been involved in mergers); the food and beverages industry (Bestfoods, ConAgra, General Mills, HJ Heinz, Seagram, Kellogg participated in mergers); the entertainment industry (Time Warner merger with AOL, CBS with Viacom); the newspaper industry (Times Mirror merged with Tribune), etc.

Q. HAS DR. VANDER WEIDE ATTEMPTED TO DETERMINE AND CULL OUT COMPANIES IN HIS S&P INDUSTRIAL SAMPLE THAT ARE SUBJECT TO RESTRUCTURING, OR TO REGULATORY, ORGANIZATIONAL OR TECHNOLOGICAL CHANGE WHICH IN HIS VIEW WOULD MAKE DCF COST OF EQUITY ESTIMATES MORE UNCERTAIN?

A. No, he has not.

Q. IN YOUR EXPERIENCE, HAS DR. VANDER WEIDE EVER ACKNOWLEDGED THAT TELEPHONE HOLDING COMPANIES ARE APPROPRIATE COMPARABLES FOR OTHER TELEPHONE HOLDING COMPANIES?

A. Not that I can recall. For example, Dr. Vander Weide proposed the use of the S&P 500 to verify the reasonableness of the USTA cost of equity estimate in the FCC's access charge rate

represcription proceeding completed in 1990, well before the 1996 Act.[36] The FCC properly rejected the use of Dr. Vander Weide's index approach in the 1990 proceeding.[37] Dr. Vander Weide's longstanding advocacy of S&P Index companies as a DCF proxy group for local telephone companies clearly predates the recent regulatory and competitive developments that ostensibly justify his approach.

Q. DR. VANDER WEIDE OBJECTS TO YOUR USE OF A SAMPLE THAT ONLY INCLUDES FIVE TELEPHONE COMPANIES. IS IT PREFERABLE TO USE A LARGER SAMPLE OF NONCOMPARABLE COMPANIES AS HE ADVOCATES?

A. Absolutely not. The purpose for using a larger sample, when there are enough comparable companies that can be included in that larger sample, is to reduce measurement error in order to arrive at averages that more closely represent the true mean for the comparable company group. Even if your sample by necessity is not particularly large however, the averaging process reduces measurement error.

In contrast, however, averaging over a group of ***noncomparable*** companies does not yield a mean that in any way measures the parameter you are attempting to estimate for the subject company or for its industry.

As Myers and Borucki put it:

[36] "Bell Atlantic asserts that because the S&P 500 is a group of large industrial firms, it is an excellent benchmark for determining the interstate access cost of equity and can be used to verify the reasonableness of the results of the USTA cluster analysis. USTA argues that the S&P 400 is a proxy for the competitive marketplace." FCC Order 90-315, In the Matter of Represcribing the Authorized Rate of Return for Interstate Services of Local Exchange Carriers, CC Docket No. 89-624, September 19, 1990, ¶144, p. 7524.

[37] *Id*. at ¶162, P. 7526.

> In real life, errors in estimating investors' forecasts of future growth are inevitable. The errors will occur even if all the DCF method's assumptions are satisfied. This does not invalidate the method; all approaches to measuring the cost of equity are liable to random error. *Responsible analysts attempt to average across similar companies whenever possible*.[38]

C. The S&P Industrial Companies Selected By Dr. Vander Weide Are Not A Valid Comparison Group For A DCF Analysis Of The Cost Of Equity Of The Network Element Business.

Q. HAS ANY COURT EVALUATED THE LEGITIMACY OF DR. VANDER WEIDE'S USE OF S&P INDUSTRIAL COMPANIES AS COMPARABLES FOR TELEPHONE COMPANIES?

A. Yes. The District Court in Delaware, in upholding the decision of the Delaware Public Service Commission in 1997 to approve a weighted average cost of capital of 10.28% for UNE pricing, quoted with approval the following findings:

> The [Delaware PSC Hearing] Examiners also discounted Vander Weide's analysis because he based his cost of equity calculation on the assumption that Bell's business was as risky as that of a Standard & Poor's ("S&P") 300 industrial firm. … *Because these S&P firms employ a variety of technologies and enjoy a wide array of market shares, the Hearing Examiners concluded that the risks faced by these firms said little about the risk Bell faced in the market for unbundled network elements.* …

[38] Stewart C. Myers and Lynda S. Borucki, "Discounted Cash Flow Estimates of the Cost of Equity Capital—A Case Study," *Financial Markets, Institutions & Instruments*, vol. 3, no. 3, New York University Salomon Center, 1994, p. 17. [*emphasis added*].

> Instead, they accepted AT&T's assessment of Bell's risk, which it premised upon the risk experienced by other telephone holding companies.

Bell Atlantic-Delaware, Inc. v. McMahon, 80 F.Supp.2d 218, 241 (D.Del. 2000) (citations omitted, emphasis added).

D. Dr. Vander Weide's Miscellaneous Criticisms of My DCF Analysis of Equity Costs Are Without Merit.

Q. DR. VANDER WEIDE PROVIDES MANY EXAMPLES TRYING TO SUPPORT THE USE OF QUARTERLY COMPOUNDING. DOES HE UNDERSTAND YOUR POINT REGARDING WHY THE MASSACHUSETTS DTE SHOULD NOT USE QUARTERLY COMPOUNDING?

A. No. Dr. Vander Weide forgets that UNE rates set by this Commission and other state commissions are amounts paid to companies like VZ-NE, not to investors. Dr. Vander Weide's method of calculation would therefore give VZ-NE the benefit of quarterly compounding which it would not otherwise get. As I noted in my direct testimony, this is best understood by comparing VZ-NE to a company whose prices are completely unregulated. Times Mirror Corporation, for example, a newspaper publisher, received its cash flows from subscribers approximately monthly. It then could reinvest those funds monthly to increase its return on a monthly compounded basis. When Times Mirror paid dividends to its investors, it did so quarterly. It can be clearly seen, however, that Times Mirror never got the benefit of quarterly compounding. If VZ-NE were allowed a quarterly compounded rate, its investors

would effectively get the benefit of quarterly compounding twice, first when VZ-NE gets it, and second when investors reinvested their quarterly dividends received from Verizon.

The Georgia Commission correctly observed in a Bell South UNE cost proceeding that:

> Using the quarterly version of the DCF model will produce higher estimates of the cost of equity. However, it is not necessary for ratepayers, or in this case purchasers of services, to be required to provide that added or incremental return. Shareholders can obtain this increment to the return simply by investing the dividends they receive.[39]

Q. DR. VANDER WEIDE SAYS THAT YOUR FAILURE TO MAKE AN EQUITY FLOTATION COST ALLOWANCE IS AKIN TO IGNORING ALL THE EXPENSES OF THE COMPANY [VANDER WEIDE REBUTTAL, PP. 58-60]. IS THIS TRUE?

A. Of course not. For example, Dr. Vander Weide does not make a salary cost adjustment to the cost of capital, nor does he adjust it for advertising costs, lobbying costs, (or even for expert witness costs). Similar to flotation costs, these adjustments do not need to be made to the cost of capital because the market anticipates such costs and incorporates them in the cash flow expectations for the company. Adding a flotation cost adjustment would in effect double count the cost of financing.

[39] In re: Review of Cost Studies, Methodologies and Cost-Based Rates for Interconnection and Unbundling of BellSouth Telecommunications Services, Order Establishing Cost-Based Rates Georgia Public Service Commission, Docket No. 7061-U, Dated Decided: October 21, 1997, p. 25.

E. Dr. Vander Weide's Criticisms of My CAPM Analysis of Equity Costs Are Also Unfounded

Q. DR. VANDER WEIDE SUGGESTS THAT YOU SHOULD HAVE ABANDONED THE USE OF BARRA BETAS. WHAT DO YOU MAKE OF THIS CRITICISM?

A. I find it incomprehensible. I indicated that I used the predicted BARRA betas because I was not able to calculate a 5-year historical beta for the then newly-formed Verizon. In my prior testimonies over several years, I had used BARRA betas as a reasonableness check on my historical betas. Dr. Vander Weide seems to suggest that BARRA could not supply a predicted beta for Verizon because of data limitations. But that's just wrong. BARRA did in fact provide a predicted beta for Verizon as of June 2000 as part of its beta service and did not indicate any lack of confidence in it.

Q. DR. VANDER WEIDE CLAIMS THAT BARRA PREDICTED BETAS ARE CALCULATED USING EXPLANATORY VARIABLES THAT ARE ALL CALCULATED FROM HISTORICAL DATA. IS HE CORRECT?

A. No. Dr. Vander Weide is simply misinformed. For example, one of the variables used by BARRA is the analysts' mean growth forecast, which is forward-looking by definition and not historical data.

Q. DR. VANDER WEIDE IMPLIES THAT YOU SHOULD HAVE INSTEAD USED VALUE LINE BETAS [VANDER WEIDE REBUTTAL, P. 62]. ARE VALUE LINE BETAS CALCULATED USING PURELY HISTORICAL FIVE-YEAR RETURNS?

A. Yes. Therefore, according to Dr. Vander Weide's own logic, Value Line's beta for Verizon is precisely the beta I should *not* be using because of "data factors," since it is purely a historical construct.

Q. HAS VALUELINE COMPUTED BETAS FOR VERIZON SINCE THE MERGER OF BELL ATLANTIC AND GTE?

A. It does not appear so. For example, the April 6, 2001, Value Line report on Verizon produced by Dr. Vander Weide in response to a discovery request indicates that the beta is "NMF",[40] meaning that Value Line could not measure it according to its techniques. This report was issued over nine months after the close of the merger.

Q. WHAT IS YOUR RESPONSE TO DR. VANDER WEIDE'S CRITICISM REGARDING ADJUSTMENTS FOR BETAS LESS THAN 1?

A. First, Dr. Vander Weide fails to point out that there is no general agreement that betas should be adjusted, and if so, how they should be adjusted. The rationale for adjusting raw betas is to reduce measurement error. As I discuss extensively in my testimony, I attempt to adjust for measurement error through the process of averaging, a technique commonly employed. BARRA utilizes its own models for adjusting betas. According to BARRA studies, BARRA predicted betas have more than 16 times the predictive power of historical betas.[41] Ibbotson Associates, as another example, uses five year regressions of monthly returns against the S&P

[40] ATT-V 26-13.

[41] Barr Rosenberg, "Prediction of Common Stock Betas", Reprinted with permission from The Journal of Portfolio Management, Winter, 1985, on www.Barra.com/ResearchPub/NonBarraPub/pocs/pocs-j.html.

500 and weighs the individual company's beta with the average beta for the corresponding *industry*.[42] Compustat makes no adjustments to its betas.

Q. IS DR. VANDER WEIDE'S SUGGESTION THAT ONE SHOULD USE FIVE-YEAR HISTORICAL VALUE LINE BETAS CONSISTENT WITH HIS PRIOR TESTIMONY?

A. No. In many rebuttal testimonies filed in other states, Dr. Vander Weide has vigorously objected to the use of historical betas computed over a five-year time period because in his opinion they were not sufficiently forward-looking proxies for risk. It is therefore quite surprising that he now suggests that one can use five-year Value Line betas to support such an integral element of his rebuttal analysis.

In his 1994 testimony before the FCC, for example, Dr. Vander Weide specifically criticized MCI witness Kahal's use of Value Line betas for:

> fail[ing] to recognize that some of Value Line's risk indicators he relies on … encompass a five-year time period that is too long to reveal recent increases in the risk of investing in telecommunications.[43]

To "more accurately measure the changed risk of investing in telecommunications," Dr. Vander Weide computed two-year weekly betas.

In New Jersey, Dr. Vander Weide testified:

> Q. Did you also perform a capital asset pricing model (CAPM) analysis of the cost of equity?

[42] Ibbotson Associates, *SBBI: Valuation Edition 2000 Yearbook*, pp. 96-97.

[43] Affidavit of Dr. James H. Vander Weide In Support of Reply Comments of Bell Atlantic, Before the Federal Communications Commission, CC Docket 94-1, June 29, 1994, p.19-20, ¶32.

A. No. One of the major inputs to the CAPM is beta—a measure of the relative risk of a security to that of the market as a whole. Betas are estimated using historical security prices, usually over the past 60 month period. The use of a methodology which relies on historical data over this lengthy period of time would be particularly inappropriate in this case. The enormous changes that the telecommunications industry has recently undergone would render such historical measures of relative risk virtually useless in estimating the forward-looking cost of equity.[44]

Recall that Dr. Vander Weide's primary argument in this proceeding for not using telephone holding companies for his comparable sample is his belief that "the THCs … are experiencing radical restructuring and profound regulatory, organizational and technological change."

