Exhibit No. ___ (JHV-5T)
Docket No. UT-023003

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

In the Matter of the Review of Unbundled Loop and Switching Rates; the Deaveraged Zone Rate Structure; and Unbundled Network Elements, Transport, and Termination	))))))	DOCKET NO. UT-023003

REBUTTAL TESTIMONY OF DR. JAMES H. VANDER WEIDE ON BEHALF OF VERIZON NORTHWEST INC.

COST OF CAPITAL

PUBLIC VERSION

MAY 12, 2004

Exhibit No. ___ (JHV-5T)
Docket No. UT-023003

VERIZON WASHINGTON STATE INC.
REBUTTAL TESTIMONY OF DR. JAMES H. VANDER WEIDE
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Q. WHAT IS YOUR NAME AND BUSINESS ADDRESS?

A. My name is James H. Vander Weide. I am Research Professor of Finance and Economics at the Fuqua School of Business of Duke University. I am also President of Financial Strategy Associates, a firm that provides strategic and financial consulting services to business clients. My business address is 3606 Stoneybrook Drive, Durham, North Carolina.

Q. ARE YOU THE SAME JAMES H. VANDER WEIDE THAT PREVIOUSLY PROVIDED DIRECT AND REPLY TESTIMONIES IN THIS PROCEEDING?

A. Yes, I am.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. I have been asked by Verizon Northwest Inc. ("Verizon NW") to review the direct testimony of Dr. Lee L. Selwyn on behalf of AT&T Communications of the Northwest and the response testimony of Mr. Thomas L. Spinks on behalf of the Staff of the Washington Utilities and Transportation Commission ("Commission"), and to respond to their recommendations regarding the appropriate costs of capital for use in UNE cost studies in this proceeding.

Q. WHAT IS DR. SELWYN'S RECOMMENDED UNE COST OF CAPITAL IN THIS PROCEEDING?

A. Dr. Selwyn recommends a UNE cost of capital of 7.45%, based on a 4.98% cost of debt, an 8.51% cost of equity, and a capital structure containing 30% debt and 70% equity.

Q. WHAT UNE COST OF CAPITAL DOES MR. SPINKS RECOMMEND IN THIS PROCEEDING?

A. Mr. Spinks's recommendation regarding Verizon NW's UNE cost of capital is not entirely clear. In his Revised Supplemental Direct Testimony filed on April 20, 2004, Mr. Spinks recommends that Verizon NW's 9.76% authorized rate of return be used in UNE cost studies in this proceeding. However, in his Response Testimony, also filed on April 20, 2004, Mr. Spinks recognizes that Verizon NW's 9.76% authorized rate of return is inconsistent with the FCC's clarification in the *Triennial Review Order* that the cost of capital in UNE cost studies must reflect the risks of a competitive market.[1] He then suggests that an upper bound for the UNE cost of capital

> can be estimated by substituting Dr. Vander Weide's costs of debt and equity into Verizon's currently authorized capital structure. The result of that exercise would increase the weighted cost of capital from 9.76% to 10.54%. (Spinks Response Testimony at 14.)

It would appear that Mr. Spinks now recommends a cost of capital for use in this proceeding that exceeds 9.76% by a significant margin.

[1] Report and Order on Remand, *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, 18 FCC Rcd 16978 (2003).

I. SUMMARY

Q. WHAT ARE YOUR MAJOR CRITICISMS OF DR. SELWYN'S TESTIMONY?

A. My major criticisms of Dr. Selwyn's testimony can be summarized as follows:

A. ECONOMIC PRINCIPLES

Dr. Selwyn's low 7.45% cost of capital recommendation is heavily influenced by his faulty assumption that Verizon NW is a low-risk monopoly provider of local exchange service. Dr. Selwyn's fundamental monopoly assumption is inconsistent with the FCC's clarification in the *Triennial Review Order* that a UNE cost of capital must:

(1) reflect the competitive risks of operating in telecommunications markets with full facilities-based competition;

(2) reflect the investment and regulatory risks of operating under the network assumptions that are used to estimate the other components of UNE rates;

(3) provide incentives for Verizon NW and the CLECs to invest in network facilities; and

(4) provide Verizon NW a reasonable opportunity to recover its forward-looking economic cost of providing service, including its cost of capital.

As the FCC correctly recognized in the *Triennial Review Order*, AT&T's monopoly approach to the cost of capital input in UNE cost studies is not only inconsistent with the competitive market assumptions used to estimate the operating expense and investment components of UNE cost studies, but would also fail to provide incentives for either Verizon NW or the CLECs to invest in network facilities.

