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June 29, 2000

Ms. Blanca S. Bayo, Director
Division of Records & Reporting
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Re: Docket No. 990649-TP
        Investigation into Pricing of Unbundled Network Elements

Dear Ms. Bayo:

Please find enclosed for filing in the above matter an original and fifteen copies of the
Rebuttal Testimonies of Gregory D. Jacobson, Allen E. Sovereign, and Dennis B.
Trimble on behalf of GTE Florida Incorporated. Service has been made as indicated
on the Certificate of Service. If there are any questions regarding this filing, please
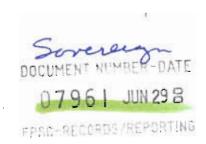contact me at (813) 483-2617.

Sincerely,

Kimberly Caswell

KC:tas
Enclosures

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that copies of the Rebuttal Testimonies of Gregory D. Jacobson, Allen E. Sovereign and Dennis B. Trimble on behalf of GTE Florida Incorporated in Docket No. 990649-TP were sent via U.S. mail on June 29, 2000 to the parties on the attached list.

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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In Re: Investigation into Pricing   )   Docket 990649-TP
Unbundled Network Elements, Phase II)
)

REBUTTAL TESTIMONY OF

GREGORY D. JACOBSON

On Behalf of

GTE FLORIDA INCORPORATED

SUBJECT: COST OF CAPITAL

June 29, 2000

1   **REBUTTAL TESTIMONY OF GREGORY D. JACOBSON**

2

3   <u>**INTRODUCTION**</u>

4

5 **Q.** **PLEASE STATE YOUR NAME, POSITION, AND BUSINESS**

6   **ADDRESS.**

7 **A.** My name is Gregory D. Jacobson, and I am Vice President and

8   Treasurer of each of the GTE Telephone Operating Companies,

9   including GTE Florida Incorporated ("GTE Florida" or "Company"). My

10   business address is 1255 Corporate Dr., Irving, Texas.

11

12 **Q.** **ARE YOU THE SAME GREGORY D. JACOBSON WHO**

13   **PREVIOUSLY FILED DIRECT TESTIMONY IN THIS PROCEEDING**

14   **ON MAY 1, 2000?**

15 **A.** Yes, I am.

16

17 **Q.** **WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**

18   **PROCEEDING?**

19 **A.** The purpose of my testimony is to discuss certain issues included in

20   the direct testimony of John I. Hirshleifer, a witness on behalf of AT&T

21   and MCI Worldcom. Mr. Hirshleifer has made certain arbitrary

22   assumptions and modifications to the application of the Discounted

23   Cash Flow Model (DCF), Capital Asset Pricing Model (CAPM), and

24   capital structure that are inconsistent with prevailing economic theory

25   and which individually and collectively bias his results and understate

1   the forward-looking cost of capital for GTE Florida.

2

3 Q. **WHAT SPECIFIC ASSUMPTIONS MADE BY MR. HIRSHLEIFER**

4   **DO YOU FEEL ARE UNSUPPORTED OR INAPPROPRIATE?**

5 A. My testimony will address specifically Mr. Hirshleifer's inappropriate

6   reliance on a group of seven Telephone Holding Companies ("THCs")

7   as a proxy to determine the cost of capital for GTE Florida, the

8   incorporation of book values into the capital structure rather than

9   using the market capital structures appropriately used by investors,

10   the use of an arbitrary three-stage DCF model, the use of an annual

11   rather than quarterly DCF model, the failure to recognize flotation

12   costs, and Mr. Hirshleifer's application of beta and risk premium in the

13   CAPM.

14

15   My analysis and testimony will show that Mr. Hirshleifer's assumptions

16   and application of the models invalidate his results and therefore his

17   conclusions cannot be relied upon.

18

19   **PROXY GROUP**

20 Q. **WHAT COMPANIES DID MR. HIRSHLEIFER CHOOSE AS HIS**

21   **RISK PROXY FOR GTE FLORIDA?**

22 A. Mr. Hirshleifer selected a group of seven THCs as a proxy to

23   determine the cost of capital for GTE Florida, including Bell Atlantic,

24   BellSouth, SBC Communications, U.S. West, Alltel, CenturyTel, and

25   GTE.

2

1   **Q. DOES MR. HIRSHLEIFER PROVIDE ANY ANALYTICAL OR**

2   **OTHER SUPPORT FOR HIS CONCLUSION THAT THE SELECTED**

3   **THCs ARE COMPARABLE IN RISK TO GTE FLORIDA?**

4   A.   No. Mr. Hirshleifer simply observes that the THCs "were derived from

5   the list of Telephone Operating Companies in Standard and Poor's

6   Industry Survey". (Hirschleifer DT, p. 6)

7

8   **Q. DOES MR. HIRSHLEIFER'S GROUP OF THCs REPRESENT A**

9   **REASONABLE PROXY FOR GTE FLORIDA?**

10   A.   No. As was discussed in my direct testimony, the local exchange

11   carrier holding companies ("LECHCs") are not an appropriate risk

12   proxy for estimating the recommended return on equity for GTE

13   Florida. The market size, dominance, and concentration of the

14   Regional Bell Holding Companies ("RBHCs") local exchange

15   businesses differentiate them from GTE Florida. Even after the GTE

16   Corporation/Bell Atlantic merger is complete, GTE Florida's

17   operational size will remain unchanged and will be dwarfed by Bell

18   South in the state of Florida.

19

20   As a facilities-based provider, GTE Florida must invest very large

21   sums of capital in rapidly changing technologies in order to provide

22   wireline services in Florida. Although the THCs have a similar

23   wireline investment risk, they can mitigate their overall risk by also

24   investing in wireless telecommunications technologies. In addition,

25   as compared to GTE Florida, the THCs can diversify geographically,

1   offer a wider variety of products and services, and can achieve

2   economies of scale associated with greater size and financial

3   strength. Thus, it is actually less risky to provide a bundle of national

4   or international telecommunications services than to provide only local

5   service in a limited geographical territory. GTE Corporation and the

6   RBHCs also provide other services with different risks, such as

7   wireless, internet, and international services, that GTE Florida does

8   not. Even though the THCs share some industry risk characteristics

9   with GTE Florida, the DCF Model currently does not provide accurate

10   estimates of the cost of equity for the THCs.

11

12   Q.   **WHAT ARE THE REASONS THE DCF MODEL FAILS TO PROVIDE**

13   **ACCURATE ESTIMATES OF THE COST OF EQUITY FOR THE**

14   **THCs?**

15   A.   First, from a statistical standpoint I consider the size of Mr.

16   Hirshleifer's seven THCs to be too small and homogeneous to

17   represent a good proxy group for determining the cost of equity for

18   GTE Florida. An aberration in the data for one of the companies or

19   the industry as a whole can bias the DCF and CAPM results.

20

21   Second, the DCF model relies on stock price and dividend growth

22   forecasts that must be in sync to produce accurate results. However,

23   investor reaction to the radical restructuring that is occurring among

24   the LECHCs has caused disproportionate movements in the stock

25   prices relative to expected earnings. A detailed discussion of the

4

1   industry restructuring is included in my direct testimony filed on May

2   1, 2000. Although the financial community expects the restructured

3   companies to achieve significant earnings growth as a result of their

4   merger and restructuring activities, the projected earnings growth

5   associated with prospective merger and restructuring activities has

6   not yet been reflected in the analysts' earnings growth forecasts. As

7   a practice, these analysts do not update forecasts for mergers and

8   restructuring activities until after they have been completed.

9   However, the expected earnings growth associated with the

10   prospective merger and restructuring activities is necessarily included

11   in the companies' stock prices. Therefore, a DCF model that includes

12   only LECHCs will currently produce a downwardly-biased estimate of

13   the cost of equity. This is true for rumored, as well as actual, merger

14   and restructuring activities. In general, if it is believed that two

15   companies are merger candidates, investors will bid up the stock price

16   for the company being acquired and bid down the stock price for the

17   surviving company in anticipation of merger-related revenue and cost

18   saving opportunities.