In his 1996 rebuttal testimony in the same New Jersey proceeding, Dr. Vander Weide suggested that *one-year* betas would be appropriate.[45] In his 1997 rebuttal testimony before the State Corporation Commission of Virginia, Dr. Vander Weide calculated *two-year* weekly betas.[46]

Q. HAS DR. VANDER WEIDE TESTIFIED REGARDING FORWARD-LOOKING BETAS?

[44] Direct Testimony of Dr. James H. Vander Weide on Behalf of Bell Atlantic-New Jersey, Docket No. TX95120631, November 4, 1996, p. 21, at line 10-20.

[45] Rebuttal Testimony of Dr. James H. Vander Weide on Behalf of Bell Atlantic-New Jersey, Docket No. TX95120631, December 20, 1996, p.33, at lines 7-12.

[46] Rebuttal Testimony of Dr. James H. Vander Weide on Behalf of Bell Atlantic-Virginia, Case No. PUC970005, June 10, 1997, p. 95.

A. Yes. Dr. Vander Weide stated in his direct testimony filed on behalf of Bell Atlantic-New Jersey on November 4, 1996, that "if one is to use such a method [CAPM], one should use a forward-looking beta which measures the future risk of the company."[47]

Q. HAVE YOU CONSIDERED FORWARD-LOOKING BETAS?

A. I not only considered them, I in fact used them in my CAPM analysis. As already noted, I used predicted, forward-looking betas provided by BARRA. These predicted betas include changing fundamental and market data which are incorporated in the beta.

Q. REGARDING THE EQUITY RISK PREMIUM TO BE USED IN THE CAPM, DR. VANDER WEIDE HAS TESTIFIED THAT IBBOTSON ASSOCIATES' 2001 YEARBOOK CONTINUES TO SPECIFICALLY RECOMMEND THAT A HISTORICAL RISK PREMIUM BASED ON THE 1926-PRESENT PERIOD SHOULD BE USED [VANDER WEIDE REBUTTAL, P. 68]. WHAT DOES IBBOTSON ASSOCIATES IN FACT SAY IN THE 2001 YEARBOOK?

A. It says specifically that "[a] proper estimate of the equity risk premium requires a *data series long enough* to give a reliable average without being unduly influenced by very good and very poor short-term returns."[48] It also says that the "period starting with 1926 is *representative* of what can happen: it includes high and low returns, volatile and quiet markets, war and peace, inflation and deflation, and prosperity and depression."[49] Ibbotson Associates also continues

[47] Direct Testimony of James H. Vander Weide on Behalf of Bell Atlantic-New Jersey, Docket No. TX95120631, November 4, 1996, p. 21.

[48] Ibbotson Associates, Yearbook 2000, Valuation Edition, p. 65 (emphasis added).

[49] *Id*., p. 66 (emphasis added).

that "because historical event-types (not specific events) tend to repeat themselves, long-run capital market return studies can reveal a great deal about the future."[50]

It is also worth noting that— while Ibbotson Associates disagrees with the approach— it explicitly acknowledges that some analysts calculate expected risk premia over shorter time periods.[51]

Q. DOES ROGER IBBOTSON HIMSELF STATE THAT THE EQUITY RISK PREMIUM ESTIMATE SHOULD ALSO CONSIDER FORWARD-LOOKING APPROACHES?

A. Yes. Roger Ibbotson, who is a professor of finance at Yale, states that:

> The historical payoff for risk is a good guide to the future risk premium, but it is *not perfect*. First, there is considerable estimation error even assuming the 74 years returns were drawn from a stationary distribution. …
>
> Another way to estimate the ERP [equity risk premium] is to recognize that the stock market is a part of the economy. … The supply side estimate of the stock market [risk premium] is *substantially lower than the historical ERP*. …
>
> Overall, *I think the best estimate of the ERP is to use some combination of the historical ERP and the supply side estimate of the ERP*. [52] [*emphasis added*]

[50] *Ibid*.

[51] *Ibid*.

[52] Research Roundtable: The Equity Premium, June 30, 2000. (http://ssrn.com/forum/).

In a recent article, Professor Ibbotson and Peng Chen of Ibbotson Associates adopted a combination of historical and supply side approaches to estimate the equity risk premium. They estimated that the equity risk premium was 4% in geometric terms and 6% on an arithmetic basis.[53]

Q. YOU MENTIONED EARLIER THAT DR. VANDER WEIDE SUGGESTS THAT YOU SHOULD ONLY CONSIDER THE FULL 1926-TO-PRESENT IBBOTSON DATA PERIOD FOR EQUITY RETURNS WHEN TRYING TO EVALUATE A RISK PREMIUM [VANDER WEIDE REBUTTAL, P. 68]. HAS DR. VANDER WEIDE FOLLOWED HIS OWN RULE CONSISTENTLY?

A. No. In his direct testimony on behalf of GTE South filed in Virginia on June 9, 1995, Dr. Vander Weide chose the period starting in 1937 on the theory that it would be "most meaningful" to use S&P 500 data after the passage and implementation of the Public Utility Holding Company Act of 1935.

Q. YOU HAVE SHOWN THAT PROFESSOR IBBOTSON HIMSELF DOES NOT ADVOCATE SOLE RELIANCE ON HISTORICAL METHODS. DO OTHER FINANCIAL PROFESSIONALS UTILIZE FORWARD-LOOKING METHODS FOR ESTIMATING THE MARKET RISK PREMIUM?

A. Yes. I have provided numerous citations of leading scholars and practitioners on this subject in my direct testimony. Additionally, John Bogle, Founder and former Chairman of The Vanguard

[53] Ibbotson, Roger G., and Peng Chen, *The Supply Side of Stock Market Returns,* Yale ICF Working Paper No. 00-44, Yale International Center for Finance, June 2001

Group which runs mutual funds and has assets of over $550 billion, stated at the Financial Analysts Seminar Sponsored by the Association for Investment Management and Research that:

> Looking out over time, from the price levels in today's market, a 2% risk premium might be a reasonable guess for the coming decade. Indeed, many respected investment advisers might place the probable number at less than 2%.
>
> Well, I'm often wrong (seldom in doubt), so first let's explore what a normal equity premium might be. I went to the acknowledged authority on the subject, best-selling author ('Stocks for the Long Run') and Wharton School Professor Jeremy J. Siegel. He obligingly sent me a two-century history of equity premiums on U.S. stocks over long-term U.S. Treasury bonds. The average equity premium over this long, long period is 3.5%. I will leave it to you to decide what is a fair number to use today, but, for the rest of my analysis, I'm going to rely on this average.[54]

Another distinguished academic, 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*

[54] John C. Bogle, "The Riddle of Performance Attribution: Who's In Charge Here--Asset Allocation or Cost?" Remarks Before the Financial Analysts Seminar Sponsored by the Association for Investment Management and Research, At Northwestern University, Evanston, Illinois, July 20, 1997. (Published at www.vanguard.com).

> *time and at the present time can lead to significant undervaluation.*[55]
> [*emphasis added*]

Michael Mauboussin, Chief U.S. Investment Strategist at Credit Suisse First Boston and Adjunct-Professor at Columbia Business School, believes that the equity risk premium used in the CAPM model should be estimated *ex ante*:

> Ex-post definitions come with a lot of calculational baggage, most notably choice of time period and data non-stationarity. …[U]se a long-term discounted cash flow model to estimate expected return, and then subtract a long-term Treasury yield to estimate the ex-ante ERP. [56]

He believes that the risk premium has been in a range of 2-5% in recent years and states that Credit Suisse First Boston uses about 4.0%.

Eugene Fama, Professor of Finance at the University of Chicago, estimates the expected equity premium to be about 1-2%.[57] John Cochrane, Professor of Finance at the University of Chicago, believes that the risk premium is about or below 3-4%.[58]

Jay Ritter, Professor at the University of Florida, states:

> In the 1980s, I followed the textbook mantra that the equity risk premium should be based on extrapolating the historical average into the future. By the late 1980s, I began to realize how wrong this was, as the Japanese market soared. This approach predicted that in the 1990s there would be

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

[56] Research Roundtable: The Equity Premium, June 30, 2000. (http://ssrn.com/forum/).

[57] *Ibid.*

[58] *Ibid.*

> extremely high returns on Japanese stocks, just as today it implies that there will be unrealistically high returns on US stocks in the future.[59]

Q. HAS DR. VANDER WEIDE STATED IN THE PAST HIS BELIEF THAT THE MARKET RISK PREMIUM VARIES OVER TIME?

A. Yes. In his testimony before the State Corporation Commission of Virginia, Dr. Vander Weide stated that the equity risk premium over bonds "vary with the level of interest rates."[60]

Q. ISN'T THE IBBOTSON ASSOCIATES HISTORICAL APPROACH TO ESTIMATING THE EQUITY RISK PREMIUM FOUNDED ON THE THEORY THAT THE TRUE RISK PREMIUM IS STABLE OVER TIME?

A. Yes. Ibbotson Associates states that:

> [T]he expected equity risk premium is unobservable in the market and therefore must be estimated. … In using a historical measure of the equity risk premium, one assumes that what has happened in the past is representative of what might be expected in the future. In other words, the assumption one makes when using historical data to measure the expected equity risk premium is that the relationship between the returns of the risky asset (equities) and the riskless asset (Treasuries) is stable.[61]

Consequently, if Dr. Vander Weide believes that the risk premium varies with interest rates, he cannot believe in the Ibbotson approach as he now professes.

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[59] *Ibid.*

[60] Direct Testimony of Dr. James H. Vander Weide, Before the State Corporation Commission of Virginia, On Behalf of Central Telephone Company of Virginia, The Chesapeake and Potomac Telephone Company of Virginia, Contel of Virginia, Inc., GTE South Incorporated, United Telephone - Southeast, In., Case No. PUC920029, p. 48, at 1-5.

[61] Ibbotson Associates, *SBBI: Valuation Edition 2000 Yearbook*, p. 53.

Q. DR. VANDER WEIDE ARGUES THAT PROFESSOR CORNELL STATED IN HIS BOOK THAT THE IBBOTSON APPROACH TO ESTIMATING THE RISK PREMIUM IS APPROPRIATE. IS DR. VANDER WEIDE FAMILIAR WITH THE CURRENT THINKING ON THIS SUBJECT?

A. Apparently not. Professor Cornell's book cited by Dr. Vander Weide was published in 1993 and written some time before that date. Since 1993 a vast amount of literature has been published regarding the equity risk premium: Ibbotson and Brinson[62] and Blanchard[63] published their research findings in 1993; Siegel[64] in 1994 and 1998; Brown, Goetzmann and Ross[65] in 1995; Rappoport[66] in 1998; Glassman and Hassett[67] in 1999; Ibbotson and Chen in 2001,[68] etc. Numerous articles have also been published noting the low equity risk premium. In 1999 Professor Cornell published an entire book devoted to subject of the equity risk premium.[69] Professor Cornell concluded that the equity risk premium at the time of the writing of his book was in the range of 3.5% - 5.5%. Professor Ivo Welch of Yale surveyed 510 finance and

[62] Ibbotson, Roger, and Gary P. Brinson, *Global Investing: The Professional's Guide to the World Capital Markets*, McGraw-Hill, 1993, at p. 45.

[63] Blanchard, Oliver, "Movements in the Equity Premium", Brookings Papers on Economic Activity, 75 (2) 1993.

[64] Siegel, Jeremy, *Stocks for the Long Run*, Irwin, New York, 1994, and 2nd Edition, 1998.

[65] Brown, Stephen J., William N. Goetzmann and Stephen A. Ross, "Survival", The Journal of Finance, Vol. L, No. 3, July 1995.

[66] Rappaport, Alfred, *Creating Shareholder Value*, The Free Press, New York, 1998.

[67] Glassman, James K., and Kevin A. Hassett, *DOW 36,000: The New Strategy for Profiting from the Coming Rise in the Stock Market*, Times Books, 1999.

[68] Ibbotson, Roger G., and Peng Chen, *The Supply Side of Stock Market Returns*, Yale ICF Working Paper No. 00-44, Yale International Center for Finance, June 2001.