B. RISK

Dr. Selwyn's faulty low-risk monopoly assumption is not only contrary to the FCC's clarification in the *Triennial Review Order*, but also contrary to the evidence that: (1) Verizon NW already faces significant facilities-based competition which is likely to increase rapidly in the future; and (2) Verizon NW has no opportunity to recover its investment and expenses under the TELRIC standard as currently applied by the Commission and recommended by Dr. Selwyn's client, AT&T (see Vander Weide Direct Testimony at pp. 31 – 38).

C. DR. SELWYN'S STATISTICAL STUDY OF THE EFFECT OF COMPETITION ON RISK

Dr. Selwyn attempts to support his low cost of capital recommendation with a statistical study that purports to demonstrate that the increase in the Regional Bell Holding Companies' (RBHCs') betas in recent years has been caused by an increase in their average investment in non-ILEC assets, not by an increase in competition. However, Dr. Selwyn's conclusion arises solely from fundamental data and statistical errors in his analysis. Specifically, Dr. Selwyn bases his study on incorrect data observations for "Qwest" in the second half of 2000. Once the incorrect data observations are removed from Dr. Selwyn's study, the study indicates the opposite conclusion: *competition is the most significant variable explaining the rise in the RBHCs' betas*.

D. PROXY COMPANIES

Dr. Selwyn estimates Verizon NW's UNE cost of capital from a small sample of four telecommunications holding companies, BellSouth, Qwest, SBC, and Verizon. These companies are unreasonable proxies for the purpose of estimating Verizon NW's UNE cost of capital because one company, Qwest, is in extreme financial stress as a result of ill-advised investments in a nationwide broadband network, and the remaining companies face less technology, geographic, and regulatory risk than Verizon NW's UNE business. Furthermore, a sample of only three companies is simply too small for the purpose of estimating the cost of equity. Dr. Selwyn could have avoided the deficiencies associated with his small proxy group by recognizing that companies do not have to be in the same line of business in order to be reasonable proxies. Indeed, Dr. Selwyn uses the Capital Asset Pricing Model ("CAPM") to estimate the cost of equity, but the CAPM assumes that comparability in risk results not from being in the same line of business or industry, but from similar volatility in stock prices. Thus, according to the CAPM, all companies with the same beta are considered to be of comparable risk, regardless of their line of business. Rather than using a small sample of non-comparable telecommunications holding companies, Dr. Selwyn should have relied on a broad group of competitive firms such as the S&P Industrials.

E. COST OF DEBT

Dr. Selwyn estimates the cost of debt component of the UNE cost of capital by calculating the average yield to maturity on Verizon Communications' outstanding debt. Dr. Selwyn fails to recognize that it is highly unlikely that Verizon NW would finance a forward-looking investment in the network envisioned in UNE cost studies with the short-term maturities associated with the bonds shown on his Attachment 2. Because the investment in network facilities modeled in UNE cost studies is long-term, a company such as Verizon NW would normally finance these investments with long-term debt. In contrast, much of the "long-term debt" on Verizon's balance sheet is near to maturity and is therefore trading as short-term debt. Since Verizon would not finance the construction of a new telecommunications network with short-term debt, the inclusion of long-term debt that is now priced as short-term debt in Dr. Selwyn's yield to maturity calculation biases his estimate of debt cost downward. Dr. Selwyn should have estimated the cost of long-term debt by reviewing current interest rates on the bonds Verizon NW would actually use to finance the construction of the long-term assets of the telecommunications network modeled in UNE cost studies. A conservative estimate of the interest rate Verizon NW would have to pay on the bonds it would actually use to finance the construction of a telecommunications network is approximately 6.25%, not the low 4.98% recommended by Dr. Selwyn.

F. COST OF EQUITY

Dr. Selwyn estimates the cost of equity by applying the CAPM to a hypothetical, low-risk, stand-alone monopoly provider of local exchange services. Dr. Selwyn's results are compromised by the incorrect procedures he used to estimate the required inputs to the CAPM as applied to his monopoly company.

His results are also compromised by fundamental problems with the CAPM itself. In every case, Dr. Selwyn's choices cause him to significantly underestimate Verizon NW's cost of equity. These issues notwithstanding, had Dr. Selwyn correctly applied the CAPM to his proxy companies, he would have obtained an average cost of equity that is approximately equal to my 13.95% cost of equity estimate.