19

20   Q.   **WHAT EVIDENCE DO YOU HAVE THAT ANALYST GROWTH**

21   **FORECASTS DO NOT REFLECT THE IMPACT OF ANTICIPATED**

22   **MERGERS AND RESTRUCTURINGS?**

23   A.   This can be seen by reviewing IBES earnings growth forecast data for

24   the LECHCs involved in mergers that have already been completed.

25   As shown on Rebuttal Exhibit GDJ-1, the IBES growth rate forecast

5

1   prior to the merger of SBC and Pacific Telesis were 9.50% and

2   3.54%, respectively. The market weighted average of these forecasts

3   is 7.89%. The post-merger growth rate forecast for SBC after the

4   merger was 10.31%, which is higher than the pre-merger rates of both

5   companies. The same is true of the Bell Atlantic/NYNEX, SBC/SNET,

6   and SBC/Ameritech mergers. The average increase in growth rates

7   for these four deals is 1.65%. An increase in growth rate of this

8   magnitude for any of the other pending or anticipated mergers of

9   companies included in Mr. Hirshleifer's narrowly defined proxy group

10   would substantially increase the cost of equity determined in his DCF

11   analysis.

12

13   Aswath Damodaran, Associate Professor of Finance at New York

14   University, states the following concerning the effect of takeover

15   announcements on target-firm values:

16   The stockholders of target firms are the clear winners in

17   takeovers. They earn significant excess returns not only

18   around the announcement of the acquisitions, but also in the

19   weeks leading up to it. Jensen and Ruback (1983) reviewed

20   13 studies that look at abnormal returns around takeover

21   announcements and reported an average excess return of

22   30% to target stockholders in successful tender offers and

23   20% to target stockholders in successful mergers. Jarrell,

24   Brickly, and Netter (1988) reviewed the results of 663 tender

25   offers covering the period from 1962 to 1985 and note that

1	premiums averaged 19% in the 1960s, 35% in the 1970s, and
2	30% for the period from 1980 to 1985. Many of the studies
3	report a run-up in the stock price prior to the takeover
4	announcement, suggesting either a very perceptive financial
5	market or leakage of information about perspective deals.
6	(Aswarth Damodaran, Damodaran on Valuation, John Wiley &
7	Sons, Inc., 1994, page 286.)
8	
9	He goes on to state the following concerning the effect of takeover
10	announcements on bidder-firm values:
11	The effect of takeover announcements on bidder-firm stock
12	prices is not as clear-cut. Jensen and Ruback (1983) reported
13	abnormal returns of 4% for bidding-firm stockholders around
14	tender offers and no abnormal returns around mergers.
15	Jarrell, Brickley, and Netter (1988), in their examination of
16	tender offers from 1962 to 1985, noted a decline in abnormal
17	returns to bidding-firm stockholders from 4.4% in the 1960s to
18	2% in the 1970s to −1% in the 1980s. Other studies indicate
19	that approximately half of all bidding firms earn negative
20	abnormal returns around the announcement of takeovers,
21	suggesting that shareholders are skeptical about the perceived
22	value of the takeover in a significant number of cases. (Ibid,
23	pages 286-287.)
24	
25	

7

1		**COST OF EQUITY**
2	Q.	**HOW WAS THE COST OF EQUITY DETERMINED IN THE**
3		**COMPANY'S COST STUDY?**
4	A.	As discussed in my direct testimony, the cost of equity was based on
5		the average quarterly DCF model results applied to the S&P
6		Industrials.
7		
8		**DISCOUNTED CASH FLOW MODEL**
9	Q.	**HOW DO THE RESULTS OF THE COMPANY'S DCF MODEL**
10		**COMPARE TO THOSE FOR MR. HIRSHLEIFER?**
11	A.	The Company's DCF model resulted in a 14.36% cost of equity for
12		GTE Florida compared with Mr. Hirshleifer's 8.72% cost of equity
13		estimate.
14		
15	Q.	**WHAT ASSUMPTIONS DID MR. HIRSHLEIFER MAKE IN THE**
16		**APPLICATION OF THE DCF MODEL TO ESTIMATE GTE**
17		**FLORIDA'S COST OF EQUITY CAPITAL THAT ACCOUNT FOR**
18		**THE DIFFERENCE IN RESULTS?**
19	A.	Mr. Hirshleifer used a three-stage annual DCF model to estimate GTE
20		Florida's cost of equity capital, whereas the Company used a single-
21		stage quarterly DCF model. Mr. Hirshleifer's three-stage Annual DCF
22		Model is based on the assumptions that: 1) growth in dividends,
23		earnings, and stock prices will occur in three stages; 2) dividends are
24		paid annually at the end of each year; and 3) no flotation costs are
25		incurred when new equity is issued.

1   **Q.**   **ARE THE ASSUMPTIONS USED BY MR. HIRSHLEIFER**

2   **CONSISTENT WITH THE GENERALLY ACCEPTED APPLICATION**

3   **OF THE DCF MODEL?**

4   **A.**   No. I will discuss each of these assumptions below.

5

6   **GROWTH RATE**

7   **Q.**   **HOW DOES MR. HIRSHLEIFER ESTIMATE THE THREE GROWTH**

8   **COMPONENTS OF HIS THREE-STAGE ANNUAL DCF MODEL?**

9   **A.**   Mr. Hirshleifer employs a three-stage DCF model in which his proxy

10   companies' earnings are expected to grow in line with analysts'

11   earnings growth expectations for only the first five. Mr. Hirshleifer

12   then arbitrarily assumes that his proxy companies' earnings growth

13   will linearly decline over a 15-year period to his current 5.14 percent

14   expected growth in the GNP, and then grow at 5.14 percent forever.

15   Mr. Hirshleifer, however, incorrectly omits applying any dividend

16   growth during the first year of his DCF analysis. Mr. Hirshleifer's

17   basic growth assumptions are not only arbitrary, but also inconsistent

18   with evidence that a company's earnings can grow at analysts'

19   expected growth rates for many years and causes him to significantly

20   underestimate GTE Florida's cost of equity.

21

22   **Q.**   **WHY DID MR. HIRSHLEIFER EMPLOY A THREE-STAGE, RATHER**

23   **THAN A ONE-STAGE, DCF MODEL?**

24   **A.**   Mr. Hirshleifer employs a three-stage DCF Model because he

25   allegedly finds it unreasonable to assume that a company's earnings

1   can grow at a rate greater than the growth in GNP forever.

2

3   Q.   DO YOU AGREE THAT A COMPANY'S EARNINGS CANNOT

4   GROW FOREVER AT A RATE GREATER THAN THAT FOR THE

5   GNP?

6   A.   Yes.   If a company were to grow at a rate greater than the growth in

7   the GNP forever, **at some date far in the future**, it would represent

8   most of the economy.

9

10   Q.   DOES THE FACT THAT COMPANIES MAY NOT BE ABLE TO

11   SUSTAIN GROWTH RATES GREATER THAN THAT OF THE GNP

12   FAR INTO THE FUTURE PRECLUDE THE USE OF A SINGLE-

13   STAGE DCF MODEL?

14   A.   No. Mr. Hirshleifer fails to recognize that (1) companies do not have

15   to grow at the same rate forever for the single-stage DCF Model to be

16   a reasonable approximation of how prices are determined in capital

17   markets;   (2)   it is common for companies to grow at rates

18   significantly greater than the rate of growth in GNP for long periods

19   of time; (3) the 10.53 percent average I/B/E/S growth rate for Mr.