[69] Cornell, Bradford, *The Equity Risk Premium: The Long-Run Future of the Stock Market*, John Wiley & Sons, 1999.

economic professors and found that the consensus forecast for the 30-year arithmetic equity premium was about 5 to 5.5%.[70] This means that the geometric mean equity risk premium would be even lower. Professors Graham and Harvey did a survey of corporate chief financial officers and found their 10-year risk premium estimates to range between 3.6% and 4.7%.[71] My review of all of these sources indicates that a 5.5% premium over long-term Treasury bonds appears to be conservative, and may substantially overstate the actual current forward-looking expected risk premium.

Q. DR. VANDER WEIDE CLAIMS THAT HE HAS CALCULATED THE COST OF EQUITY FOR THE S&P 500 USING THE SAME METHODOLOGY THAT YOU USED FOR PRIOR TESTIMONIES BUT DID NOT DO FOR THIS PROCEEDING, AND ARRIVED AT A COST OF EQUITY OF 10.93%, HIGHER THAN MERRILL LYNCH'S COST OF EQUITY ESTIMATE OF 10.20%. [VANDER WEIDE REBUTTAL, PP. 63-64] ASSUMING THAT HE DID THIS CORRECTLY, DOES THIS CAUSE ANY CONCERN TO YOU?

A. Not at all. As explained in my direct testimony, this forward-looking cost of equity estimate was utilized as one of several analysis tools for estimating the equity risk premium. Assuming that Dr. Vander Weide's calculations are correct, this 10.93% estimate could also be used. Substituting 10.93% for 10.20% in Exhibit 6 to my direct testimony yields forward-looking estimates of 6.00% over the long-run expected one-month Treasury bill yield and 4.67% over

[70] Welch, Ivo, *The Equity Premium Consensus Forecast Revisited*, September 8, 2001.

[71] Graham J.R., and Campbell R. Harvey, "Expectations of Equity Risk Premia, Volatility and Asymmetry from a Corporate Finance Perspective," Draft: October 9, 2001.

the 20-year Treasury bond yield. However, in my CAPM calculations I used risk premia estimates conservatively *higher* than these estimates: 7.5% over long-run expected one-month Treasury bill yields and 5.5% over 20-year treasury bond yields.

Q. SHOULD THE FACT THAT MERRILL LYNCH ESTIMATED AN EXPECTED RETURN (I.E., THE FORWARD-LOOKING COST OF EQUITY) FOR THE MARKET OF 10.20% CAUSE DR. VANDER WEIDE TO QUESTION HIS HIGH COST OF CAPITAL ESTIMATE OF 12.95%?

A. Yes. Merrill Lynch is a sophisticated investment bank and also has been a financial adviser to Bell Atlantic through at least two mergers with other giant telephone holding companies. This is an obvious sanity check, similar to the costs of capital and discount rates used by analysts and other investment banks in fairness opinions.

Q. DR. VANDER WEIDE CLAIMS THAT YOU HAVE MISSTATED THE HISTORICAL EQUITY RISK PREMIUM CALCULATED OVER THE PERIOD 1926-1999 [VANDER WEIDE REBUTTAL, P. 68]. HAVE YOU?

A. No. He is again mistaken. Dr. Vander Weide incorrectly assumes that I have simply taken the arithmetic risk premium from the Ibbotson Associates Yearbook. Ibbotson Associates calculates its arithmetic mean risk premium by taking the difference between the average large company stock total returns (13.3%) and long-term government bond *income* returns (5.2%).[72] Contrary to Dr. Vander Weide's assumptions, I have calculated a range of risk premia using

[72] Ibbotson Associates, Stock Bonds Bills and Inflation 2000 Yearbook, pp. 124 and 185.

geometric and arithmetic averages. My calculation[73] of the arithmetic average differs from that used by Ibbotson Associates because I take the difference between the averages of large company stock total returns (13.3%) and long-term government bond *total* returns (5.5%).[74]

Q. DR. VANDER WEIDE CRITICIZES YOU FOR CONSIDERING GEOMETRIC MEAN AVERAGES IN ADDITION TO ARITHMETIC AVERAGES WHEN EVALUATING THE APPROPRIATE RISK PREMIA. HE SAYS THAT IBBOTSON ASSOCIATES ARGUES THAT YOU SHOULD ONLY LOOK AT THE ARITHMETIC MEAN WHEN ESTIMATING A HISTORICAL RISK PREMIUM. IS YOUR ANALYSIS DEPENDENT ON WHAT IBBOTSON ASSOCIATES SAYS?

A. No. My analysis considers the arguments and data of Ibbotson Associates and also of numerous other scholars and practitioners. Damodaran, for example, recommends and utilizes geometric averages.

Q. DOES DR. VANDER WEIDE RELY ON WHAT IBBOTSON ASSOCIATES SAY?

A. Dr. Vander Weide's reliance on the Ibbotson Associates approach is quite selective. As noted above, in prior testimony he did not accept its foundational theory that the equity risk premium is stable over time. He also ignores several other key propositions embraced by Ibbotson Associates in the Valuation Edition 2001 Yearbook. These propositions, if accepted, pull the linchpin from his entire analysis:

1. The cost of capital is always an expectational or forward-looking concept (p. 9);

[73] In my calculations, I utilized return data from both Ibbotson Associates and Dimensional Fund Advisers. Ibbotson Associates and DFA returns differ only due to minor rounding.

[74] Ibbotson Associates, Stock Bonds Bills and Inflation 2000 Yearbook, p. 124.

2. The risk of the loss of business to competitors is unsystematic (i.e., investors can diversify it away by also investing in other companies) so it is not entitled to a risk premium in the cost of capital for an individual company (p. 41);
3. Multi-stage DCF models give better estimates of the cost of equity than does the perpetual growth model which Dr. Vander Weide utilizes (p. 50);
4. The terminal stage growth-rate in the DCF model should be sustainable. An example of an indefinitely sustainable growth rate is the expected long-run growth rate of the economy. (p. 50)

Q. DR. VANDER WEIDE ARGUES THAT THE CONCEPT OF SURVIVORSHIP BIAS IN MEASURING HISTORIC WORLD EQUITY RETURNS FOR ESTIMATING AN EQUITY RISK PREMIUM DOES NOT APPLY TO STOCKS TRADING IN THE U.S. MARKET. IS THIS A LOGICAL INTERPRETATION OF THE THEORY?

A. No. His view, and in this instance, Ibbotson Associates' view,[75] is an extreme one. The theory postulates that historical U.S. stock returns overstate the returns you would have obtained if you had been an international investor and had also invested in stock markets which performed poorly relative to the U.S. stock market. In other words, using the historical returns of a single, successful national stock market to estimate future returns does not accurately reflect potential losses if a stock market were to perform poorly. As of 1925 for example, you would not have

[75] Ibbotson Associates does state that the survivorship bias evidence is "compelling on a worldwide basis." (The Valuation Edition 2001 Yearbook , Ibbotson Associates, p. 73).

known before the fact that the U.S. market was going to be successful. Even if you had invested solely in U.S. stocks, there was a chance that the U.S. market would have been one of the failures, and that you would have lost much if not all of your money.

Of course, investors planning to hold an international portfolio of stocks will estimate returns on the expectations for an international stock portfolio, not just on the returns derived from stocks of companies in a single country. Dr. Vander Weide seems to be saying with his argument that all investors in Verizon own or will purchase only U.S. stocks. This assumption is a baseless one. Verizon is one of the component companies of the S&P 500, an index whose stocks are widely held by giant pension, mutual fund and other managed portfolios, many of which are located or have investors outside of the U.S., or themselves have diversified into various international holdings.

One need only look at how Verizon currently describes itself to understand its global position:

> Verizon Communications is one of the world's leading providers of communications services. Verizon companies are the largest providers of wireline and wireless communications in the United States, with 112 million access line equivalents and 27 million wireless customers. Verizon International has investment interests in telecommunications companies in 19 countries, with a global presence that extends to 40 countries in the Americas, Europe, Asia and the Pacific. Verizon has 3.2 million proportionate access lines and 8.3 million proportionate wireless subscribers. It is a Fortune 10 company with approximately 260,000 employees and more than $65 billion in annual revenues.
>
> Verizon is superbly positioned to capitalize on worldwide growth trends that are transforming global telecommunications. Verizon Global Solutions Inc. is building a global network to provide seamless end-to-

> end communications by delivering data, voice, and internet solutions to customers around the world. Verizon's global network will link North America with major cities in Europe, Asia and Latin America, and provide intra-regional communications. Verizon's scale and scope make it the number one partner for anyone wanting to access the U.S. market.[76]

Dr. Vander Weide's view also poses a classic finance arbitrage. He is fundamentally saying that an investor in only U.S. stocks would have one cost of capital for Verizon, while an international stock investor would have a lower cost of capital for the same company. Therefore, one investor would apply the higher U.S. market-based risk premium and value the multi-national company at a lower price, while another investor would apply the lower world risk premium and value it at a higher price. Because the international investor can pay more for Verizon, even in the U.S. stock markets, it would bid up the price and arbitrage away price discrepancies caused by the local investor's parochial cost of capital.

II. DR. VANDER WEIDE HAS ASSUMED A CAPITAL STRUCTURE THAT IS INAPPROPRIATE FOR THE WHOLESALE BUSINESS OF SUPPLYING UNBUNDLED NETWORK ELEMENTS.

Q. DR. VANDER WEIDE OFFERS AN ELABORATE ARGUMENT AGAINST THE THEORETICAL SOUNDNESS OF USING A BUSINESS'S BOOK CAPITAL STRUCTURE. HE CLAIMS THAT YOU BASE YOUR COST OF CAPITAL ESTIMATE ON THE BOOK CAPITAL STRUCTURE FOR THE TELECOMMUNICATIONS BUSINESS. IS DR. VANDER WEIDE CORRECT?

[76] http://www.verizon.com/international/.

A. No. In fact, I clearly state in my testimony that the proper weights to be used for cost of capital calculations should be the long-run *target* financing weights that a rational, informed management team would employ *for the wholesale network element leasing business*. The market value capital structure of the wholesale network element leasing business is *not observable* because, as Dr. Vander Weide noted in his direct testimony, there are no publicly traded companies which solely conduct that business. [Vander Weide Direct, p. 48.] I also note that because the network element leasing business is less risky than the aggregate business of the telephone holding companies, the market value debt weights of the holding companies probably understate long-run target debt weights in the capital structure of the network element leasing business.

Consequently, I calculate a cost of capital range using the telephone holding companies' market value capital structure to determine the high side of the range (which provides the cost of capital for the telephone holding companies) and the book value capital structure to determine the low side of the range, with the midpoint of the range considered to be the best estimate of the cost of capital for the business of network element provision.

Q. DOES DR. VANDER WEIDE HIMSELF RECOGNIZE THAT THE TARGET MARKET CAPITAL STRUCTURE OF THE NETWORK ELEMENT WHOLESALING BUSINESS IS NOT OBSERVABLE?

A. Yes. At page 48 of his direct testimony he wrote that "…. at the present time, there are no publicly traded companies that have built telecommunications networks solely for the purpose of providing local exchange service in a competitive market." If there are no publicly-traded

companies that specialize in the local exchange business, there are clearly no publicly-traded network element wholesaling businesses. Dr. Vander Weide's own testimony makes clear that one cannot directly observe the capital structure of an ILEC, let alone of a network element leasing business.

Q. WHAT DO YOU MEAN BY THE TARGET MARKET CAPITAL STRUCTURE?

A. As Copeland, Koller and Murrin note:

> The theoretically correct approach to capital structure is to use a different WACC for each year that reflects the capital structure for the year. In practice, we usually use one WACC for the entire forecast. We also think in terms of a target capital structure rather than the current capital structure because at any point a company's capital structure may not reflect the capital structure expected to prevail over the life of the business. Capital structure might be affected by recent changes in the market value of the securities outstanding and the "lumpiness" of financing activities, particularly those involving securities offerings. Moreover, management may have plans to change the capital mix as an active policy decision. All these factors mean that future financing levels could be different from current or past levels.[77]

Q. DR. VANDER WEIDE ARGUES THAT YOU PROVIDE NO PROOF THAT THE USE OF A BOOK VALUE CAPITAL STRUCTURE TO ESTABLISH A LOWER BOUND FOR ESTABLISHING A COST OF CAPITAL RANGE IS CORRECT. DOES DR. VANDER WEIDE PROVIDE ANY PROOF THAT HIS CAPITAL STRUCTURE ESTIMATES ARE CORRECT?