G. CAPITAL STRUCTURE

Mr. Spinks recommends that Verizon NW's regulatory book value capital structure be used to estimate Verizon NW's weighted average cost of capital for use in UNE cost studies. The use of book value capital structure weights is inconsistent with: (1) the principle that the cost of providing unbundled network elements should be measured on the basis of forward-looking economic costs, not accounting costs, (2) the economic and financial theory of corporate valuation; and (3) the guidance in the *Triennial Review Order* that the cost of capital must reflect the risks of a competitive market. Economic and financial theory requires the sole use of market value capital structure weights to calculate a company's weighted average cost of capital, and competitive companies use market value capital structures to estimate the weighted average cost of capital for use in making investment decisions. Because book value equity weights are significantly lower than market value equity weights, the use of book value equity weights, by itself, causes Mr. Spinks to significantly underestimate Verizon NW's weighted average cost of capital.

Dr. Selwyn recommends that the average market value capital structure of his proxy companies at September 30, 2003, be used to estimate Verizon NW's weighted average cost of capital for use in UNE cost studies. But Dr. Selwyn's recommended weighted average cost of capital is biased downward by his inclusion of the highly-leveraged and unusual capital structure of Qwest. Dr. Selwyn's inclusion of Qwest's highly-leveraged capital structure is particularly problematic because he combines their high leverage with low costs of debt and equity that fail to reflect the risks of Qwest's high leverage and financially-stressed status. If Dr. Selwyn had correctly measured the percentages of debt and equity in the RBHCs' capital structures at year-end 2003, he would have found that their average capital structure contains just 23% debt and 77% equity.

H. RISK PREMIUM

In my direct testimony, I recommend that a risk premium be added to the market cost of capital to compensate Verizon NW for the high risk that it will have no opportunity to actually earn whatever cost of capital is allowed in this proceeding under the forward-looking TELRIC regulatory standard. Mr. Spinks argues that my regulatory risk premium should be rejected because my risk premium is due in part to the CLECs' option to cancel their lease of network facilities, and, he argues, Verizon NW does not offer UNEs on a lease basis (Spinks Response Testimony at 12). Dr. Selwyn recommends that my risk premium be rejected because he contends that the risks of the TELRIC standard are already included in his estimate of the cost of capital.

Both arguments are incorrect. Verizon NW does offer UNES on a lease basis to CLECs. Verizon NW's contract with CLECs has all the characteristics of an operating lease because it allows CLECs to cancel their use of UNEs at any time. Furthermore, the CAPM used by Dr. Selwyn is inherently incapable of capturing the regulatory risks of the TELRIC standard. For example, the cost of capital estimated from the DCF or CAPM measures investors' ***expected*** rate of return on investment, while the essence of regulatory risk under the TELRIC standard is that investors will not be able to earn their expected rate of return on investment. To give investors an opportunity to actually earn their expected rate of return on investment (or, alternatively, to compensate them for the risk that they will not earn that rate of return), the Commission must add a risk premium to the estimated cost of capital. In addition, the DCF and CAPM models are incapable of considering lease cancellation risk because lease cancellation risk results from the CLECs' option to cancel their lease on short notice, and options such as this are definitely not reflected in the DCF and CAPM models.

I. PROCEEDINGS IN OTHER STATES

Dr. Selwyn cites a recent rate order in New Hampshire and the Wireline Competition Bureau's decision in the Virginia arbitration proceeding in support of his low cost of capital recommendation. However, Dr. Selwyn fails to recognize that the New Hampshire decision on cost of capital is not applicable to this proceeding because the New Hampshire Public Utilities Commission explicitly stated that the wholesale cost of capital must be equal to the retail cost of capital. Thus, the New Hampshire commission failed to make any distinction between the cost of capital appropriate for setting retail rates under traditional rate of return regulation and the forward-looking competitive market cost of capital that is required for setting UNE rates according to the *Triennial Review Order*. With respect to the Virginia arbitration proceeding, Dr. Selwyn fails to note that the Wireline Competition Bureau accepted Verizon's recommended 12.95% cost of capital in the context of the *Triennial Review Order*, and rejected AT&T's 9.54% cost of capital. In addition, Dr. Selwyn fails to acknowledge a recent order in Pennsylvania that raised Verizon's UNE cost of capital in light of the *Triennial Review Order* from 9.83% to 12.37%. The Pennsylvania commission concluded that the appropriate cost of equity is 14.75% based on a single-stage DCF analysis applied to the S&P Industrials.[2]