20   Hirshleifer's proxy group of THCs is easily achievable for a period

21   longer than five years, especially in an industry such as

22   telecommunications, which is growing significantly faster than the

23   economy as a whole; and   (4) evidence suggests that investors

24   expect the THCs to grow at a rate significantly greater than 5.14

25   percent in the long run.   Consequently, the Commission should

10

1   reject Mr. Hirshleifer's three-stage DCF Model to estimate GTE

2   Florida's cost of equity.

3

4 Q. **WHY IS THE SINGLE-STAGE DCF MODEL A REASONABLE**

5   **APPROXIMATION OF REALITY EVEN THOUGH FIRMS CANNOT**

6   **GROW AT RATES IN EXCESS OF GNP GROWTH FOREVER?**

7 A. The DCF Model assumes that the price of a company's stock is equal

8   to the discounted value of its future stream of dividends. Because

9   future dividends are discounted in the DCF Model, dividends beyond

10   a specific finite period, such as 40 or 50 years, have very little impact

11   in determining a firm's stock price. Thus, the validity of the single-

12   stage DCF Model depends only on whether firms can grow at a

13   constant growth rate in excess of GNP for 40 or 50 years, not on

14   whether firms can grow at a constant growth rate in excess of GNP

15   forever. (Using Mr. Hirshleifer's DCF cost of equity for GTE

16   Corporation, for example, and his 3-stage growth rates, the first 40

17   years of dividends account for 77 percent of the stock price.)

18

19 Q. **WHAT EVIDENCE DO YOU HAVE THAT A COMPANY CAN GROW**

20   **AT A RATE GREATER THAN THE GNP OVER LONG TIME**

21   **PERIODS?**

22 A. A review of companies, which comprise the S&P Industrials from 1979

23   to 1996, indicates that 135 companies had average growth rates

24   greater than the GNP for the 17 years from 1979 to 1996. This

25   represents 56% of the S&P Industrial companies for which data was

1		available during this period. It is also common for companies to grow
2		at rates far greater than the average 5-year growth rate of 10.04%
3		that Mr. Hirshleifer used in his DCF model. Eighty-six (86) or 36% of
4		the S&P Industrial companies sustained growth rates equal to or
5		greater than 150% of the average growth rate for the GNP during the
6		17 years from 1979 to 1996.
7		
8		I also determined, that depending on the company, it would take
9		anywhere from 1,266 to 13,018,530 years for these companies to
10		become 100% of the economy if they were to maintain their historical
11		revenue growth rate as compared to the GNP. The average and
12		median number of years for the companies was 243,267 and 54,482,
13		respectively. These time periods are clearly beyond any practical and
14		relevant investment horizon. Therefore, an arbitrary assumption to
15		reduce analysts' growth rates beginning with year six and replace
16		them with Mr. Hirshleifer's own growth estimates is unreasonable.
17		
18	Q.	DOES MR. HIRSHLEIFER PROVIDE EVIDENCE THAT HIS PROXY
19		COMPANIES CAN GROW AT 10.53% FOR ONLY FIVE YEARS?
20	A.	Mr. Hirshleifer provides no evidence to support this arbitrary
21		assumption.
22		
23		
24	Q.	DO YOU HAVE EVIDENCE THAT INVESTORS EXPECT THE THCs
25		TO GROW AT A RATE HIGHER THAN 10.53% FOR A PERIOD

12

1   **GREATER THAN FIVE YEARS?**

2   A.   Yes. Value Line publishes an estimate of each company's long-run

3   growth from internal sources beyond the period 2003-2005. Growth

4   from internal sources is measured by the product of the company's

5   forecasted rate of return on equity and its forecasted retention ratio

6   and is an indicator of expected growth beyond the forecasted 5-year

7   period. As shown on Rebuttal Schedule GDJ-2, Value Line's long-run

8   internal growth rate for the THCs is 16.6%, indicating that Value Line

9   expects the THCs to grow at rates higher than the average IBES 5-

10   year growth rate of 10.53% for a period greater than five years.

11

12   Q.   **MR. HIRSHLEIFER JUSTIFIES HIS USE OF THE THREE-STAGE**

13   **GROWTH MODEL ON PAGE 12 OF HIS TESTIMONY WITH A**

14   **QUOTE BY ASWATH DAMODARAN.   WHAT ARE THE**

15   **CONDITIONS UNDER WHICH MR. DAMODARAN INDICATES USE**

16   **OF A MULTI-STAGE DCF MODEL MAY BE USEFUL?**

17   A.   Mr. Damodaran indicates that a multi-stage DCF model "may be the

18   more appropriate model to use for a firm whose earnings are growing

19   at very high rates". He goes on to say that "growth rates over 25%

20   would qualify as very high". None of the company's included in Mr.

21   Hirshleifer's THC proxy group nor the Company's S&P Industrials

22   group have growth rates greater than 25%. Mr. Damodaran points

23   out a further weakness to the multi-stage model when he states:

24   It requires a much larger number of inputs: year-specific

25   payout ratios, growth rates, and betas. For firms in which

1		there is substantial noise in the estimation process, the
2		errors in these inputs can overwhelm any benefits that
3		accrue from the additional flexibility in the model.
4		(Damodaran, Aswath, *Damodaran on Valuation: Security*
5		*Analysis for Investment and Corporate Finance*, John Wiley
6		& Sons, New York, 1994, pp. 118-119.)
7		
8		Such "noise" would include the previously discussed merger and
9		restructuring activities that the THCs are currently undergoing.
10		

DIVIDEND FREQUENCY

12 Q. DO YOU AGREE WITH MR. HIRSHLEIFER'S USE OF THE

13 ANNUAL DCF MODEL TO ESTIMATE THE COST OF EQUITY FOR

14 COMPANIES THAT PAY DIVIDENDS QUARTERLY?

15 A. No. Financial theory suggests that the present value of a stream of

16 dividends depends on both the magnitude and the timing of the

17 dividend payments. Common sense would tell us the same. Since

18 dividends are, in fact, paid quarterly, Mr. Hirshleifer should have used

19 a DCF Model that assumes quarterly dividend payments. The

20 Quarterly DCF Model provides the most accurate basis for valuing the

21 dividend stream expected by the investor.

22

23

24 Q. WOULD AN INVESTOR USE AN ANNUAL DCF MODEL TO VALUE

25 BONDS WHEN INTEREST IS PAID SEMI-ANNUALLY?

1   A.   No. That would be irrational. Bond investors recognize that prices

2   depend on both the timing and the magnitude of the cash flows

3   related to their investments. Since bond cash flows (interest

4   payments) occur semi-annually, bond investors use a semi-annual

5   DCF Model to value bond investments.

6

7   Q.   **WOULD A BANK OR MORTGAGE BROKER USE AN ANNUAL**

8   **DCF MODEL WHEN VALUING MORTGAGE LOANS?**

9   A.   No. Banks and mortgage brokers recognize that mortgage interest

10   and principal payments are made monthly. Therefore, they use a

11   monthly DCF model to evaluate investments in mortgage loans.

12

13   Q.   **MR. HIRSHLEIFER, ON PAGE 44 OF HIS TESTIMONY, INDICATES**

14   **THAT QUARTERLY COMPOUNDING IS UNNECESSARY**

15   **BECAUSE THE THCs ARE ABLE TO REINVEST THEIR CASH**

16   **FLOWS ON A MONTHLY BASIS. IS THIS POINT RELEVANT TO**

17   **THE APPLICATION OF THE DCF MODEL?**

18   A.   No. The DCF Model is designed to model the cash flows received by

19   *investors*, not the cash flows received by the company. Most all

20   companies have stable cash flows that they are able to reinvest on a

21   monthly basis. This, however, is irrelevant to investors. Investors are

22   only interested in the cash flows associated with their investments. By

23   definition the DCF recognizes these cash flows to be the stock

24   purchase price, dividends, and the stock selling price. As is the case

25   with most publicly traded companies, dividends are paid quarterly.

1   Since investors receive quarterly dividends, the Quarterly DCF Model

2   is the most accurate model for estimating the company's cost of

3   equity.

4

5 Q. **DOES MR. HIRSHLEIFER'S COLLEAGUE, PROFESSOR**

6   **CORNELL, SUPPORT THE USE OF A QUARTERLY DCF MODEL**

7   **FOR A COMPANY THAT PAYS DIVIDENDS QUARTERLY?**

8 A. Yes. In his book (Bradford Cornell, Corporate Valuation, The

9   McGraw-Hill Companies, Inc., 1993, page 198.) Professor Cornell

10   presents a quarterly DCF analysis that incorporates the quarterly

11   payment of dividends to estimate Apple Computer's cost of equity.