[77] Copeland, Tom, Tim Koller, and Jack Murrin, *Valuation: Measuring and Managing the Value of Companies*, 3rd Edition, McKinsey & Co., 2000, p.203-204.

A. No. The logical flaw in Dr. Vander Weide's argument is obvious. If the true target capital structure of the network element leasing business is not observable, as he and I both agree, it is *not observable*. No definitive proof can be provided by any party. Therefore, analysts can only *estimate* the true capital structure based on sound *judgment*. Using market value capital structures of holding companies with substantial high-growth businesses that appear to be far riskier than the ILEC's dominant network element leasing businesses, as Dr. Vander Weide does, is unsound.

Q. DR. VANDER WEIDE CITES YOUR COLLEAGUE DR. CORNELL ON THIS SUBJECT. DOES DR. VANDER WEIDE INTERPRET DR. CORNELL CORRECTLY?

A. While I am delighted at Dr. Vander Weide's high regard for Dr. Cornell, he does not understand that Dr. Cornell entirely agrees with my view that the target market value of the network element leasing business should be used, which can only be estimated, and that market value capital structures of riskier holding companies should not be used. Ironically, Dr. Vander Weide cites a specific passage from Dr. Cornell's book which states that *"[i]f the comparable firms are publicly traded*, their market value weights can be calculated directly and averaged" (*emphasis added*), apparently forgetting his own testimony that there are no publicly traded firms for the network element leasing business.

In fact, Dr. Cornell has offered cost of capital testimony in numerous state TELRIC proceedings using substantially the same methodologies that I have used, and based on my

recollection those state commissions have generally adopted capital structures recommended by Dr. Cornell or close thereto.

For example, the Ohio Commission found that:

> Rather than adopting the cost of capital recommended by Ameritech, we find that, on balance, the midpoint cost of capital recommendation advanced by the AT&T/MCI witness Dr. Cornell most accurately reflects the appropriate forward-looking cost of capital for use in Ameritech's TELRIC studies. In adopting the AT&T/MCI recommendation, we note that Dr. Cornell provided the most extensive support and analysis for his cost of capital recommendation. Based on the record presented to us, we are most comfortable with the analysis Dr. Cornell has undertaken.[78]

In that proceeding, the Ohio Commission adopted Prof. Cornell's recommended cost of capital of 9.74%.

Q. DR. VANDER WEIDE QUOTES YOUR TESTIMONY IN AN OHIO UNE COST PROCEEDING REGARDING THE FACT THAT THE STOCK MARKET VALUES THE ASSETS OF AN ILEC AT MARKET VALUE. HE ALSO COMPLAINS THAT YOU LEVER AND UNLEVER BETAS USING MARKET VALUE CAPITAL STRUCTURES OF TELEPHONE HOLDING COMPANIES. DOES THIS CONTRADICT ANYTHING YOU ARE SAYING IN THIS PROCEEDING?

A. Not in the slightest. My analysis starts with the estimation of the cost of equity for the telephone holding companies. I consequently use market value capital structures and unlever and relever

[78] Opinion and Order, *In the Matter of the Review of Ameritech Ohio's Economic Costs for Interconnection, Unbundled Network Elements, et al*., The Public Utilities Commission of Ohio, Case no. 96-922-TP-UNC, June 19, 1997.

betas using market value capital structures. Because the telephone holding companies are riskier than the ILECs' network element businesses, this cost of capital estimate provides a ceiling to my range. The analytical step that Dr. Vander Weide misses in his rebuttal testimony is that the cost of capital for the less risky network element business will be less than the high side of the range, which incorporates the risks of all of the telephone holding companies' riskier businesses. The book value is used to estimate the low side of the range.

Q. IN THAT OHIO PROCEEDING, WHAT CAPITAL STRUCTURE AND COST OF CAPITAL WAS ADOPTED BY THE OHIO COMMISSION?

A. The Ohio Commission adopted Staff's recommendation to use the book capital structure for Cincinnati Bell Telephone which contained 42.24% debt and 57.76% equity, and specifically noted that this capital structure approximated the mid-point of the range proposed by me.[79] In that proceeding, the Ohio Commission adopted a cost of capital of 9.56%.

Q. IS DR. VANDER WEIDE'S TESTIMONY REGARDING CAPITAL STRUCTURE CONSISTENT WITH HIS PRIOR TESTIMONY?

A. Completely at odds with his current arguments, Dr. Vander Weide argued in his affidavit in support of Bell Atlantic's comments filed with the FCC on June 29, 1994, that it was incorrect to use the capital structure of the regional holding companies (RHCs) in place of the capital

[79] "We find that, under the facts and circumstances presented in this case, the staff's book capital structure should be adopted for purposes of determining the cost of capital. Staff witness Chaney recommends that a capital structure of 42.24 percent long-term debt and 57.76 percent common equity be used for purposes of this case. … The staff's recommended capital structure approximates the mid-point of Mr. Hirshleifer's proposed range." The Public Utilities Commission of Ohio, Supplemental Opinion and Order, *In the Matter of the Application of Cincinnati Bell Telephone Company for Approval of a Retail Pricing Plan Which May Result in Future Rate Increases and For a New Alternative Regulation Plan*, Case No. 96-899-TP-ALT, p.13.

structure of the price cap LECs because some of the RHC's have financial, cellular and cable TV subsidiaries whose "capital structure does not reflect the actual financing of the price cap LECs' investments in telecommunications infrastructure." [80] Dr. Vander Weide also concluded that "[t]he capital structures of these subsidiaries should be removed from the RHC's consolidated capital structure to better reflect the financing of the LEC's telecommunications infrastructure."[81]

Moreover, in his direct testimony regarding Virginia's Experimental Plan (Case No. PUC920029), Dr. Vander Weide stated that:

> *According to financial theory, the appropriate capital structure for an enterprise is determined by its own business risk*, the liquidity and the market value of its own assets, and its own competitive strategy. *The proper capital structure for the LECs participating in the Plan is related to their own business situation, not their parent company's*. The parent companies of the LEC's each have capital structures that reflect their particular business situations. There is evidence of parent company diversification into financial services, real estate, cellular, interLATA services, cable television, and overseas ventures. *The LECs participating in the Plan have no investment in their parent's diversification efforts, and the risks of these ventures are unrelated to the LECs business risks as local telephone companies*. [*emphasis added*]

Q. DOES DR. VANDER WEIDE HIMSELF RELY ON BOOK VALUES FOR OTHER ASPECTS OF HIS WORK IN THE CURRENT PROCEEDING?

[80] Affidavit of Dr. James H. Vander Weide In Support of Reply Comments of Bell Atlantic, Before the Federal Communications Commission, CC Docket 94-1, June 29, 1994.

[81] *Ibid.*

A. Yes. For example, he estimates the cost of debt for VZ-NE by using yields on Moody's A-rated bonds as a proxy. However, Moody's uses *book value* capital structure ratios as one of its analytical tools for assessing the riskiness of the subject companies. If Dr. Vander Weide believes that book values can never be used for risk assessment, he should not be relying on Moody's.[82] Dr. Vander Weide additionally uses book value weights for estimating the market value of debt in his capital structure calculations. As I noted earlier in this testimony, Dr. Vander Weide also relies on returns on *book* equity when he imputes growth rates using the "b times r" method.

Q. IN HIS SCHEDULE 2, DR. VANDER WEIDE PURPORTS TO ESTIMATE THE IMPLIED MARKET CAPITAL STRUCTURE FOR A STAND-ALONE LOCAL EXCHANGE COMPANY USING MARKET MULTIPLES OBTAINED FROM INVESTMENT BANK FAIRNESS OPINIONS AND FINANCIAL ANALYST REPORTS. WHAT ARE YOUR OBSERVATIONS?

A. First, Dr. Vander Weide is explicitly acknowledging that, notwithstanding his rebuttal protestations, information from analyst reports and fairness opinions should be considered after all. As many of the sophisticated investment banks have themselves used cost of capital estimates in their analyses which largely confirm the reasonableness of my cost of capital estimate, there is little need to turn to a multiples analysis to attempt a very rough estimate of capital structure.

[82] Standard & Poor's also utilizes book value leverage ratios as one of it risk analysis tools.

However, even Dr. Vander Weide's multiples analysis is murky at best. He cites to multiples appearing in numerous analyst reports and fairness opinions. Notably, these multiples differ based on the time of measurement, the sources of data, and method of measurement. In its report dated January 21, 2000, for example, Morgan Stanley calculates an EBITDA multiple of 7.1 based on the stock prices of telephone holding companies. These stock prices reflect the valuation and risks of all the riskier businesses operated by the telephone holding companies, and therefore yield multiples that are too high for what Dr. Vander Weide purports to calculate. Conversely, Dr. Vander Weide also cites to a Merrill Lynch fairness opinion in the ALLTEL/Aliant merger proxy statement which indicates that Merrill Lynch used *private* market multiples of 7.25 to 8.00X EBIDTA for estimating the value of Aliant's wireline business. This poses a puzzle: if the multiple for wireline exceeds a multiple Dr. Vander Weide also cites for telephone holding companies, it implies that the wireline business is more valuable than the entire telephone holding company. Additionally, if Merrill Lynch based its multiples on private transactions, they are *purchase* multiples which likely include control premia paid by the purchasers. This would have the effect of inflating the calculated multiple because of the control premia, making it again inappropriate for the exercise that Dr. Vander Weide attempts.

Dr. Vander Weide's rough-and-dirty approach also does not consider the debt capacity of the local telephone business. For purposes of his analysis, he assumes that the book debt shown in ARMIS data represents the maximum debt capacity for local telephone companies if they were to stand alone. This may not be the case.

III. DR. VANDER WEIDE'S COST OF CAPITAL ESTIMATES ARE GROSSLY AT ODDS WITH ANALYSES BY INVESTMENT BANKS AND OTHER INDEPENDENT ANALYSTS.

Q. WHAT HAS DR. VANDER WEIDE'S RESPONSE BEEN WHEN CONFRONTED WITH THE EVIDENCE OF INVESTMENT BANKS AND FINANCIAL ANALYSTS THAT THE COSTS OF CAPITAL FOR TELEPHONE HOLDING COMPANIES ARE FAR LOWER THAN WHAT HE ESTIMATES?

A. In the recent New York UNE cost proceeding, Dr. Vander Weide stated in his responsive testimony that Merrill Lynch, Salomon Smith Barney and Goldman Sachs were hired by Bell Atlantic and SBC to provide an opinion regarding the fairness of the stock exchange ratios used in the mergers, not to estimate the cost of capital. He also states that "these analysts can not be used to justify any estimate of the telecommunications companies' weighted average costs of capital" since they "were forced to assume a specific discount rate because they had not performed an independent analysis of the weighted average cost of capital." [Vander Weide New York responsive testimony, p. 62]

As a former due diligence officer of a broker-dealer, I found Dr. Vander Weide's testimony nothing less than astonishing. It is incredible to even suggest that competent fairness opinions in multi-billion dollar mergers could be rendered when one of the key parameters of the valuation analysis is simply "assumed." Merrill Lynch, Salomon Smith Barney, and Goldman Sachs are some of the world's largest investment banks. They have expertise as financial advisors to giant multinational companies in mergers and acquisitions.

To suggest as Dr. Vander Weide does that the weighted average cost of capital used in a merger stock exchange ratio analysis was an "arbitrary assumption" [Vander Weide New York responsive testimony, p. 65] is equivalent to saying that the whole analysis for which the advisors were handsomely paid was just a charade.[83] The investment advisors to the transaction relied on those estimates as part of their valuation of the two companies, which in turn was intended to ensure that shareholders received proper compensation as a result of the proposed merger of the two companies. For investment advisors to rely on "arbitrary assumptions" would have constituted a breach of fiduciary responsibility, by the investment advisors to management and by management to shareholders.

On appeal from the UNE decision of the Delaware PSC in 1997, the District Court in that state considered and rejected similar arguments by Bell Atlantic for disregarding the discount rates used by Merrill Lynch in its exchange ratio analysis for the Bell Atlantic-NYNEX merger. The discount rate for local service, 8% to 10%, supported the 10.28% weighted cost of capital upheld by the Delaware PSC. *Bell Atlantic-Delaware, Inc. v. McMahon*, 80 F.Supp.2d 218, 241 (D. Del. 2000).