J. TESTS OF REASONABLENESS

Perhaps the best proof of the unreasonableness of Dr. Selwyn's low 7.45% estimate of Verizon NW's UNE cost of capital is to compare his recommendation to the weighted average cost of capital his client, AT&T, itself uses in its own internal decisions to invest in its local exchange network. AT&T indicates that as of October 28, 2003, it uses an after-tax weighted average cost of capital of **[BEGIN AT&T PROPRIETARY]** **[END AT&T PROPRIETARY]** to make internal decisions regarding local exchange investments. For use in UNE cost models, the cost of capital is expressed on a before-tax basis. The before-tax equivalent of AT&T's **[BEGIN AT&T**

[2] Final Opinion and Order, *Generic Investigation Re Verizon Pennsylvania Inc.'s Unbundled Network Element Rates*, Dkt. R-00016683 (P.A. PUC Dec. 11, 2003).

PROPRIETARY] **[END AT&T PROPRIETARY]** weighted average cost of capital is **[BEGIN AT&T PROPRIETARY]** **[END AT&T PROPRIETARY].** Since Dr. Selwyn's 7.45% estimate of Verizon NW's forward-looking cost of capital is **[BEGIN AT&T PROPRIETARY]** **[END AT&T PROPRIETARY]** basis points less than AT&T's internal cost of capital, there can be little doubt that Dr. Selwyn has understated Verizon NW's UNE cost of capital. This comparison is an especially important test of reasonableness because AT&T has a strong economic incentive to employ an accurate estimate of the cost of capital when it evaluates its own internal investment decisions.

Further proof of the unreasonableness of Dr. Selwyn's 7.45% recommended cost of capital the FCC's Wireline Competition Bureau's decision in the Virginia arbitration proceeding. The Bureau found Verizon Virginia's UNE cost of capital should be 13.068% at a time when the yield on 20-year Treasury bonds was 6.26%. Since then, the yield to maturity on 20-year Treasury bonds has declined to 5.3%, suggesting that the cost of capital in this proceeding, prior to the addition of a risk premium for regulatory risk, should be approximately equal to the 12.03% cost of capital I estimated for the S&P Industrials. (The Wireline Competition Bureau did not consider my recommended risk premium in the Virginia proceeding because they determined that the record had closed before the risk premium was presented.) Instead, Dr. Selwyn recommends a cost of capital of 7.45% that is *562 basis points less than the cost of capital ordered in the Virginia proceeding* (13.068% minus 7.45% equals 562 basis points). The cost of capital could not possibly have declined by 562 basis points over the same period that interest rates on 20-year Treasury bonds have declined by only 100 basis points. Furthermore, AT&T's internal cost of capital *has increased from 15.31% at the time of the Virginia order to* **BEGIN AT&T PROPRIETARY END AT&T PROPRIETARY.** It is certainly inconsistent, and even disingenuous, for AT&T to recommend a 562 basis point decline in Verizon's UNE cost of capital when they themselves have increased their required return for local network investment decisions by nearly 250 basis points.

II. ECONOMIC PRINCIPLES

Q. WHAT IS THE PURPOSE OF THIS PROCEEDING?

A. The Commission has opened this proceeding to review Verizon NW's recurring costs and rates for leasing unbundled network elements to CLECs.

Q. WHAT ARE THE BASIC COMPONENTS OF VERIZON NW'S RECURRING UNE COSTS?

A. The forward-looking economic cost of providing UNEs includes both capital costs and expenses. The capital costs, in turn, include three elements: Verizon NW's investment in the telecommunications facilities required to provide UNEs; the economic depreciation on these facilities; and the required rate of return, or cost of capital, associated with these facilities.

Q. HAS THE FCC DETERMINED THE ECONOMIC PRINCIPLES THAT SHOULD BE USED TO SET UNE RATES?

A. Yes. The FCC determined the basic economic principles for setting rates for unbundled network elements ("UNEs") in the *Local Competition Order*.[3] In that order, the Commission decided that UNE rates should: (1) be based on forward-looking economic costs, not embedded or accounting costs ("forward-looking economic cost principle"); (2) approximate the rates the incumbent LECs would be able to charge in a competitive market for unbundled network elements ("competitive market principle"); (3) send correct economic signals for efficient market entry and investment decisions ("correct economic signal principle"); and (4) provide the ILECs an opportunity to recover their forward-looking economic costs of providing UNEs, including the cost of capital ("fair rate of return principle").

Q. DID THE FCC PROVIDE ANY FURTHER GUIDANCE REGARDING THE COST OF CAPITAL INPUT IN UNE COST STUDIES IN ITS *TRIENNIAL REVIEW ORDER*?