12

13 Q. **WHAT IS MR. HIRSHLEIFER'S RELATIONSHIP WITH**

14   **PROFESSOR CORNELL?**

15 A. Mr. Hirshleifer and Professor Cornell currently work together at

16   Charles River Associates, Inc. In addition, Mr. Hirshleifer was

17   employed at FinEcon from 1990-1999, during which time Professor

18   Cornell was President of FinEcon. Mr. Hirshleifer has also

19   collaborated on at least one article with Professor Cornell entitled

20   "Estimating the Cost of Equity Capital" for the Contemporary Finance

21   Digest in September 1977. Mr. Hirshleifer first appeared as a witness

22   in a GTE rate proceeding in Kentucky Administrative Case No. 360,

23   where he adopted the direct testimony of Professor Cornell. Mr.

24   Hirshleifer's testimony has mirrored Professor Cornell's Kentucky

25   testimony during numerous GTE regulatory proceedings in which he

1		has appeared as a cost of capital witness on behalf of AT&T and/or
2		MCI.
3		
4		**FLOTATION COSTS**
5	Q.	**DOES MR. HIRSHLEIFER RECOGNIZE FLOTATION COSTS IN HIS**
6		**DCF MODEL?**
7	A.	Mr. Hirshleifer does not recognize flotation costs in his DCF model,
8		even though all securities sold in the capital markets incur flotation
9		costs, such as underwriters' commissions, registration fees, legal and
10		audit fees, and printing expenses. These items typically cost from
11		3%-5% of the stock price [see Clifford W. Smith, "Alternative Methods
12		for Raising Capital, *Journal of Financial Economics* 5 (1977) 273--
13		307]. In addition, there is likely to be a decline in price associated
14		with the issuance of new shares. This cost has been estimated to be
15		2%-3% of the stock price. [see Richard H. Pettway "The Effects of
16		New Equity Sales Upon Utility Share Prices," *Public Utilities*
17		*Fortnightly*, May 10, 1984, 35--39].
18		
19		Based on these factors, total flotation costs, including both issuance
20		expenses and market pressure, range between 5%-8% of the stock
21		price. A conservative 5% was used in the Company's quarterly DCF
22		model.
23		
24	Q.	**MR. HIRSHLEIFER STATES ON PAGE 45 OF HIS TESTIMONY**
25		**THAT IT IS NOT NECESSARY TO INCLUDE FLOTATION COSTS**

17

1   IN THE DCF MODEL "BECAUSE THE PRICE OF THE
2   COMPANIES' STOCK HAS ACCOUNTED FOR FLOTATION
3   COSTS ALREADY". DO YOU AGREE?

4   A.   No. Flotation costs are no different than any other forward-looking

5   cost of doing business. They must be included in the cost model

6   somewhere. It just happens that these costs are accounted for in the

7   cost of capital rather than listed as a separate financing cost. If Mr.

8   Hirshleifer's argument was true, there would be no requirement to

9   include any other forward-looking expenses, such as the cost of

10   services and sales or general and administrative costs in GTE's

11   forward-looking cost study, because these expenses are also

12   reflected in GTE's stock price. Mr. Hirshleifer has also lost sight of a

13   key principle in the development of the cost model in this proceeding

14   – the model is to assume that the network is to be built from scratch.

15   Given this assumption, it follows that the capital utilized to fund its

16   construction would be newly issued and would indeed incur flotation

17   cost.

18

19   Q.   WHAT RETURN ON COMMON EQUITY IS PRODUCED FOR THE

20   THCs AFTER CORRECTING FOR THE ARBITRARY

21   ASSUMPTIONS IN MR. HIRSHLEIFER'S DCF MODELS?

22   A   After correcting for the deficiencies discussed above, the DCF model

23   produces a 12.84% return on equity for the THCs as shown on

24   Rebuttal Schedule GDJ-3. The remaining difference from the

25   Company's proposed 14.36% return on equity is primarily due to the

1		use of an inappropriate proxy group.
2		
3		**CAPITAL ASSET PRICING MODEL**
4	Q.	**WAS A CAPM USED BY THE COMPANY TO CALCULATE A**
5		**RETURN ON EQUITY FOR GTE FLORIDA IN THIS PROCEEDING?**
6	A.	No.
7		
8	Q.	**DO YOU AGREE WITH THE ASSUMPTIONS THAT MR.**
9		**HIRSHLEIFER USED TO DEVELOP HIS CAPM?**
10	A.	No. I disagree with the assumptions that Mr. Hirshleifer used for the
11		beta and risk premium in his CAPM. I will discuss each of these
12		assumptions below.
13		
14		**BETA**
15	Q.	**HOW DID MR. HIRSHLEIFER ESTIMATE THE BETA**
16		**COMPONENTS OF HIS CAPM?**
17	A.	Mr. Hirshleifer estimates the beta component of his CAPM analysis in
18		four steps. First, Mr. Hirshleifer estimates raw betas for each company
19		by regressing the monthly return on each company's stock against the
20		monthly return on the S&P 500 over the five-year period ending
21		September 30, 1999. Second, Mr. Hirshleifer calculates an unlevered
22		beta for each company using a theoretical equation relating the
23		company's estimated beta to its debt to equity ratio. The unlevered
24		beta is an estimate of the beta Mr. Hirshleifer believes the company
25		would have if it had no debt in its capital structure. Third, Mr.

1		Hirshleifer calculates the average unlevered beta for all companies in
2		his telecommunications sample. Fourth, Mr. Hirshleifer estimates the
3		levered beta for GTE Corporation by re-levering the average
4		unlevered beta for all companies using Corporation's market value
5		debt-to-equity ratio.
6		
7	Q.	**DO YOU AGREE THAT USE OF THESE HISTORICAL BETAS WILL**
8		**RESULT IN A FORWARD-LOOKING COST OF EQUITY FOR GTE**
9		**FLORIDA?**
10	A.	No. Mr. Hirshleifer's average historical beta of 0.67 significantly
11		underestimates the future business risk of the THCs relative to the
12		market. The Telecommunications Act of 1996 removed all barriers to
13		entry to GTE's local exchange business. As a result of this
14		legislation, the risk of investing in the THCs has increased
15		significantly. Forward-looking betas for the THCs are undoubtedly
16		greater than the five-year historical betas estimated by Mr. Hirshleifer.
17		
18	Q.	**DO YOU AGREE WITH MR. HIRSHLEIFER'S USE OF RAW BETAS**
19		**BASED ON FIVE YEARS OF HISTORICAL DATA TO ESTIMATE**
20		**THE FORWARD-LOOKING COST OF CAPITAL FOR USE IN**
21		**FORWARD-LOOKING COST STUDIES?**
22	A.	No. Mr. Hirshleifer fails to adjust his raw betas for the well-known
23		tendency of raw betas to converge over time to the overall mean beta
24		of 1.0. Consequently, the betas that Mr. Hirshleifer uses would not
25		be considered forward-looking in nature.

20

1   Q.   **WHAT EVIDENCE DO YOU HAVE THAT RAW BETAS TEND TO**

2   **CONVERGE OVER TIME TO THE OVERALL MEAN BETA OF 1.0**

3   **FOR ALL COMPANIES?**

4   A.   The evidence that raw betas tend to converge over time to the overall

5   mean beta of 1.0 for all companies was first presented by Marshall

6   Blume: (1971) "On the Assessment of Risk," *Journal of Finance* 26,

7   1-10; (1975) "Betas and Their Regression Tendencies," *Journal of*

8   *Finance* 30, 785-795; and (1979) "Betas and Their Regression

9   Tendencies: Some Further Evidence," *Journal of Finance* 34, 265-

10   267.

11

12   Q.   **DOES THE FINANCIAL COMMUNITY ADJUST THEIR BETA**

13   **CALCULATIONS TO ACCOUNT FOR THE TENDENCY OF RAW**

14   **BETAS TO CONVERGE OVER TIME TO THE MEAN BETA OF 1.0?**

15   A.   Yes. Value Line and Merrill Lynch use adjustment procedures to

16   account for the tendency of raw betas to converge over time to the

17   mean beta of 1.0.