Q. DR. VANDER WEIDE'S SUGGESTION THAT THE DISCOUNT RATES USED BY INVESTMENT BANKS WERE "ARBITRARY" ALSO IMPLIES THAT THEY ARE ARBITRARILY WRONG. DO YOU BELIEVE THAT INVESTMENT BANKS USE DISCOUNT RATES THAT THEY BELIEVE TO BE WRONG?

[83] GTE and Bell Atlantic each paid $15 million to their financial advisors, Goldman Sachs, Salomon Smith Barney, Chase Manhattan, Bear Stearns, Morgan Stanley Dean Witter, and Merrill Lynch, in connection with this merger.

A. Of course not. Investment banks use discount rates that they believe to be correct.

Q. DR. VANDER WEIDE SAID THAT INVESTMENT BANKS ARE "FORCED" TO USE THESE DISCOUNT RATES. WHO COULD BE "FORCING" THEM?

A. Unless Dr. Vander Weide was suggesting that the telephone holding companies themselves were somehow coercing their financial advisors into using discount rates that were too low, no one was forcing them to use incorrect assumptions, or assumptions that they did not believe in, in their valuation analyses.

Q. WHAT REFINEMENT DID DR. VANDER WEIDE ADD TO THIS ARGUMENT FOR THIS PROCEEDING?

A. Dr. Vander Weide now argues that investment banks had to assume an incorrect cost of capital because:

> they simply could not simultaneously estimate the cost of capital at the same time that they estimated the appropriate share price. Indeed, these firms were faced with a situation where they had just one equation to determine two unknowns—the value of the firm's stock, and the cost of equity. As a simple matter of mathematics, there are many combinations of share values and cost of capital that will solve a single equation; and hence, no unique solution exists for either unknown. To resolve this dilemma, the investment bankers chose not to estimate the cost of capital. Instead, they simply *assumed* a discount rate. [Vander Weide Rebuttal, pp. 80-81]

Q. IS THERE ANY MERIT TO THESE ARGUMENTS?

A. No. First, with respect to the DCF model, Dr. Vander Weide forgets one of the hotly-debated topics in this very proceeding, the year-by-year dividend growth rate assumptions, which are

several other unknown parameters to the model. By necessity, all analysts must estimate both the cost of capital and the growth rates if they are to use the DCF model. This does not lead to Dr. Vander Weide's faulty conclusion that investment bankers are using costs of capital and, by implication, growth rate assumptions that they believe to be incorrect for estimating values in fairness opinions for the mergers of giant corporations. Second, Dr. Vander Weide inaccurately assumes that all investment bankers are using the DCF model to estimate the cost of capital. Investment bankers are just as likely to be using the CAPM, and potentially other models for cost of capital estimation. The CAPM does not use stock prices or growth rates as inputs to the model.

Q. WITH RESPECT TO THE FAIRNESS OPINION WORK PERFORMED BY INVESTMENT BANKS, DID ANYTHING PREVENT THEM FROM USING DR. VANDER WEIDE'S COST OF CAPITAL METHODOLOGY IF THEY BELIEVED IN IT?

A. No. Dr. Vander Weide's simple application of the single-stage DCF model could easily be calculated by investment banks within a very short period of time. Financial analysts could have done the same for their analyst reports if they thought his approach was applicable.

Q. WHAT ELSE DID DR. VANDER WEIDE ARGUE WITH RESPECT TO THIS SUBJECT IN THE NEW YORK UNE COST PROCEEDING?

A He alternatively argued that the discount rates used by investment banks should not be considered because the banks' cost of capital methodologies were not entered into evidence.

[Vander Weide New York responsive testimony, p. 67] For this proceeding, however, he purports to know how the investment bankers are calculating their costs of capital.

Dr. Vander Weide's argument made no sense because he himself uses analyst data which do not disclose underlying methodologies. For example, the IBES average analyst earnings growth forecasts for hundreds of companies are critical inputs to his single-stage DCF model. For each company in his sample, these forecasts are averages of several forecasts made by different financial analysts. No explanation is provided as to how each individual analyst made its forecast of future earnings growth.

Q. WHAT OTHER ARGUMENTS DID DR. VANDER WEIDE MAKE IN PRIOR PROCEEDINGS WITH RESPECT TO THE COST OF CAPITAL RATES USED BY THE INVESTMENT BANKERS IN MERGER PROXIES?

A. I have seen Dr. Vander Weide's testimony before several state commissions stating that the 8-10 percent DCF discount rates disclosed in the Bell Atlantic/NYNEX prospectus/proxy statement for valuing the telephone operations of the company were not probative because, among other things, they were intended merely to provide relative values of the companies for purposes of evaluating the fairness of the exchange ratio. He testified that "when estimating the relative values, it doesn't really matter what the cost of capital is, as long as the same cost of capital is used for both companies."[84] This argument was simply wrong. The choice of discount

[84] Transcript of Dr. Vander Weide's testimony on November 7, 1996 before the New York State Public Service Commission, Case 95-C-0657, p. 3768, at 14-17.

rates does affect the valuation of the different segments of a subject company, which in turn would affect the exchange ratio.

Q. WHAT NEW ARGUMENT DOES DR. VANDER WEIDE OFFER IN HIS CONTINUING ATTEMPT TO CHALLENGE THE COST OF CAPITAL ESTIMATES OF INVESTMENT BANKERS AND FINANCIAL ANALYSTS?

A. In this proceeding, he argues that investment bankers and analysts use one cost of capital, while investors inexplicably use a much higher one. He attempts to show this by comparing the stock price valuations estimated by investment bankers to the actual stock prices of the subject companies. [Vander Weide Rebuttal, p. 72-76] According to this convoluted theory, everyone (i.e., investment bankers, analysts and investors) is using the same earnings growth assumptions in their DCF valuation models. Thus, if investment bankers and analysts estimate higher values than the actual market price for a stock using their own cost of capital estimates, this purportedly "proves" that investors' cost of capital is lower.

This reasoning is surprisingly misinformed. As I noted above, Dr. Vander Weide appears to be unaware or has simply forgotten that each investment bank is using its own unique forecasts of earnings growth, which is one of the main professional activities engaged in by such banks and analysts. The average earnings growth expectations of the market for a company is an unknown, yet Dr. Vander Weide blindly assumes that it is somehow known to all and uniformly utilized. Therefore, his faulty logic leads him to the conclusion that only the cost of capital estimate differs, whereas growth expectations are in fact differing. Of course, no one knows what the true market growth expectations are (although it is fair to assume that no

rational observer expects above-market growth forever). Professional analysts are using their skills to estimate several important, but unknown parameters to the DCF model: expectations regarding the future growth path of company earnings, and the company's cost or capital.

Q. IN HIS NEW YORK REBUTTAL TESTIMONY, DID DR. VANDER WEIDE ARGUE THAT ANY OF THE INVESTMENT BANKS' COST OF CAPITAL ESTIMATES SUPPORTED HIS POSITION?

A. Ironically he did, although on a very selective basis. Dr. Vander Weide cited in his New York responsive testimony the analyses performed by investment banks in connection with proposed mergers of Alltell/Aliant and MCI Worldcom/ Sprint. [Vander Weide New York responsive testimony p. 66] Dr. Vander Weide claimed that in these analyses the assumed discount rates ranged from 10% to 12% for local operations. However, Dr. Vander Weide did not cite these analyses correctly.

Warburg Dillon Read in fact used discount rates from 10.0% to 11.0%, not 12%, to value Sprint FON group's local telephone division (p. 59).[85] It assumed for the long distance telephone division discount rates ranging from 10.5% to 11.5%. In citing that fairness opinion, however, Dr. Vander Weide failed to mention that in the same filing Salomon Smith Barney, acting as MCI WorldCom's financial advisor, used a weighted average cost of capital range of 8.75% to 9.75% to value Sprint's local telephone division (p. 74) and 9.25% to 10.25% for the long distance segment. It performed a DCF analysis of Sprint PCS Group and MCI WorldCom, using discount rates reflecting a weighted average cost of capital range from 10.5%

[85] WorldCom Inc.'s Amendment No. 3 To Form S-4 filed with the SEC on February 17, 2000.

to 11.5% for Sprint PCS Group and 11.5% to 12.5% for MCI WorldCom. Salomon Smith Barney used a higher cost of capital range for Sprint's PCS Group than for Sprint FON's local segment. It also used a higher cost of capital for the long distance segment than for the local telephone division.

When valuing the ALLTEL/Aliant merger, Merrill Lynch used discount rates ranging from 10% to 12%, not for the local telephone business suggested by Dr. Vander Weide, but for all the businesses of the companies.[86] ALLTEL and Aliant have substantial riskier businesses relative to their local exchange operations.

Q. ISN'T DR. VANDER WEIDE NOW ARGUING THAT THESE SAME WARBURG DILLON READ AND MERRILL LYNCH COST OF CAPITAL ESTIMATES DO NOT REPRESENT INVESTORS' COSTS OF CAPITAL?

A. Yes. He is not at all consistent. And as noted above, he does not accept, or even consider as a sanity check, Merrill Lynch's 10.20% forward-looking cost of equity for the market.

Q. WHAT OTHER EXPLANATIONS DOES DR. VANDER WEIDE OFFER IN THIS PROCEEDING FOR HIS ASSERTION THAT INVESTMENT BANK ANALYSES SHOULD NOT BE USED?

A. Dr. Vander Weide also argues that investors "are not entitled to rely" on any single part of an analysis in a fairness opinion because of exculpatory language that the investment bankers include in their opinion. [Vander Weide Rebuttal, p. 81] This is a transparent and nonsensical argument. Investment banks add exculpatory language to mitigate their exposure to potential

[86] Alltel Corp.'s Form S-4 which was filed to SEC on March 24, 1999.

lawsuits from their issuance of fairness opinions. By doing so, this does not lead to the conclusion that parties cannot consider the inputs that the investment banks use in their models, nor to the conclusion that investment bankers use assumptions that they believe to be wrong.

Q. DO ANALYST REPORTS CONTAIN THIS EXCULPATORY LANGUAGE?

A. Generally not, to my knowledge. In addition to the analyst reports that I have previously cited, many other analyst reports also indicate that analysts consider the cost of capital for various telecommunications businesses to be much lower than what Dr. Vander Weide suggests. For example, Morgan Stanley Dean Witter used a 10% estimate of the cost of capital in its DCF valuation of ALLTEL in a report dated March 13, 2000.[87] In April 2000, BHF-Bank used an 8.2% cost of equity and 7.7% WACC for valuing Deutsche Telekom.[88] In January 2000 ABN Amro used a 10% discount rate to value Bell Atlantic's local, long-distance, directory assistance and wireless services.[89] In its September 29, 2000 DCF valuation of SBC Communications, A.G. Edwards employed a 8.70% cost of capital for the holding company in aggregate.[90] Prudential Financial has recently issued a report on regional Bell operating companies and integrated long-distance companies and used a 9.5% discount rate for the RBOCs and a 10.5% discount rate for the integrated long-distance companies.[91] ING/BHF-

[87] Morgan Stanley Dean Witter, "Alltel Corporation", March 10, 2000, p. 4, and March 13, 2000, p. 3.

[88] BHF-Bank, "Deutsche Telekom", April 27, 2000, p. 6.

[89] ABN Amro, "Bell Atlantic Corporation," January 20, 2000, pp. 12, 19.

[90] A.G. Edwards, "SBC Communications," September 29, 2000, pp. 9-10.

[91] Prudential Financial, "Wireline Telecommunications Services", May 29, 2001, p. 142.

Bank has used a discount rate of 8.6% in its September 28, 2001 valuation of Deutsche Telekom's fixed-network division, T-Com.[92]

Q. DR. VANDER WEIDE CITES IN HIS TESTIMONY THE COST OF CAPITAL ESTIMATES FOR THE AGGREGATE TELECOMMUNICATIONS INDUSTRY PROVIDED BY IBBOTSON ASSOCIATES' COST OF CAPITAL QUARTERLY. HE STATES THAT THESE ESTIMATES ARE HIGHER THAN YOUR ESTIMATES FOR THE UNE LEASING BUSINESS. WHAT IS YOUR VIEW?

A. It is interesting that Dr. Vander Weide considers this summary of cost of capital calculations for telecommunications holding companies helpful to him, because when looked at more carefully, I think that it is far more supportive of my cost of capital estimate.