A. Yes. In its *Triennial Review Order*, the FCC determined that the cost of capital input should reflect the risks of a market with full facilities-based competition. For example, in ¶ 680, the Commission stated:

> First, we clarify that a TELRIC-based cost of capital should reflect the risks of a competitive market. The objective of TELRIC is to establish a price that replicates the price that would exist in a market in which there is facilities-based competition. In this type of competitive market, all facilities-based carriers would face the risk of losing customers to other facilities-based carriers, and that risk should be reflected in TELRIC prices.

[3] First Report and Order, *Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, 11 FCC Rcd 15499 (1996) ("Local Competition Order").

Q. DID THE FCC EXPLAIN WHY A TELRIC-BASED COST OF CAPITAL INPUT MUST REFLECT THE RISKS OF A COMPETITIVE MARKET?

A. Yes. In ¶ 682, the FCC explained that the monopoly-based cost of capital approach recommended by AT&T and WorldCom fails to provide incentives for investment:

> The approach advocated by AT&T and WorldCom does not provide optimal incentives for investment. To calculate rates based on an assumption of a forward-looking network that uses the most efficient technology (*i.e.*, the network that would be deployed in a competitive market), without also compensating for the risks associated with investment in such a network, would reduce artificially the value of the incumbent LEC network and send improper pricing signals to competitors. Establishing UNE prices based on an unreasonably low cost of capital would discourage competitive LECs from investing in their own facilities and thus slow the development of facilities-based competition.

Q. IS VERIZON NW REQUIRED TO PROVE THAT IT FACES SUBSTANTIAL COMPETITION FOR BASIC TELECOMMUNICATIONS SERVICES BEFORE THE COMMISSION CAN USE A COST OF CAPITAL INPUT IN UNE COST STUDIES THAT REFLECTS COMPETITIVE MARKET RISK?

A. No. The FCC's clarification in the *Triennial Review Order* does not depend on the degree of competition Verizon NW actually faces in Washington State. Rather, the FCC clarified that the cost of capital must be estimated *under the assumption of full facilities-based competition* in order to make the inputs in UNE cost studies consistent with one another. Since the investment and expense components of UNE costs are estimated *under the assumption* that Verizon NW faces full facilities-based competition, the cost of capital and depreciation components of UNE costs must also be estimated under this assumption. The

FCC reiterated the principle that the cost of capital must be consistent with the assumptions of the TELRIC standard in its TELRIC Notice of Proposed Rulemaking:

> [T]he importance of this clarification [in the *Triennial Review Order*] was to confirm that state commissions must use a consistent set of assumptions when they calculate the three components of rates (operating expenses, cost of capital, and depreciation expense). That is, *if the network assumptions are based on projections about what a network would look like in the long-run assuming facilities-based competition, the same approach should be followed in developing the cost of capital.*[4]

Thus, the *Triennial Review Order requires* that the cost of capital input in UNE cost studies be based on the *assumption* that Verizon NW operates in fully competitive markets, regardless of the actual level of existing competition.

Q. IS VERIZON NW'S 9.76% AUTHORIZED RATE OF RETURN CONSISTENT WITH THE FCC'S CLARIFICATION IN THE *TRIENNIAL REVIEW ORDER* THAT THE COST OF CAPITAL MUST REFLECT THE RISKS OF COMPETITIVE MARKETS?

A. No. Verizon NW's authorized rate of return was established in 1994 in a proceeding that was initiated to establish Verizon NW's allowed rate of return for retail services. The 1994 proceeding occurred prior to the passage of the Telecommunications Act of 1996, the passage of the FCC's *Local Competition Order*, the issuance of the *Triennial Review Order*, and the advent of extensive facilities-based competition from CLECs, wireless providers, cable TV, Internet

[4] Notice of Proposed Rulemaking *In the Matter of Review of the Commission's Rules Regarding the Pricing of Unbundled Network Elements and the Resale of Service by Incumbent Local Exchange Carriers FCC 03-224*, 18 FCC Rcd 18945 ¶ 84 (2003) ("TELRIC NPRM").

service providers, and VoIP. The authorized rate of return for retail services therefore certainly does not reflect the risks of a market with full facilities-based competition.

Q. WHAT CAN THE COMMISSION DO IN THIS PROCEEDING TO SELECT A COST OF CAPITAL COMPONENT OF UNE RATES THAT COMPLIES WITH THE FCC'S ECONOMIC PRINCIPLES OF UNE RATEMAKING?