18

19   Q.   **HOW DO THE VALUE LINE BETAS COMPARE TO MR.**

20   **HIRSHLEIFER'S RAW BETAS FOR THE THCs?**

21   A.   As shown on Rebuttal Exhibit GDJ-4, Value Line's average forward-

22   looking beta is .82 as compared to Mr. Hirshleifer's average raw beta

23   calculation of .67 for the THCs.

24

25

RISK PREMIUM

Q **WHAT RISK PREMIUM DID MR. HIRSHLEIFER USE IN HIS CAPM?**

A. Mr. Hirshleifer's estimated risk premiums over one-month Treasury Bills and over 20-year Treasury Bonds to be 7.5% and 5.5%, respectively.

Q. **DO YOU AGREE WITH HIS ASSESSMENT?**

A. No. I believe a 7.47% risk premium, which is the arithmetic average of the difference between the total return of the S&P 500 and Long-term Government Bonds for the period 1926 to 1998 is a fairer proxy for the risk premium.

Q. **HOW DID MR. HIRSHLEIFER ESTIMATE THE RISK PREMIUM FOR HIS CAPM?**

A. Mr. Hirshleifer uses a wide array of methodologies to estimate the market risk premium, including a DCF methodology and both arithmetic and geometric average premiums over four different historical time periods, and using both the one-month Treasury Bills and 20-year Treasury Bonds as surrogates for the risk-free rate of return.   This arbitrary selection of time periods and model assumptions again result in a significant downward bias in his estimation of the cost of equity for GTE Florida. Additional portions of this section address specific instances where Mr. Hirshleifer has used arbitrary or inconsistent methods or time frames in estimating the risk premium to be used in his CAPM.

1   Q.   **DO YOU AGREE WITH MR. HIRSHLEIFER'S DCF METHOD OF**

2   **ESTIMATING THE MARKET RISK PREMIUM?**

3   A.   No. In his DCF method, Mr. Hirshleifer's determines the market return

4   utilizing the same three-stage DCF Model that I previously discussed.

5   As noted above, his DCF Model is based on the arbitrary and

6   incorrect assumption that companies can not sustain IBES growth

7   rates for more than five years. In addition, his DCF Model ignores the

8   fact that companies pay dividends on a quarterly basis and ignores

9   the existence of flotation costs.

10

11   Q.   **HOW DID MR. HIRSHLEIFER DEVELOP HIS ESTIMATES OF**

12   **HISTORICAL RISK PREMIUMS?**

13   A.   As shown on his Attachment JH-8, Mr. Hirshleifer calculates both

14   arithmetic mean and geometric mean risk premium results for four

15   different periods: 1802-1998, 1926-1998, 1951-1998, and 1971-1998

16   using data compiled by Jeremy J. Siegel and Ibbotson Associates.

17   The risk premium results based on the arithmetic mean are

18   significantly higher than those based on the geometric mean in every

19   time period utilized by Mr. Hirshleifer.

20

21

22   Q.   **DOES IBBOTSON ASSOCIATES ADVOCATE USING THE**

23   **ARITHMETIC OR GEOMETRIC MEAN IN ESTIMATING THE COST**

24   **OF CAPITAL?**

25   A.   Ibbotson Associates recommends that a risk premium based on the

1   arithmetic mean is the "correct rate for forecasting, discounting, and

2   estimating the cost of capital" (See Ibbotson's *1997 Yearbook*). They

3   further state:

4   The geometric mean is backward-looking, measuring the

5   change in wealth over more than one period. On the other

6   hand, the arithmetic mean better represents a typical

7   performance over single periods and serves as the correct rate

8   for forecasting, discounting, and estimating the cost of capital.

9

10   The arithmetic mean is correct because an investment with

11   uncertain returns will have a higher expected ending wealth

12   value than an investment that earns, with certainty, its

13   compound or geometric rate of return every year. (SBBI 1997

14   Yearbook, p. 104 and 155.)

15

16   Q.   **HAS MR. HIRSHLEIFER'S COLLEAGUE, PROFESSOR CORNELL,**

17   **EXPRESSED AN OPINION ON WHETHER THE ARITHMETIC**

18   **MEAN OR GEOMETRIC MEAN PROVIDES A BETTER ESTIMATE**

19   **OF THE MARKET RISK PREMIUM?**

20   A.   Yes. In his book (Bradford Cornell, Corporate Valuation, The McGraw-

21   Hill Companies, Inc., 1993, page 217.), Mr. Cornell states, "As shown

22   by Bodie, Kane, and Marcus, the best estimate of expected returns

23   over a given future holding period is the arithmetic average of past

24   returns over the same holding period." Mr. Cornell also stated in

25   cross-examination in Pennsylvania in Docket No. A-310203F0002,

1		"Personally, I think the arithmetic average was a better choice."
2		[Transcript at page 791.]
3		
4	Q.	**DOES IBBOTSON ASSOCIATES ADVOCATE USING ANY**
5		**PARTICULAR TIME PERIOD FOR ESTIMATING THE MARKET**
6		**RISK PREMIUM?**
7	A.	Yes. They advocate using the 1926 to the present time period for
8		estimating the market risk premium.
9		
10	Q.	**HAS MR. HIRSHLEIFER'S COLLEAGUE, PROFESSOR CORNELL,**
11		**EVER EXPRESSED AN OPINION ON WHICH TIME PERIOD IS**
12		**MOST APPROPRIATE TO USE IN A RISK PREMIUM STUDY?**
13	A.	Yes. In his book, (Ibid, pages 212-213.)
14		Professor Cornell states:
15		Before an average can be calculated, the sample period
16		must be determined. The longest period for which
17		reliable stock price data are readily available is January
18		1926 to the present. …Given the significant variation in
19		the risk premium, altering the sample period when
20		calculating the average is hazardous because it can
21		greatly affect the estimate. To avoid data mining, a
22		reasonable solution is to use the entire period from
23		1926 to the present, or as a substitute, the postwar
24		period from 1945 to the present. Finer partitioning of the
25		sample data, even if done with the best intentions,

1   raises the specter of introducing bias.

2

3 **Q.** **HOW DO THE RISK PREMIUMS COMPUTED BY MR.**

4 **HIRSHLEIFER FOR THE PERIOD 1926 TO THE PRESENT**

5 **COMPARE TO THOSE USED IN HIS CAPM?**

6 A. As shown on Mr. Hirshleifer's Attachment JH-8, the arithmetic mean

7 risk premium for the period 1926 to 1998 is 9.35% over one-month

8 Treasury Bills and 7.48% over Long-term Treasury Bonds. These risk

9 premiums are 185 and 198 basis points, respectively, higher than

10 those used by Mr. Hirshleifer in his CAPM.

11

12 **Q.** **HOW DOES THE RISK PREMIUM FOR THE PERIOD 1802 TO THE**

13 **PRESENT COMPARE TO THAT FOR THE PERIOD 1926 TO THE**

14 **PRESENT?**

15 A. The arithmetic mean risk premium for the period 1802 to 1998 as

16 computed by Mr. Hirshleifer is 5.58% over one-month Treasury Bills

17 and 4.78% over Long-term Treasury Bonds. These risk premiums are

18 192 and 72 basis points, respectively, lower than those for the period

19 1926 to 1998.

20

21 **Q.** **IS THE PERIOD 1802 TO THE PRESENT A REPRESENTATIVE**

22 **TIME PERIOD FOR ESTIMATING THE RISK PREMIUM IN THIS**

23 **PROCEEDING?**

24 A. No. As Professor Cornell indicates, the period 1926 to the present is

25 the longest period for which reliable data are available. During the

1   19th century, the stock market was comprised of very few stocks,

2   mainly the stocks of banks, railroads, and a few insurance companies

3   located in the Northeast. These stocks were narrowly traded. In

4   addition, a rough estimate of dividends for these stocks was made

5   because dividend data was not available. Furthermore, stock prices

6   for the period generally were based on averages of high and low bids,

7   not prices at which trades actually occurred. For these and many

8   other reasons, the historical returns on these stocks are simply not

9   indicative of returns investors expect to receive on stock investments

10   today. (Siegel's study relies on data obtained from G. William

11   Schwert, "Indexes of U.S. Stock Prices from 1802 to 1987," *Journal*

12   *of Business*, 1990. Vol. 63, no. 3. Schwert discusses the many

13   problems with stock return data prior to 1926.)