First, Dr. Vander Weide fails to note that this sample of 20 companies includes companies engaged in all of the business activities riskier than the telephone network leasing business. Therefore, all of the cost of capital calculations, even if one were to assume that they were correct, overstate the cost of capital of the network element leasing business. In my analysis, I judgmentally attempt to include in my sample companies which have some involvement in the local exchange business and to not include those which are much more focused on riskier activities and therefore are not comparable to Verizon's wholesale UNE business. Dr. Vander Weide focuses on the cost of capital estimates for the "Large Composite" group, which in addition to RBHC's and GTE, includes several companies much more heavily engaged in businesses riskier than the wholesale UNE business. For example, the ten large

[92] ING/BHF-Bank, Deutsche Telekom, September 28, 2001, p. 12.

companies probably also include AT&T, Broadwing, MCI Worldcom and Sprint FON Group.[93] Three of these ten companies have debt rated at BB or below according to the 2000 Cost of Capital Yearbook.

For this reason, and because the giant RBHC's like Verizon are likely to have the lowest cost of capital relative to riskier companies in this telecommunications group, Dr. Vander Weide should be focusing his attention on the 25th percentile results for the costs of capital.

Second, two of the cost of capital calculations use the CAPM model, which employs Ibbotson Associates' high estimate of the equity risk premium based solely on its historical methodology. However, as I discuss extensively in my testimony, I consider research performed by numerous scholars and practitioners that conclude that the forward-looking equity risk premium is far lower than that determined using Ibbotson Associates' method. Consequently, Dr. Vander Weide is really saying once again that he only believes Ibbotson Associates' approach to the risk premium estimate, and that he inexplicably ignores all other views, including the stated position of Roger Ibbotson himself. As I explained above, however, Dr. Vander Weide has previously indicated that the equity risk premium is not stable over time, so he does not believe the fundamental premise of the Ibbotson Associates historical risk premium approach.

In contrast, I consider a far larger set of approaches regarding the equity risk premium and utilize an estimate that falls somewhere between the high and low approaches, even though

[93] The 2000 Cost of Capital Yearbook does not identify the specific companies that make up its large composite, but does indicate that AT&T is the largest company by sales and total capital.

the preponderance of the current research and opinions indicate that the equity risk premium is currently very low. If a lower risk premium were used in Ibbotson Associates' CAPM model, a lower cost of equity would result.

Notably, Ibbotson Associates estimate of beta at the 25th percentile is lower than the 0.77 beta that I use, and not at all close to the beta suggested by Dr. Vander Weide. Therefore, if one were to use of an equity risk premium in the range of 5.5% in their model along with a beta of 0.65, it would result in cost of equity estimate of 9.84%. If even lower equity risk premium estimates were used, lower CAPM cost of equity estimates would result.

Ibbotson Associates calculates DCF-based costs of equity using two models, a single-stage model and a three-stage model. To no one's surprise, the single-stage model which Dr. Vander Weide uses yields a higher cost of capital. In contrast, Ibbotson Associates' three-stage model yields a lower cost of equity estimate. As previously noted, Ibbotson Associates stated that multiple stage models provide better cost of equity estimates. Ibbotson Associates' three-stage model uses a higher estimate of the long-run growth rate for the economy than does my model, which averages the growth rate estimates of WEFA and Ibbotson Associates.

Q. DR. VANDER WEIDE CLAIMS THAT A COST OF MONEY INPUT USED BY AT&T IN 1997 IN ITS TOTAL INCREMENTAL COST MODEL ("TICM") FOR LONG DISTANCE SERVICES SHOWS THAT YOUR FORWARD-LOOKING COST OF CAPITAL ESTIMATE FOR VERIZON'S NETWORK ELEMENT LEASING BUSINESS IS "UNJUSTIFIABLY LOW." [VANDER WEIDE REBUTTAL, P. 73] PLEASE RESPOND.

A. I first note that the Hearing Officer, Marcella Hickey, denied Verizon's motion to compel information related to the TICM, rendering Dr. Vander Weide's claim irrelevant to this proceeding.[94] Nonetheless, I find it ironic that Dr. Vander Weide purports to endorse AT&T's undefined model input regarding the cost of money for certain long distance services in 1997, while in so many other respects, in all TELRIC proceedings that I am aware of, he vehemently disagrees with AT&T's assumptions. More fundamentally, Dr. Vander Weide fails to explain, as an initial matter, how this view regarding a long distance model relates to the forward-looking cost of capital of an ILEC's wholesale network element leasing business as of today.

To analyze this question, I return to some of the reality checks that I have cited in my testimony. For example, Warburg Dillon Read, in its February 2000 assessment of the WorldCom/Sprint merger, assumed discount rates ranging from 10.5% to 11.5% for long distance telephone operations. *In his New York rebuttal testimony, Dr. Vander Weide specifically cited (although inaccurately) as evidence of the cost of capital for the local telephone business the fairness opinions rendered for this merger, which opinions included Warburg Dillon Read's range of 10% to 11% regarding the cost of capital for Sprint FON's local telephone operations* [New York responsive testimony, p. 66]. He fails to explain why he then had faith in Warburg Dillon Read's estimate for local telephone

[94] Hearing Officer's Ruling on Verizon Massachusetts' Motion to Compel Discovery Responses by AT&T Communications of New England, Inc. and CLEC Coalition's Motion to Compel Discovery Responses by Verizon Massachusetts, D.T.E. 01-20, August 8, 2001. ("Because the model is no longer used and is not put forth by AT&T in this proceeding, the Hearing Officer finds that the requested information is not relevant to evaluating the HAI 5.2a-MA Model and not reasonably calculated to lead to discovery of admissible evidence. The motion to compel response to VZ-ATT 1-130 is denied.").

operations, but is now somehow persuaded that the cost of capital for the long distance business is dramatically higher than what Warburg suggests. In this same filing, the fairness opinion of Salomon Smith Barney used a lower range of 9.25% to 10.25% to analyze the long distance segment of Sprint FON Group and a range of 8.75% to 9.75% for local operations.

As an additional basis of comparison at approximately the same time period, Ameritech, another RBOC which has since merged with SBC, estimated its weighted average cost of capital at the holding company level to be 10.5 percent. [95]

Consequently, Dr. Vander Weide's reliance on this input to an AT&T model appears to be inconsistent with other evidence. As the long distance business is generally recognized as being riskier than local telephone operations, the investment banks' estimates of cost of capital ranges for long distance operations appear to be far more consistent on a relative basis with their own lower estimates of the cost of capital for local exchange operations, and with my estimates and state commission decisions regarding the cost of capital for the provision of network elements.

IV. DR. VANDER WEIDE'S CONTRIVED "TESTS OF REASONABLENESS" UNDERSCORE THE REASONABLENESS OF MY COST OF CAPITAL ESTIMATES, NOT HIS.

Q. IN HIS REBUTTAL TESTIMONY DR. VANDER WEIDE ALLEGES THAT YOUR 3-STAGE DCF MODEL DID NOT CONFORM TO HIS SO-CALLED "TESTS OF

[95] Opinion and Order, *In the Matter of the Review of Ameritech Ohio's Economic Costs for Interconnection, Unbundled Network Elements, et al*., The Public Utilities Commission of Ohio, Case no. 96-922-TP-UNC, June 19, 1997.

REASONABLENESS." AS AN INITIAL MATTER, IF YOU HYPOTHETICALLY ASSUMED THAT HIS CONCLUSIONS WERE TRUE, DO THEY HELP OVERCOME THE PROBLEM NOTED BY ECONOMISTS OF USING THE SINGLE-STAGE DCF MODEL WHEN FORECAST GROWTH RATES EXCEED THAT OF THE ECONOMY?

A. No they do not. The use of the single-stage model with the assumption of perpetual supernormal growth results in cost of equity estimates that are too high.

Q. WHAT FLAWS EXIST IN HIS TESTS?

A. The flaws in his analysis are theoretical, logical, and practical. As there are so many, I only attempt to address the most glaring in this surrebuttal. First and foremost, Dr. Vander Weide is simply attacking a straw man: he is saying that if he ignores the analytical procedures that I recommend for estimating the cost of capital, he can perform what he describes as "tests" that gives him results that he does not like. This premise is analogous to taking apart a car, throwing away half of the parts, attempting to reassemble the parts without the benefit of the blueprints, and then pronouncing that there are problems with the car.

Q. WHEN DR. VANDER WEIDE ATTEMPTS TO COMPARE VALUE LINE BETAS TO DCF RESULTS, HE ASSUMES THAT THERE IS A DIRECT THEORETICAL LINKAGE BETWEEN THE DCF AND THE CAPM APPROACHES. DOES THIS LINKAGE IN FACT EXIST?

A. No. The two approaches are theoretically distinct, and as can be clearly seen in my direct testimony, do not have a single common parameter in their models. Dr. Vander Weide is

implicitly saying that both models are indisputably correct and produce perfect results, and that if you knew the "true" inputs (such as betas that had no measurement error), you would get the same answers from each. There is no evidence in the academic literature that has yet proved one or both theories to be perfect. Therefore, you cannot necessarily assume that there is a direct relationship between the beta input to the CAPM, even if you could determine the "true" beta without any measurement error, and the cost of equity results from the unrelated DCF model. This independence between the CAPM and DCF approaches is precisely why I have used both models in my analysis and taken an average of the results of the two to derive a balanced estimate of the cost of equity.

Q. HAS DR. VANDER WEIDE USED THE CAPM TO ARRIVE AT HIS COST OF CAPITAL ESTIMATE IN THIS PROCEEDING?

A. No, and from my experience, he never has in prior TELRIC proceedings. As I discuss above, Dr. Vander Weide has testified in the past that the CAPM is not suitable because betas are not forward-looking in his opinion. He has specifically criticized Value Line betas, which are computed over a five-year historical period, as not being forward-looking. So on the one hand, he posits that the CAPM should not be used at all, while on the other he posits both that there is a direct relationship between the two distinct models, and that Value Line betas are accurate measures of risk.

Q. DOES DR. VANDER WEIDE'S SINGLE-STAGE DCF MODEL DEMONSTRATE INCONSISTENCIES WITH HIS FORMULATION OF THE CAPM APPROACH?

A. Yes. As a simple illustration consider the estimate of Intel's cost of equity using a single-stage DCF model. As of June 30, 2000, Intel was expected to grow at 19.55% for the next 5 years and had a very low forward-looking dividend yield of 0.13%. Consequently, the single-stage model estimates Intel's cost of equity to be 19.68%. Now consider the CAPM. Intel's beta according to Value Line, as suggested by Dr. Vander Weide, was 1.1. Consequently, Intel's cost of equity using the CAPM model is 6.26% + (1.1 * Risk Premium). Whatever risk premium is selected, the cost of equity is substantially lower than the 20% that the single-stage model calculates.

Q. ONE OF DR. VANDER WEIDE'S TESTS PURPORTS TO RANK AND COMPARE THE RESULTS OF THE 3-STAGE DCF MODEL FOR VARIOUS GROUPS OF COMPANIES. [VANDER WEIDE REBUTTAL, PP. 82-83] HOW IS THIS FLAWED?

A. As an example, Dr. Vander Weide inexplicably ignores my observation that companies that pay low dividends may have cost of capital estimates which are biased downwards. As he himself noted in his rebuttal testimony, when I estimated a cost of equity on the market in prior testimonies, I specifically excluded companies with dividends under 1.5%. His own estimate of the cost of equity for the S&P 500, which according to him resulted by applying my methodology, was 10.93%. In contrast, Dr. Vander Weide's Table 1 now shows 9.00% as the cost of equity for the S&P 500, inconsistent with his own calculation. His estimate of the S&P Industrials in Table 1 makes the same mistake, and he includes Century Telephone in his

small sample of local exchange carriers which I specifically excluded because the DCF approach may be less accurate for companies that pay small dividends.

He is also not consistent regarding his position on sample size. He argues in his rebuttal testimony that an average of four to five companies will not yield an accurate estimate of a group's cost of capital, presumably because of measurement error. Yet, for purposes of this alleged ranking comparison, he is quite comfortable using an average of only three "natural gas distribution companies", even though there are many such companies doing business in the United States.