A. As explained in the FCC's *Triennial Review Order* and *TELRIC NPRM*, the Commission must choose a cost of capital input that: (1) reflects the competitive risks of operating in telecommunications markets with full facilities-based competition; (2) reflects the investment and regulatory risks of operating under the network assumptions that are used to estimate the other components of UNE rates; (3) provides incentives for Verizon NW and the CLECs to invest in network facilities; and (4) provides Verizon NW a reasonable opportunity to recover its forward-looking economic cost of providing service, including its cost of capital.

Q. IS DR. SELWYN'S 7.45% COST OF CAPITAL RECOMMENDATION IN THIS PROCEEDING CONSISTENT WITH THE FCC'S CLARIFICATION IN THE *TRIENNIAL REVIEW ORDER* THAT THE COST OF CAPITAL MUST REFLECT THE RISKS OF OPERATING IN A COMPETITIVE MARKET?

A. No. Contrary to the *Triennial Review Order*, Dr. Selwyn continues to base his cost of capital estimate and recommendation on the assumption that Verizon NW is a low-risk monopolist.

Q. IS YOUR COST OF CAPITAL RECOMMENDATION IN THIS PROCEEDING CONSISTENT WITH THE FCC'S CLARIFICATION IN THE *TRIENNIAL REVIEW ORDER*?

A. Yes. My cost of capital recommendation reflects the risks Verizon NW faces when it invests in the facilities required to provide UNEs under the TELRIC standard. In particular, I estimated the cost of capital under the assumption that Verizon NW provides UNEs in a competitive market, and that the FCC's TELRIC standard is used to set UNE rates.

Q. YOU MENTIONED EARLIER THAT THE FCC'S ECONOMIC PRINCIPLES FOR UNE RATEMAKING REQUIRE THAT THE COMMISSION USE A CONSISTENT SET OF ASSUMPTIONS TO ESTIMATE THE FOUR COMPONENTS OF UNE COSTS, OPERATING EXPENSES, INVESTMENT, COST OF CAPITAL, AND DEPRECIATION. WHAT ASSUMPTIONS DOES AT&T USE TO ESTIMATE THE OPERATING EXPENSE AND INVESTMENT COMPONENTS OF UNE RATES IN THIS PROCEEDING?

A. As discussed in the testimony of Dr. Tardiff, the operating expense and investment components of AT&T's UNE cost studies are based on the assumptions that:

(1) Verizon NW operates in a highly competitive market where UNE rates will reflect the cost of reconstructing Verizon NW's network using the most efficient available technology to satisfy the entire demand for telecommunications service;

(2) the reconstructed network will be perfectly sized to satisfy a known demand at current customer locations;

(3) the company receives large supplier discounts on equipment purchases because of the volumes associated with building its entire network from scratch;

(4) the company achieves significant savings from sharing facilities with electric companies, cable companies, and other competitors because these companies are assumed to reconstruct their networks at the same time as Verizon NW; and

(5) Verizon NW depreciates its network over a long time frame, even though it knows that rates will be reset on the basis of another reconstructed network before the current assets are fully depreciated.

Q. DOES DR. SELWYN'S 7.45% RECOMMENDED COST OF CAPITAL REFLECT THE RISKS VERIZON NW WOULD FACE IF IT OPERATED UNDER AT&T'S INSTANTANEOUS REPLACEMENT ASSUMPTIONS?

A. No. Dr. Selwyn's 7.45% cost of capital recommendation is based on his assumption that Verizon NW is a monopoly provider of UNEs and faces no risk that it will fail to earn its cost of capital. In contrast, AT&T's estimates of Verizon NW's operating expenses and investment are based on its assumption that Verizon NW operates in a highly competitive marketplace, and that it will instantaneously replace its network whenever UNE rates are reset. As I explain in my direct testimony, Verizon NW would face enormous risks under AT&T's assumption of instantaneous replacement of its network. For example, Verizon

NW would face the significant risk that it would be unable to recover its forward-looking investment and expenses, including its cost of capital. The low-risk, monopoly assumption Dr. Selwyn uses to estimate Verizon NW's cost of capital is clearly inconsistent with the highly-competitive market assumptions AT&T uses to estimate the operating expense and investment components of its UNE cost study. Such inconsistency flatly contradicts the FCC's requirement that state commissions must use consistent assumptions to estimate the investment, expense, cost of capital, and depreciation elements of UNE cost studies.

Q. YOU ALSO MENTIONED THAT THE FCC'S ECONOMIC PRINCIPLES FOR UNE RATEMAKING REQUIRE THAT UNE RATES PROVIDE ADEQUATE INCENTIVES FOR VERIZON NW AND CLECS TO INVEST IN NETWORK FACILITIES. DOES DR. SELWYN'S 7.45% RECOMMENDED COST OF CAPITAL PROVIDE INCENTIVES FOR VERIZON NW AND CLECS TO INVEST IN NETWORK FACILITIES?