14

15   Q.   **DO YOU HAVE ANY OTHER COMMENTS REGARDING MR.**

16   **HIRSHLEIFER'S APPLICATION OF THE CAPM?**

17   A   Yes. The development of Mr. Hirshleifer's CAPM is based on a wide

18   array of inconsistent variables that conflict with conventional practice

19   and with positions taken in the book written by his firm's principal,

20   Bradford Cornell. Considering this, it would appear that the CAPM he

21   used in this proceeding was constructed in a manner solely for the

22   purpose of minimizing the return on equity. After correcting for the

23   deficiencies discussed above (i.e. beta and risk premium

24   development), Mr. Hirshleifer's CAPM produces a 12.85% return on

25   equity for the THCs as shown on Rebuttal Schedule GDJ-4 as

27

1		compared to his 10.17% CAPM estimate for GTE.
2		
3		**CAPITAL STRUCTURE**
4	Q.	**HOW WERE THE PERCENTAGES OF DEBT AND EQUITY**
5		**DEFINED IN YOUR DIRECT TESTIMONY FOR DETERMING GTE**
6		**FLORIDA'S WEIGHTED AVERAGE COST OF CAPITAL?**
7	A.	My calculations were based on the market values of the debt and
8		equity for the S&P Industrials. The use of a market value capital
9		structure in determining a company's weighted average cost of capital
10		is aligned with that used by economists and investors. (See, for
11		example, Copeland/Weston, Chapter 13, *Financial Theory and*
12		*Corporate Policy*, Third Edition, 1988, Addison-Wesley, Reading, MA.;
13		Brealey/Myers, Chapter 9, page 190, *Principles of Corporate Finance*,
14		Fourth Edition, 1991, McGraw-Hill; and Robert C. Higgins, Chapter 8,
15		*Analysis for Financial Management, Fourth Edition,* 1995, Fourth
16		Edition, Irwin.)
17		
18	Q.	**WHY WAS THE CAPITAL STRUCTURE MEASURED IN TERMS OF**
19		**THE MARKET VALUES OF ITS DEBT AND EQUITY?**
20	A.	Economists measure a firm's capital structure in terms of the market
21		values of its debt and equity because that is the best measure of the
22		amounts of debt and equity that investors have invested in the
23		company on a going-forward basis. Measuring a firm's capital
24		structure in terms of market value allows its managers to choose a
25		financing strategy that maximizes the value of the firm, where the

1		value of the firm is the sum of the market value of the firm's debt and
2		equity.
3		
4	Q.	**WHAT METHODOLOGY WAS USED IN GTE FLORIDA'S COST**
5		**STUDY FOR MEASURING THE MARKET-BASED PERCENTAGES**
6		**OF DEBT AND EQUITY IN THE CAPITAL STRUCTURE?**
7	A.	As discussed in my direct testimony, the market capital structure of
8		the S&P Industrials, a composite of large competitive companies in
9		the United States, was used to calculate the average market-based
10		percentages of debt and equity. The average market-based capital
11		structure of the S&P Industrials at December 31, 1998 contained
12		22.17 percent debt and 77.83 percent equity.
13		
14	Q.	**HOW DOES THE AVERAGE MARKET-BASED CAPITAL**
15		**STRUCTURE OF THESE COMPETITIVE FIRMS COMPARE TO**
16		**THE AVERAGE MARKET-BASED CAPITAL STRUCTURE OF THE**
17		**RBHCs AND GTE?**
18	A.	As shown in Rebuttal Schedule GDJ-5, the weighted average market-
19		based capital structure of Mr. Hirshleifer's THCs contains 20.63%
20		debt and 79.37% equity, which is comparable to the average market-
21		based capital structure of the S&P Industrials. As also can be
22		determined from the schedule, the equity percentages of the RBHCs
23		and GTE are lower than GTE's potential competitors for local services
24		(i.e. AT&T, Frontier, MCI WorldCom, and Sprint).
25		

1   Q.   **WHAT CAPITAL STRUCTURE DID MR. HIRSHLEIFER USE IN**

2   **COMPUTING THE WEIGHTED AVERAGE COST OF CAPITAL FOR**

3   **GTE FLORIDA?**

4   A.   Although Mr. Hirshleifer recognizes the appropriateness of a market

5   capital structure in his analysis, the 8.66% midpoint of Mr. Hirshleifer's

6   cost of capital range is based on a 50%/50% average of GTE

7   Corporations' book and market capital structures. Again, it appears

8   that Mr. Hirshleifer arbitrarily made an adjustment to produce an

9   artificially low weighted average cost of capital estimate. The use of

10   a historical accounting-based (book) capital structure is inconsistent

11   with the forward-looking competitive assumptions in the investment

12   and expense components of GTE Florida's cost studies. Contrary to

13   Mr. Hirshleifer's assertion on page 33 of his testimony, there is no

14   "debate among academics, practitioners, and forensic experts

15   regarding the choice between book and market weights" in

16   determining a companies weighted average cost of capital. Mr.

17   Hirshleifer cites no academic evidence for his assertion that investors

18   measure returns on their investments relative to the booked capital

19   structure of a company. Indeed, they are only concerned with the risk

20   and returns they receive on the money they have invested in their

21   investment portfolios using market value weights because they

22   purchase a company's stocks and bonds at market price, not at book

23   value.

24

25

1   Q.   **DO YOU AGREE WITH MR. HIRSHLEIFER'S STATEMENT ON**

2   **PAGE 33 OF HIS DIRECT TESTIMONY THAT "IN TRADITIONAL**

3   **RATE OF RETURN HEARINGS, CAPITAL STRUCTURE IS**

4   **TYPICALLY PRESENTED IN TERMS OF BOOK VALUE**

5   **WEIGHTS"?**

6   A.   Yes, I do. However, as I explain on pages 25-30 of my Direct

7   Testimony, the utilization of a book-based capital structure by

8   regulators is based on the assumption that the market value and book

9   value of common equity are approximately the same. This

10   assumption was developed on market conditions prevalent in the

11   early to late 1980s that no longer hold true. Consequently, the current

12   use of a book-based capital structure in determining a company's

13   weighted average cost of capital thus has no basis in economic or

14   financial theory. Additionally, the cost of service in this proceeding

15   will be measured on the basis of forward-looking economic costs not

16   historical accounting costs. Therefore, Mr. Hirshleifer's book value

17   capital structures are also not consistent with the use of forward-

18   looking economic costs.

19

20   Q.   **WHY HAVE THE BOOK-VALUE AND MARKET-VALUE CAPITAL**

21   **STRUCTURES OF THE THCS BECOME SO DRAMATICALLY**

22   **DIFFERENT IN RECENT YEARS?**

23   A.   For two reasons. First, there has been a tremendous surge in equity

24   prices in the market place during the last 10 to 15 years. This surge

25   has impacted the capital markets generally across all business

31

1   segments. Also, because the THCs have taken very large

2   extraordinary accounting write-offs in recent years as they prepared

3   for a fully competitive telecommunications market-place. As shown on

4   Rebuttal Exhibit GDJ-6, the equity in the book value capital structure

5   of Mr. Hirshleifer's THCs has been reduced by at least $28.8 billion as

6   a result of the discontinuation of regulatory accounting principles

7   established in Financial Accounting Standard 71 ("FAS 71") and for

8   write-offs for Other Post Employment Benefits ("OPEB"). These write-

9   offs represent more than 52 percent of the total equity in Mr.

10   Hirshleifer's THCs' book-based capital structures. Since extraordinary

11   write-offs, by definition, are infrequent and unusual, capital structures

12   that include these write-offs cannot be representative of his firms'

13   long-run target capital structures. Thus, Mr. Hirshleifer has clearly

14   erred in using his THCs' book value capital structures for the purpose

15   of estimating GTE Florida's forward-looking economic cost of capital.