Dr. Vander Weide also makes some rather broad assumptions about relative risk. For example, Dr. Vander Weide's "electric" group is composed of companies which are involved in electric, gas and nuclear energy, telecommunications, real estate, financial services and international businesses. Over the past year there have been unanticipated increases in natural gas prices which have had dramatic impact on certain electricity markets, such as in California. As a result PG&E has entered bankruptcy and Edison teeters on the brink. Therefore, it is not at all clear that these companies are as "low risk" as Dr. Vander Weide tries to portray them.

Q. DR. VANDER WEIDE TURNS TO STATISTICAL REGRESSIONS AS ANOTHER ATTEMPT AT "TESTING REASONABLENESS." DO THESE TESTS SUFFER FROM THE SAME FLAWS?

A. Yes. Dr. Vander Weide consistently ignores the analytical procedures that I use and has used cost of equity and beta inputs in his regressions that would not have resulted if I had done the analysis. For example, my approach involves averaging betas and costs of equity of

comparable companies in order to reduce measurement error. In his regression reflected at his Table 2, he does no such averaging and simply compares raw Value Line betas against raw costs of equity. More significantly, he incorrectly assumes that there is a direct linkage between the CAPM and DCF models. That incorrect assumption alone renders the regression hypothesis meaningless. He additionally uses Value Line betas, which I do not use and which he himself has said are inappropriate. He does not explain why he did not use other measures of beta, such as averaged betas, or BARRA predicted betas, or Ibbotson Associates' betas, or betas calculated over one or two-year time periods. As was brought out in his cross-examination testimony in the Virginia proceeding before the FCC, Dr. Vander Weide is also inconsistent with respect to his own published work. In his 1988 article Dr. Vander Weide concluded based on a regression analysis of price-to-earnings ratios against potential explanatory variables (such as betas, forecasted growth rates, and others) that "the beta is never statistically significant …"[96]

Q. DR. VANDER WEIDE SIMILARLY ATTEMPTS TO CRITIQUE THE 3-STAGE DCF MODEL BY RUNNING REGRESSIONS OF THE COST OF EQUITY RESULTS AGAINST THE IBES GROWTH RATES. DOES THIS SUFFER FROM THE SAME PROBLEMS THAT YOU HAVE DISCUSSED?

A. Yes. And significantly, Dr. Vander Weide does not test the correct theoretical proposition. One question that could be tested is how cost of equity results from different DCF models

[96] James H. Vander Weide and Willard T. Carleton, "Investor Growth Expectations: Analysts vs. History," Journal of Portfolio Management, Spring 1988, p. 82.

correlate with *true* growth rate expectations over the long-term. As I have repeatedly cited from leading scholars and practitioners, analyst growth rates above a sustainable long-run growth rate of the economy cannot persist forever. Moreover, I have shown with actual telephone holding company examples that the analysts themselves do not assume high-growth rates for particularly long periods of time.

Dr. Vander Weide's regression is intentionally designed to test the relationship between the five-year IBES growth rates and the cost of equity results from the one-stage DCF model, which assumes that the five-year growth rates continue forever. Therefore, one would expect a higher correlation for a model that uses the five-year growth rate perpetually as an input when compared with a model that uses the five-year growth rates for only an initial growth period, and then uses growth rates that change annually and linearly converge to the growth rate of the economy in year 20. Dr. Vander Weide has essentially created a self-fulfilling -- but irrelevant -- proposition: it is no surprise that the five-year growth rate correlates well with the results of a one-stage model that uses the five-year growth rate as the only growth input. This obviously does not test a more important question: how do the results correlate with true expected growth rates? As these rates can only be inferred with reasonable analytical procedures, it would be difficult to properly specify a regression to test them. However, it is already clear from simple logic, let alone the wealth of expert opinions, that supernormal growth rates cannot last indefinitely as Dr. Vander Weide unreasonably suggests.

Q. DR. VANDER WEIDE ALSO PURPORTS TO REGRESS DIVIDEND YIELDS AGAINST COST OF EQUITY RESULTS. DOES THIS ANALYSIS SUFFER FROM SIMILAR PROBLEMS?

A. Yes. Dr. Vander Weide also makes an assumption that he fails to support: he states that high dividend yield companies should have lower costs of equity. There has been a fair amount of academic research regarding the relationship between dividend yields and returns.

For example, Grinblatt and Titman state that:

> Stocks with high dividend yields do, in fact, have higher returns, on average, than stocks with low dividend yields…Stocks with zero dividend yields have substantially higher expected returns than stocks with low dividend yields, but for stocks that do pay dividends, expected returns increase with dividend yields.[97]

Dr. Vander Weide himself has noted in his own prior testimony that increases in the dividend yield "reflects a general increase in the cost of capital."[98]

As higher dividend yields on average indicate higher expected returns, even if you accepted Dr. Vander Weide's approach, according to his own theory Dr. Vander Weide's regression appears to demonstrate the inferiority of the single-stage model.

In other proceedings Dr. Vander Weide tried to defend this point by arguing, that the positive relationship between dividend yields and returns exist only for companies with the same

[97] Grinblatt, Mark and Sheridan Titman, *Financial Markets and Corporate Strategy*, McGraw-Hill, 1998, p. 532.

[98] Affidavit of Dr. James H. Vander Weide In Support of Reply Comments of Bell Atlantic, Before the Federal Communications Commission, CC Docket 94-1, June 29, 1994, p. 20, ¶34.

level of risk.[99] However, Dr. Vander Weide's argument is incorrect and illustrates unfamiliarity with some of the fundamental literature in finance. For example, Fama and French stated in a well-known academic article that "[t]he power of dividend yields to forecast stock returns, measured by regression R^2, increases with the return horizon."[100] Fama and French regressed NYSE portfolio returns on dividend yields. They made no adjustment to standardize for risk, as Dr. Vander Weide inaccurately suggests. Notably, Dr. Vander Weide has not been able to cite any academic literature supporting his faulty assertion.

Q. DOES DR. VANDER WEIDE MISS THE MOST OBVIOUS TEST OF REASONABLENESS?

A. Yes. Dr. Vander Weide does not ask himself in any reasonable fashion why his cost of equity results are so far away from those of analysts, which provide real-world views of the cost of capital and are independent of this proceeding. Instead, Dr. Vander Weide strains to offer several far-fetched arguments in an attempt to explain away this evidence.

Q. IN THE VIRGINIA FCC PROCEEDING, VERIZON POINTED OUT THAT YOUR 1/4-3/4 WEIGHTING FOR THE DCF APPROACH TO THE COST OF EQUITY HAD THE EFFECT OF GIVING ANOTHER COMPANY IN THE SAMPLE—

[99] In the Matter of Petition of AT&T Communications of Virginia, Inc., Pursuant to Section 252(e)(5) of the Communications Act, for Preemption of the Jurisdiction of the Virginia State Cooperation Commission Regarding Interconnection Disputes with Verizon-Virginia, Inc., CC Docket No. 00-251; In the Matter of Petition of WorldCom, Inc. Pursuant to Section 252(e)(5) of the Communications Act for Expedited Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon-Virginia, Inc., and for Expedited Arbitration, CC Docket No. 00-218, Before the Federal Communications Commission, Surrebuttal Testimony of Dr. Vander Weide.

[100] Fama, Eugene F., and Kenneth R. French, *Dividend Yields and Expected Stock Returns*, Journal of Financial Economics 22 (1988) 3-25, North Holland.

RATHER THAN VERIZON—THE GREATEST WEIGHT. HOW MUCH WOULD THE COST OF CAPITAL CHANGE IF YOU WERE TO GIVE VERIZON THE LARGEST WEIGHT IN THE DCF COST OF EQUITY AVERAGE?

A. Verizon can be given the largest weight simply by utilizing a market-weighting of the companies in the sample. This would have the effect of raising the overall cost of capital estimate by only four basis points. This effect is *de minimus*, but is an adjustment that I would subscribe to and should be considered by the Commission.

Q. IN THE FCC'S CURRENT VIRGINIA UNE COST PROCEEDING, DID VERIZON ATTEMPT TO INTRODUCE NEW REGRESSION ANALYSES IN DEFENSE OF DR. VANDER WEIDE'S SINGLE-STAGE DCF MODEL AFTER ALL TESTIMONY HAD BEEN FILED IN THAT MATTER?

A. Yes, and I assume that Verizon may attempt to introduce these analyses in Dr. Vander Weide's surrebuttal testimony.

Q. IN CASE DR. VANDER WEIDE DOES ATTEMPT TO INTRODUCE THESE ANALYSES IN MASSACHUSETTS, PLEASE TELL US WHETHER THEY ARE VALID.

A. These analyses are not valid.

Q. PLEASE EXPLAIN.

A. Verizon relied on four new regression equations that purport to compare the price/earnings ("P/E") ratios based on Value Line data for the companies in Dr. Vander Weide's DCF comparison group with the companies' (1) dividend payout ratios, (2) Value Line betas, and (3)

growth rates—the I/B/E/S growth rates used by Dr. Vander Weide and multi-stage model growth rates. According to Verizon, these regression equations showed that Dr. Vander Weide's one-stage I/B/E/S growth rates fit better with the P/E ratios than do three-stage growth rates.

However, none of Verizon's four new regressions actually tested the three-stage growth model used by me. My model uses 17 growth terms. The first year's dividend growth rate is based on Value Line's dividend forecast.[101] Years two through five are based on the five-year I/B/E/S growth rates, years six through 19 assume that the I/B/E/S growth rates decline over time to the long-run growth rate of the economy; and perpetual growth commencing in year 20 is assumed to be at the long-term growth rate of the economy. A regression analysis that tested these growth assumptions would require at least 17 distinct independent variables for growth, not a single variable.[102]

Instead of using the separate variables needed to capture the year-by-year cross-sectional growth values, however, Dr. Vander Weide squashes them into a single perpetual growth variable that purports to reflect the "average" of the 17 growth terms. Thus, Dr. Vander Weide is comparing two perpetual growth models. One obvious problem with this shortcut is that no reliable methods exist for determining "average" perpetual growth rates. This problem is

[101] Except for Verizon, which did not have a dividend forecast because of its merger with GTE.

[102] As I use the I/B/E/S five-year growth rate forecasts for years two through five, these years growth rates could conceivably constitute a single independent regression variable. However, the linear regression formula is not capable of evaluating the material impact of the long-term growth rate of the economy used in a three-stage model because it is a constant number, i.e., it has no variation and is 6.29% for all companies.

the very reason why finance professionals use multiple-stage models instead of constant growth models.

An analogy may help clarify this point. Assume that one wanted to estimate the impact that batting averages have *by player position* on the number of wins that a baseball team has during a season. If a regression were used, the number of wins would be regressed against batting averages for each player position (i.e., catcher, pitcher, first base, second base, utility player, etc.). One would expect to see at least 9 different independent variables in the regression to separately evaluate cross-sectional data across all teams *for each player position*. Using a single independent variable that represented an average of player batting averages across all field positions, by contrast, sheds no light whatsoever on the cross-sectional contributions of players by position to team victories.

A further problem with Verizon's regression analysis is its use of linear function forms. As evidenced by its name, a linear regression implicitly assumes that the dependent variable (in this case, the P/E ratio) is a straight-line function of the independent variables (such as the growth rates). This means that changes in the dependent variable are assumed to cause the dependent variable to change at a constant rate.

Dr. Vander Weide's unrealistic one-stage DCF model does in fact simplify algebraically into a linear formula: $K_e = D_1/P_0 + g$. A linear formula lends itself better to tests using linear regressions. But more realistic growth rate assumptions (such as those proposed by reputable scholars in the economic literature that I have cited, or those used in DCF valuations of companies by securities analysts), assume changing growth rates over time. Pictured

graphically, these growth expectations describe a non-linear curve, rising during the high-growth period, flattening and/or declining over a transitional period, and then flattening into a straight line during the stable growth period. This is not the straight-line relationship that a linear regression assumes and tests. Unlike the single-stage DCF model, the more realistic models which use differing expectations of growth over time do not simplify algebraically into a linear formula. These complex curve-linear growth expectations (which are adjusted as new information enters the market) would affect stock prices and P/E ratios at non-constant rates, inconsistent with the assumption of the linear regression model.