A. No. Since Dr. Selwyn's recommended cost of capital fails to reflect the competitive and regulatory risks Verizon NW faces in making network investment decisions under the TELRIC standard, it would provide no incentive for Verizon NW to invest in network facilities. With respect to CLECs, Dr. Selwyn's recommended 7.45% cost of capital is nearly 1,100 basis points lower than the cost of capital AT&T itself uses to make network investment decisions. AT&T certainly would have no incentive to invest in network facilities if it can obtain UNEs from Verizon NW at rates that reflect a cost of capital of 7.45%, when its own cost of capital is nearly three times higher than 7.45%.

III. RISK

Q. WHY IS RISK AN IMPORTANT ISSUE IN THIS PROCEEDING?

A. Risk is an important issue because the cost of capital depends on investment risk. The higher the risk of investing in the facilities required to provide UNEs under the TELRIC standard, the higher the cost of capital in UNE cost studies should be.

Q. HOW IS RISK DEFINED?

A. Risk is defined as an exposure to an economic loss. For investment decisions, economic loss occurs when the company's expected rate of return on investment is less than the company's risk-adjusted cost of capital. Alternatively, economic loss occurs when the present value (PV) of future economic profits (revenues minus operating expenses minus economic depreciation) is less than the present value of the investments required to achieve the profits:

PV (revenues – operating expenses – economic depreciation) < PV (investments),

where the present values are calculated using the risk-adjusted cost of capital as a discount rate and management's best estimates of future economic profits and investments.

A. DR. SELWYN FAILS TO RECOGNIZE THAT VERIZON NW FACES SIGNIFICANT COMPETITIVE RISKS IN ITS SERVICE TERRITORY IN WASHINGTON STATE

Q. HAS VERIZON NW PROVIDED EVIDENCE THAT IT FACES THE RISK OF ECONOMIC LOSS AS A RESULT OF COMPETITION IN ITS SERVICE TERRITORY?

A. Yes. Verizon NW provided evidence in the testimony of Mr. West that it faces exposure to significant economic loss as a result of competition from CLECs, wireless providers, cable TV, Internet service providers, and providers of VoIP.

Q. WHAT IS DR. SELWYN'S OPINION REGARDING THE RISK VERIZON NW FACES WHEN IT OFFERS UNES TO COMPETITORS?

A. Dr. Selwyn believes that Verizon NW is a low-risk monopoly provider of UNE services. For example, on page 8 of his testimony, he states:

> UNEs are, by their nature, *monopoly* services being offered on a noncompetitive basis by Verizon Northwest and by other incumbent local exchange carriers to competing non-dominant providers of local exchange services ("CLECs"). While the overall risk associated with investment in RBOCs such as Verizon has been increasing in recent years, the drivers of such elevated risk are primarily, if not exclusively, the RBOCs' pursuit of *nonregulated and competitive lines of business*, such as wireless, broadband, internet access, and long distance services, *and not their core ILEC businesses*, such as the basic monopoly "Plain Old Telephone Services" ("POTS") and associated UNEs being furnished by Verizon Northwest. (emphasis in original)

Q. DOES DR. SELWYN PROVIDE ANY EVIDENCE TO SUPPORT HIS ASSERTION THAT UNES ARE OFFERED ON A NON-COMPETITIVE BASIS?

A. No. Dr. Selwyn makes no attempt to support his assertion with real world data on competitive alternatives. Indeed, Dr. Selwyn's assertion is in stark contrast to the strong evidence that competition for basic telecommunications services is widespread.

Q. DOES THE FINANCIAL COMMUNITY AGREE WITH DR. SELWYN'S OPINION THAT VERIZON NW IS A LOW-RISK MONOPOLY PROVIDER OF TELECOMMUNICATIONS SERVICES?

A. No. The financial community has recognized that local exchange carriers such as Verizon NW face extensive competition for telecommunications services. For example, Value Line states in its most recent report on Verizon NW's parent:

> **Verizon should have a challenging year in 2004**. Indeed, the company's performance throughout last year was tempered by a decrease in demand for both its traditional voice and business market, the result of what was a relatively slow rebound in the United States economy, and technological substitution and competition throughout the industry as a whole. What's more, late last year, management warned that Verizon's 2004 performance would likely come under additional pressure due to ongoing difficult market conditions and recently introduced regulatory constraints. (The Value Line Investment Survey, April 2, 2004.)