16   The THCs' book value capital structures are neither forward looking

17   nor economic.

18

19   Q.   **DOES MR. HIRSHLEIFER'S COLLEAGUE, PROFESSOR**

20   **CORNELL, MAKE ANY RECOMMENDATIONS IN HIS BOOK**

21   **REGARDING THE CORRECT CAPITAL STRUCTURE FOR USE IN**

22   **MEASURING A COMPANY'S WEIGHTED AVERAGE COST OF**

23   **CAPITAL?**

24   A.   Yes. Professor Cornell clearly recommends the use of a firm's target

25   market value capital structure, not its book value capital structure. On

32

1   page 224 of his book (Bradford Cornell, Corporate Valuation, The

2   McGraw-Hill Companies, Inc., 1993.) he states, "The appropriate

3   weights to use are the firm's *long-run target weights stated in terms*

4   *of market value* [original emphasis]." On page 225, Professor Cornell

5   writes,

6   It is also possible to avoid the circularity by estimating the long-

7   run target weights directly. For example, the appraiser may

8   assume that all the comparable firms have the same target

9   capital structures. Given this assumption, the best estimate of

10   the target capital structure is the average capital structure

11   across the comparable firms. If the comparable firms are

12   publicly traded, their **market value weights can be**

13   **calculated directly and averaged** [emphasis added]. (Ibid.)

14

15   Finally, on pages 228-229 of his book, he provides an example of the

16   correct way to calculate the weighted average cost of capital:

17   Table 7-8 puts all the pieces together and calculates FERC's

18   weighted average cost of capital using the target financing

19   weights chosen by management. *Notice that the target*

20   *weight of equity is significantly greater than the book*

21   *value weight. This reflects management's realization that*

22   *the market value of equity is much greater than the book*

23   *value*" [emphasis added]. (Ibid.)

24

25   **Q.   ON PAGE 13 OF HIS DIRECT TESTIMONY, MR. HIRSHLEIFER**

33

1   **ALSO CITES A BOOK BY COPELAND, KOLLER, AND MURRIN,**

2   **ENTITLED,** *VALUATION: MEASURING AND MANAGING THE*

3   *VALUE OF COMPANIES,* **AND BY DAMODARAN, ENTITLED,**

4   *DAMODARAN ON VALUATION: SECURITY ANALYSIS FOR*

5   *INVESTMENT AND CORPORATE FINANCE.* **DO COPELAND,**

6   **KOLLER, AND MURRIN AND DAMODARAN MAKE ANY**

7   **RECOMMENDATIONS IN THEIR BOOKS REGARDING THE**

8   **CORRECT CAPITAL STRUCTURE TO USE IN MEASURING A**

9   **COMPANY'S WEIGHTED AVERAGE COST OF CAPITAL?**

10   A.   Yes. Copeland, Koller, and Murrin clearly recommend the use of

11   market value capital structure weights to calculate the weighted

12   average cost of capital. Specifically, they state at page 240 that one

13   must "employ market value weights for each financing element,

14   because market values reflect the true economic claim of each type

15   of financing outstanding, whereas book values usually do not."

16   Damodaran, at page 41 in the section titled, "Calculating the Weights

17   of Debt and Equity Components, Market-Value versus Book-Value

18   Weights," states:

19   The weights assigned to equity and debt in calculating

20   the weighted average cost of capital have to be based

21   upon market value, not book value. The rationale rests

22   on the fact that the cost of capital measures the cost of

23   issuing securities, stocks as well as bonds, to finance

24   projects and that these securities are issued at market

25   value, not at book value.

1 Q. **DOES MR. HIRSHLEIFER EXPLAIN WHY HE USED BOTH BOOK**

2   **AND MARKET VALUE CAPITAL STRUCTURE WEIGHTS TO**

3   **CALCULATE GTE FLORIDA'S WEIGHTED AVERAGE COST OF**

4   **CAPITAL, WHEN ACADEMIC EXPERTS UNANIMOUSLY**

5   **RECOMMEND THE USE OF MARKET VALUE CAPITAL**

6   **STRUCTURE WEIGHTS ALONE?**

7 A. Yes. On pages 40-41 of his direct testimony, Mr. Hirshleifer argues

8   that: (1) the network element leasing business is less risky than the

9   THCs' other businesses; and (2) the network element leasing

10   business should thus have more leverage than the THCs' other

11   businesses. He then speculates that the "higher debt weight [in the

12   THCs' average book value capital structure] may be more

13   representative of the target capital structure for the low-risk network

14   element leasing business."

15

16 Q. **DO YOU AGREE WITH MR. HIRSHLEIFER'S OPINION THAT HIS**

17   **TELEPHONE HOLDING COMPANIES ARE MORE RISKY THAN**

18   **GTE FLORIDA'S NETWORK ELEMENT LEASING BUSINESS?**

19 A. No. Even if GTE Florida's network element leasing business were less

20   risky than each of Mr. Hirshleifer's THCs' other businesses, it does

21   not follow that the network element leasing business is less risky than

22   the THCs as a whole. As was discussed earlier, GTE Florida must

23   invest very large sums of capital in rapidly changing technologies in

24   order to provide wireline services in Florida. Although the THCs have

25   a similar wireline investment risk, they can mitigate their overall risk

1   by also investing in wireless telecommunications technologies.   In

2   addition, as compared to GTE Florida, the THCs can diversify

3   geographically, offer a wider variety of products and services, and can

4   achieve economies of scale associated with greater size and financial

5   strength. Thus, it is actually less risky to provide a bundle of national

6   or international telecommunications services than to provide only local

7   service in a limited geographical territory.

8

9   **Q.   DO YOU AGREE WITH MR. HIRSHLEIFER THAT THE NETWORK**

10   **ELEMENT LEASING BUSINESS SHOULD HAVE A MORE HIGHLY**

11   **LEVERAGED MARKET VALUE CAPITAL STRUCTURE THAN THE**

12   **THCs?**

13   A.   No. Since the network element leasing business is at least as risky as

14   Mr. Hirshleifer's THCs, it should have a market value capital structure

15   that contains at least as much equity as the THCs' average market

16   value capital structure.

17

18   **Q.   DO YOU AGREE WITH MR. HIRSHLEIFER'S STATEMENT ON**

19   **PAGE 40 THAT THE "HIGHER DEBT WEIGHT [IN THE BOOK**

20   **VALUE   CAPITAL   STRUCTURE]   MAY   BE   MORE**

21   **REPRESENTATIVE OF THE TARGET CAPITAL STRUCTURE" OF**

22   **GTE FLORIDA'S NETWORK ELEMENT LEASING BUSINESS?**

23   A.   No. Since book value capital structures are inherently backward

24   looking, they can provide no useful information on the target market

25   value capital structure of GTE Florida's network element leasing

1   business.

2

3   Second, Mr. Hirshleifer simply asserts that the reported book value

4   capital structures of his THCs *"may be"* representative of the target

5   market value capital structure of GTE Florida's network leasing

6   business. He provides no evidence or studies to support his

7   conjecture. If the book value capital structures are not representative

8   of the target market value capital structure of GTE Florida's network

9   element leasing business, they should not be used in cost studies that

10   estimate the forward-looking cost of unbundled network elements.

11

12 Q. **WHAT IS THE IMPACT OF MR. HIRSHLEIFER'S USE OF BOOK**

13   **VALUE CAPITAL STRUCTURE WEIGHTS ON HIS COST OF**

14   **CAPITAL RECOMMENDATION?**

15 A. Mr. Hirshleifer obtained a 9.09 percent estimate of GTE Florida's

16   weighted average cost of capital using market value capital structure

17   weights and an 8.24 percent estimate of GTE Florida's cost of capital

18   using book value capital structure weights. Mr. Hirshleifer's final

19   recommended 8.66 percent cost of capital gives equal weight to book

20   and market value capital structures. Thus, Mr. Hirshleifer's use of

21   book value capital structure weights by itself reduced his estimate of

22   GTE Florida's overall cost of capital by 42 basis points.

23

24   **CONCLUSION**

25 Q. **WHAT ARE YOUR CONCLUSIONS REGARDING THE**

1   **APPROPRIATE COST OF CAPITAL TO BE USED FOR GTE**

2   **FLORIDA IN THIS PROCEEDING?**

3   A.   I believe the appropriate cost of capital to be used for GTE Florida in

4   this proceeding is 12.74%, reflecting a 7.03% cost of debt and a

5   14.36% cost of equity, and based on a capital structure containing

6   22.17% debt and 77.83% equity.