Furthermore, Dr. Vander Weide's results indicate that the Value Line beta inputs to his regression do not significantly affect P/E ratios. This has very interesting implications. First, it confirms Dr. Vander Weide's finding in his own article that Value Line betas do not explain P/E ratios.[103] This is also consistent with Dr. Vander Weide's past testimony in numerous proceedings that Value Line betas are not forward-looking and unsuitable as risk indicators for telecommunications companies. Consequently, it is further evidence that every analytical approach that Dr. Vander Weide has propounded in this proceeding using Value Line betas is without meaning.

This result also leads to a second important observation. As stated earlier, Dr. Vander Weide's regression assumes that the Value Line beta is the risk proxy for the true cost of equity.

[103] This finding was highlighted in the FCC hearings during Dr. Vander Weide's cross-examination by AT&T's counsel regarding his article, James H. Vander Weide and Willard T. Carleton, "Investor growth expectations: Analysts vs. History", *The Journal of Portfolio Management* (Spring 1988) at 78. [Before the Federal Communications Commission, CC Docket No. 00-218 and CC Docket No. 00-251, Transcript of Dr. Vander Weide Examination, p. 78, at 8-9].

If Value Line betas in fact do *not* capture the risks taken into account in the market's determination of the cost of equity, it means that the Tables A and B regressions omit the crucial risk variable which, if identified in a better-specified regression, could dramatically alter the regression results.

The ultimate conclusion that Verizon sought to draw from its new regression analysis—that users are more likely to use the single-stage model than a multi-stage model in making their investment decisions—is also contradicted by an article cited by Dr. Vander Weide during his cross-examination before the FCC. During that cross-examination, he offered an article by Gordon, Gordon and Gould as support for his inferences about investor psychology.[104] In fact, Gordon *et al.* found to the very contrary:

> We have compared the accuracy of four methods for estimating the growth component of the discounted cash flow yield on share: past growth rate in earnings (KEGR), past growth rate in dividends (KDGR), past retention growth rate (KBRG), and *forecasts of growth by security analysts (*KFRG). Criteria for the comparison were the reasonableness of sample means and standard deviations and the success of beta and dividend yield in explaining the variation in DCF yield among shares. For our sample of utility shares, KFRG performed well, with KBRG, KDGR, and KEGR following in that order, and with KEGR a distant fourth. If we had used past growth in price, it would have been an even more distant fifth. *Nevertheless, none of the four estimates of growth performed well under the criteria for a sample that included industrial shares.*
>
> …
>
> *Finally, we must acknowledge that we have no basis for estimating the expected HPR [holding period return] or DCF yield for industrial shares with any confidence. Theories on financial decision-making in*

[104] David A. Gordon, Myron J. Gordon, and Lawrence I. Gould, "Choice Among Methods of Estimating Share Yield," *The Journal of Portfolio Management*, Spring 1989, pp. 50-55.

industrial corporations that rely on that statistic have a weak empirical foundation. [emphasis added]

While Gordon *et al.* found that analyst growth rates were useful for determining the DCF yield on stable utility company stocks, they were not helpful with respect to industrial company stocks. These results are more consistent with the findings of other respected authors cited in my testimony: for companies experiencing stable growth at rates less than the growth rate of the economy, *such as highly-regulated utility companies in the Gordon et al. study period of 1984-1986,* the use of a single-stage model would not be unreasonable. Industrial companies, however, which have market expectations of a wide array of non-constant growth rates over time, do not lend themselves well to the long-term assumption of I/B/E/S growth rates.

As an alternative test using regression analysis, I looked at the general relationship between P/E ratios and the respective cost of equity estimates arrived at using the one-stage and three-stage DCF models. As noted above, Dr. Vander Weide's regression omits a significant risk proxy for the cost of equity because he found the Value Line beta to be statistically insignificant. As also noted, there are significant computational difficulties in testing the multiple-stage growth assumptions with linear regressions because there are so many growth term variables and the underlying function is nonlinear. The controversy over how to model multiple growth inputs can be eliminated, however, with a more direct test of the cost of equity results derived from the respective models themselves.

In this approach the actual cost of equity estimates from the two models, *which already incorporate their dramatically different growth assumptions*, are tested as independent variables. In essence, this construct tests which cost of equity estimate is more closely related to actual stock prices. The alternative regression equations are as follows:

P/E = $a + b_1$ (dividend payout) + b_2 (3-stage DCF cost of equity) + e

P/E = $a + b_1$ (dividend payout) + b_2 (1-stage DCF cost of equity) + e

I used the same set of companies and data provided by Dr. Vander Weide.[105] I then regressed P/E ratios using three-stage DCF cost of equity and dividend payout ratio as explanatory variables. (See Table 1.) Both of these parameters prove to be statistically significant for this regression (t-statistics are greater than approximately 2). The dividend payout coefficient is positive and the cost of equity coefficient is negative. The negative cost of equity coefficient is consistent with the expectation that a company with a higher cost of equity (i.e., a riskier company) would have a lower price.

Table 1.
Regression of P/E Ratio against 3-stage DCF Cost of Equity and Dividend Payout Using 378 Companies Identified by Dr. Vander Weide

	Intercept	3-stage DCF Cost of Equity	Dividend Payout	Adjusted R Square	F
Coefficient	60.12	(547.08)	43.89	0.39	123.20
T Statistic	18.81	(15.19)	12.16		

[105] For 11 companies Dr. Vander Weide listed an erroneous 3-stage DCF cost of equity of 8.21%, instead of their correct 3-stage DCF estimates.

In sharp contrast, however, the regression coefficient associated with perpetual-growth DCF cost of equity estimates is *positive*, and statistically significant. (See Table 2). This relationship implies that as the cost of equity goes up, stock prices will go up instead of going down. In response to data request #12, Dr. Vander Weide stated that he believed that the measure of risk (the Value Line beta) should be negatively correlated to the P/E ratio. The nonsensical result using the one-stage DCF model supports the conclusion, using Dr. Vander Weide's own reasoning and using regression tests as a tool, that the cost of equity estimates from his model are not meaningfully related to a company's actual stock price.

Table 2.
Regression of P/E Ratio Against 1-Stage DCF Cost of Equity and Dividend Payout
Using 378 Companies Identified by Dr. Vander Weide

	Intercept	1-stage DCF Cost of Equity	Dividend Payout	Adjusted R Square	F
Coefficient	(19.86)	216.98	17.35	0.19	45.75
T Statistic	(4.87)	8.93	5.06		

As discussed in my direct testimony, DCF models may not produce accurate estimates of cost of equity when dividend yields are small. Consequently, to be consistent with my methodology, additional regressions were run which excluded companies with dividend yields below 1.5% from the regression analysis.

When P/E ratios were regressed using the three-stage DCF cost of equity and dividend payout ratio as explanatory variables for the reduced sample, both of these parameters were

again statistically significant, and the 3-stage cost of equity continued to have a negative relationship with P/E. (See Table 3).

Table 3.

Regression of P/E Ratio against 3-Stage DCF Cost of Equity and Dividend Payout
Using 227 Companies Paying Dividend Yields > 1.5%

	Intercept	3-stage DCF Cost of Equity	Dividend Payout	Adjusted R Squared	F
Coefficient	26.75	(185.35)	17.16	0.45	93.04
T Statistic	15.96	(11.64)	11.50		

When companies with low dividend yields and potentially higher measurement error in their DCF cost of equity estimates were excluded from the sample, the R^2 increases from 0.39 to 0.45. The R^2 statistic, which can range from 0 to 1, indicates how closely the trendline determined by the regression coefficients fits the actual data. The trendline is considered to be progressively more reliable as its R^2 value approaches 1.

When these lower dividend-paying companies with potentially higher measurement error were excluded from the sample with respect to the one-stage DCF costs of equity, the regression coefficient exhibited no statistically significant relationship with P/E ratios (t-statistic less than 2).[106] (See Table 4).

[106] While not particularly relevant because of the lack of statistical significance, the sign of the coefficient for the one-stage cost of equity estimate is still in the wrong direction.

Table 4.

Regression of P/E Ratio Against 1-stage DCF Cost of Equity and Dividend Payout
Using 227 Companies Paying Dividend Yields > 1.5%

	Intercept	1-stage DCF Cost of Equity	Dividend Payout	Adjusted R Square	F
Coefficient	7.15	9.38	9.60	0.12	16.03
T Statistic	3.28	0.664	5.65		

An even simpler analysis can be performed by regressing actual stock prices against the respective cost of equity estimates derived from the two proposed models. These regression equations are as follows:

$$P = a + b_1 \text{ (3-stage DCF cost of equity)} + e$$

$$P = a + b_1 \text{ (1-stage DCF cost of equity)} + e$$

The results of the regressions are summarized in Tables 5 and 6.

Table 5.

Regression of Price against 3-Stage DCF Cost of Equity
Using 227 Companies Paying Dividend Yields > 1.5%

	Intercept	3-stage DCF Cost of Equity	Adjusted R Squared	F
Coefficient	84.05	(425.65)	0.22	65.35
T Statistic	13.75	(8.08)		

Table 6.

Regression of Price Against 1-Stage DCF Cost of Equity
Using 227 Companies Paying Dividend Yields > 1.5%

	Intercept	1-stage DCF Cost of Equity	Adjusted R Square	F
Coefficient	59.27	(168.43)	0.05	13.87

T Statistic	9.07	(3.72)

In this formulation, both regressions indicate that each cost of equity estimate is negative and statistically significant, meaning that price moves inversely to movements in the cost of equity. However, the R^2 statistic for the 3-stage model (0.22) is much higher than that for the single-stage model (0.05). This result implies that the three-stage cost of equity does a better job of explaining movements in stock prices. In fact, the one-stage R^2 is so low that it barely explains any price movement at all.

These regressions are performed using the set of companies excluding those with dividend yields below 1.5%. If all companies' data are included in the regression sample, the results are as shown below in Tables 7 and 8.

Table 7.

Regression of Price Against 3-Stage DCF Cost of Equity
Using 378 Companies Identified by Dr. Vander Weide

	Intercept	3-stage DCF Cost of Equity	Adjusted R Squared	F
Coefficient	91.34	(487.78)	0.20	93.19
T Statistic	17.39	(9.65)		

Table 8.

Regression of Price Against 1-Stage DCF Cost of Equity
Using 378 Companies Identified by Dr. Vander Weide

	Intercept	1-stage DCF Cost of Equity	Adjusted R Square	F
Coefficient	29.33	83.08	0.01	4.33
T Statistic	4.77	2.08		

In comparison to the sample that includes only companies paying dividend yields of 1.5% or greater, the regression results are virtually the same for the 3-stage DCF model test. However, the single-stage DCF result demonstrates a change in sign. The cost of equity variable becomes significantly positive with a t-statistic of 2.08. As previously noted, this is not a reasonable result because the cost of equity would be expected to have an inverse, or negative, relationship to price. The R^2 statistic is even lower, 0.01, indicating that the single-stage DCF cost of equity has virtually no explanatory power with respect to stock price when all companies are included.

Q. HAVE ANY STATE REGULATORY COMMISSIONS RELEASED UNE COST ORDERS IN VERIZON REGIONS WITHIN THE LAST FEW MONTHS?

A. Yes. On November 19, 2001, the Rhode Island Public Utilities Commission unanimously adopted an overall cost of capital of 9.5%, based on a capital structure of 63.3% equity/36.7% debt, a cost of equity of 11.0% and a cost of debt of 6.91%.[107] On November 20, 2001, the New Jersey Board of Public Utilities adopted an overall weighted average cost of capital 8.82%, based on a 60.94% debt /39.06% equity capital structure, a cost of equity of 10.00% and a cost of debt of 8.07%.[108] I also note that in September 1999 the Pennsylvania Public Utility Commission reduced Verizon's UNE cost of capital to 9.83%.[109] This cost of capital is significantly below the 11.90% UNE rate that the Pennsylvania Commission decided in 1997 which was noted in my direct testimony.

Q. DOES THAT CONCLUDE YOUR SURREBUTTAL TESTIMONY?

A. Yes, it does.

[107] In Re Review of Bell Atlantic-Rhode Island TELRIC Study, Report and Order, Docket No. 2681, State of Rhode Island and Providence Plantations, November 19, 2001, p. 20.

[108] Re I/M/O the Board's Review of Unbundled Network Elements Rates, Terms and Conditions of Bell Atlantic-New Jersey, Inc., State of New Jersey, Board of Public Utilities, Docket No. TO00060356, November 20, 2001.

[109] Global Telecommunications Order, the Pennsylvania Public Utility Commission, September 30, 1999, p. 74.