7

8   Q.   **WHAT ARE YOUR OVERALL CONCLUSIONS CONCERNING MR.**

9   **HIRSHLEIFER'S WEIGHTED AVERAGE COST OF CAPITAL**

10   **RECOMMENDATIONS IN THIS PROCEEDING?**

11 A   Mr. Hirshleifer's selection of THCs as comparable proxies for GTE

12   Florida combined with the arbitrary assumptions and application of the

13   DCF model and CAPM have systematically resulted in a selective

14   downward bias of his cost of capital estimates for GTE Florida. Since

15   there is no basis of support for these assumptions, the Commission

16   should not accept Mr. Hirshleifer's recommendations in this

17   proceeding.

18

19 Q.   **DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

20 A.   Yes.

21

22

23

24

25

IMPACT OF MERGERS
ON EXPECTED EARNINGS GROWTH RATE

Merged Companies	Date Merger Announced	Closed	IBES Mean Forecast Growth Rate				
			1 Month Before Announced Date	1 Month Before Closed Date	1 Month After Closed Date	(1) Increase	Current
SBC	4/1/96	4/1/97	9.50%	9.95%	10.31%	2.42%	12.37%
Pacific Telesis			3.54%	4.82%			
Market Value Weighted Average			7.89%	8.21%			
Bell Atlantic	4/22/96	8/14/97	7.66%	8.06%	8.15%	0.95%	11.16%
NYNEX			6.62%	6.82%			
Market Value Weighted Average			7.20%	7.52%			
SBC	1/5/98	10/26/98	9.75%	10.50%	10.68%	1.07%	12.37%
SNET			6.50%	7.50%			
Market Value Weighted Average			9.61%	10.32%			
SBC	5/11/98	10/8/99	11.05%	11.96%	12.13%	2.14%	12.37%
Ameritech			8.39%	8.95%			
Market Value Weighted Average			9.99%	10.69%			
Average - All Mergers						1.65%	

(1) IBES Mean Forecast Growth Rate 1 month after close less 1 month prior to announcement.

TELEPHONE HOLDING COMPANIES
LONG-RUN EARNING GROWTH RATES

Company	Long-run Internal Growth Estimate
Bell Atlantic	16.00%
BellSouth	20.00%
SBC	14.50%
U.S. West	27.00%
ALLTEL	14.00%
CenturyTel	14.00%
GTE	15.50%
Market Weighted Average	16.60%

Source: Value Line Investment Survey, April 7, 2000.

TELECOMMUNICATIONS HOLDING COMPANIES
QUARTERLY DISCOUNTED CASH FLOW MODEL

Ticker	Comparable Firm	Average Stock Price Apr 1999	Current Quarterly Dividend	Mean IBES Annual Long-Term Growth Forecasts	Cost of Equity	Market Weight	Weighted Cost of Equity
BEL	BELL ATLANTIC CORP	$55.375	$0.385	9.413%	12.65%	18.2433%	2.31%
BLS	BELLSOUTH CORP	$42.594	$0.180	9.606%	11.57%	18.6954%	2.16%
SBC	SBC COMMUNICATIONS INC	$52.500	$0.231	11.571%	13.65%	35.7431%	4.88%
USW	US WEST INC	$54.406	$0.535	6.018%	10.48%	6.8646%	0.72%
AT	ALLTEL CORP	$67.406	$0.294	12.880%	14.97%	3.1806%	0.48%
CTL	CENTURYTEL	$39.562	$0.043	13.610%	14.13%	1.0325%	0.15%
GTE	GTE CORP	$64.125	$0.470	9.723%	13.15%	16.2405%	2.14%
	Average			10.40%	12.94%	100.0000%	12.84%

Note: Flotation cost factor is assumed to be 5%. Average stock price is average of high and low closing prices for April 1999.

Source: Bloomberg database, May 28, 1999.

TELECOMMUNICATIONS HOLDING COMPANIES
CAPITAL ASSET PRICING MODEL

Ticker	Comparable Firm	(1) Beta	(2) Risk Free Rate of Return	(3) Risk Premium	Cost of Equity	Market Weight	Weighted Cost of Equity
BEL	BELL ATLANTIC CORP	0.90	6.47%	7.47%	13.19%	18.2433%	2.41%
BLS	BELLSOUTH CORP	0.85	6.47%	7.47%	12.82%	18.6954%	2.40%
SBC	SBC COMMUNICATIONS INC	0.85	6.47%	7.47%	12.82%	35.7431%	4.58%
USW	US WEST INC	0.75	6.47%	7.47%	12.07%	6.8646%	0.83%
AT	ALLTEL CORP	0.65	6.47%	7.47%	11.33%	3.1806%	0.36%
CTL	CENTURYTEL	0.82	6.47%	7.47%	12.60%	1.0325%	0.13%
GTE	GTE CORP	0.90	6.47%	7.47%	13.19%	16.2405%	2.14%
	Average	0.82			12.57%	100.0000%	12.85%

(1) Source: Value Line Investment Survey, October 8, 1999.

(2) Source: Exhibit JH-7, long-term Treasury Bond Yield for September 1999.

(3) Source: Risk free rate plus risk premium from the Ibbotson SBBI database May 28, 1999 for the period 1926 to 1998.

CAPITAL STRUCTURE COMPARISON
TELECOMMUNICATIONS HOLDING COMPANIES
DECEMBER 31, 1994 - DECEMBER 31, 1998

(Millions of Dollars)

Ticker	Comparable Firm	Average Debt	Average Common Equity Market Value	Debt Ratio	Equity Ratio
Local Exchange Holding Companies:					
BEL	BELL ATLANTIC CORP	$15,128.580	$51,396.685	22.74%	77.26%
BLS	BELLSOUTH CORP	$10,758.360	$52,670.380	16.96%	83.04%
SBC	SBC COMMUNICATIONS INC	$19,858.039	$100,698.474	16.47%	83.53%
USW	US WEST INC	$7,002.000	$19,339.464	26.58%	73.42%
AT	ALLTEL CORP	$2,557.010	$8,960.661	22.20%	77.80%
CTL	CENTURYTEL	$1,452.676	$2,908.917	33.31%	66.69%
GTE	GTE CORP	$16,454.000	$45,754.227	26.45%	73.55%
	Total Telecommunictions Holding Companies	$73,210.665	$281,728.808	20.63%	79.37%
Interexchange Carriers:					
T	A T & T CORP	$14,948.600	$86,688.003	14.71%	85.29%
FRO	FRONTIER CORP	$853.410	$4,288.782	16.60%	83.40%
FON	SPRINT CORP (FON GROUP)	$4,498.180	$18,310.877	19.72%	80.28%
WCOM	MCI WORLDCOM INC	$7,278.148	$38,505.153	15.90%	84.10%
	Total Interexchange Carriers	$27,578.338	$147,792.815	15.73%	84.27%

Source: Bloomberg database, May 28, 1999.

TELECOMMUNICATIONS HOLDING COMPANIES
IMPACT OF EXTRAORDINARY WRITE-OFFS ON BOOK EQUITY
(Millions of Dollars)

Company	1993-1995 Write-offs	1995 Book Equity	Percent of Equity
BELL ATLANTIC CORP	5,069.4	12,762.8	39.7%
BELLSOUTH CORP	2,718.0	11,825.0	23.0%
SBC COMMUNICATIONS INC	13,215.8	15,813.2	83.6%
US WEST INC	3,123.0	7,948.0	39.3%
GTE CORP	4,682.0	6,871.0	68.1%
Total	28,808.2	55,220.0	52.2%

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

Source: Data is taken from Company Annual Reports.