Q. HAS THE RISK OF ECONOMIC LOSS FROM LOCAL EXCHANGE COMPETITION ALSO BEEN RECOGNIZED BY BOND RATING AGENCIES SUCH AS STANDARD & POOR'S?

A. Yes. Standard & Poor's explicitly cited Verizon's economic losses from local exchange competition when it placed the bond ratings of Verizon and its subsidiaries on credit watch with negative implications in March 2004. Indeed, Standard & Poor's cites the continued loss of access lines to wholesale lessees, losses due to wireless substitution, and competition from cable telephony as the primary reasons for its decision to place Verizon on credit watch with negative implications.

Q. WHAT DID STANDARD & POOR'S SAY WITH RESPECT TO VERIZON'S ECONOMIC LOSSES AS A RESULT OF COMPETITION?

A. With respect to Verizon's continuing line losses to wholesale lessees, Standard & Poor's states,

> AT&T and MCI have benefited from the currently favorable unbundled network element platform ("UNE-P") pricing environment in supporting their recent forays into local service. Standard & Poor's recognizes that while the current advantageous UNE-P rates will not be available indefinitely, these RBOC competitors are likely to continue to pursue local customers via a facilities-based approach or alternate bases."

With regard to losses from wireless substitution, Standard & Poor's states,

> With wireless carriers offering more minutes and lower prices, and with continued wireless network upgrades, it is estimated that several million customers have already dropped their wireline phone service in favor of their wireless phones.

Finally, in regard to competition from cable telephony, Standard & Poor's states:

> While Cox Communications Inc. and the former AT&T Broadband (acquired by Comcast Corp.) have offered telephony for a number of years, the confluence of technology and revenue issues is likely to thrust most major cable companies into telephony in earnest in 2004. … Given the state of technology and current regulation, it appears that the cable companies pose a more imminent threat to the RBOCs than the RBOCs do to the cable companies.

Q. DR. SELWYN ARGUES ON PAGE 40 OF HIS TESTIMONY THAT THE COST OF CAPITAL INPUT SHOULD NOT REFLECT COMPETITIVE MARKET RISKS BECAUSE INVESTORS ARE ABLE TO BALANCE OR ELIMINATE SUCH RISKS THROUGH DIVERSIFICATION OF THEIR PORTFOLIOS. DO REAL WORLD INVESTORS REQUIRE A HIGHER RATE OF RETURN TO COMPENSATE FOR COMPETITIVE MARKET RISK?

A. Yes. Real world investors simply do not evaluate investment risk in the simplistic way Dr. Selwyn suggests when he estimates Verizon NW's risk using beta. Rather, real-world investors need to be compensated for competitive market risks, a conclusion supported by several forms of evidence. First, financial scholars have found that data such as a specific company's size, liquidity, dividend yield, and market-to-book ratio provide better explanations of security returns than betas, which only measure the risks due to changes in the market as a whole. See, for example, Fischer Black, Michael C. Jensen, and Myron Scholes, "The Capital Asset Pricing Model: Some Empirical Tests," in *Studies in the Theory of Capital Markets*, M. Jensen, ed. New York: Praeger, 1972; Eugene Fama and James MacBeth, "Risk, Return, and Equilibrium: Empirical Tests," 81 *Journal of Political Economy*, 607-36 (1973); Robert Litzenberger and Krishna Ramaswamy, "The Effect of Personal Taxes and Dividends on Capital Asset Prices: Theory and Empirical Evidence," 7 *Journal of Financial Economics,* 163-95 (1979); Rolf Banz, "The Relationship between Return and Market Value of Common Stocks," *Journal of Financial Economics*, 3-18 (March 1981); and Eugene Fama and Kenneth French, "The Cross-Section of Expected Returns," *Journal of Finance,* 427-465 (June 1992).

Second, when financial analysts assess investment risk, they invariably include both individual company characteristics as well as general economic characteristics. For example, the Value Line safety rank, a commonly used measure of equity risk, is computed "by averaging two other Value Line indexes—the price stability index and the financial strength rating." (See *How to Invest in Common Stocks: a Guide to Using the Value Line Investment Survey* at 40.) The price stability index includes individual company stock volatility as well as sensitivity to the market as a whole, and the financial strength rating considers only unique company characteristics.

Third, investors have a natural aversion to investing in a company when they expect a company's stock to decline. To induce investors to invest in such a company, they must be compensated for the risks of the stock's possible decline. Furthermore, securities analysts' reports on individual companies — which obviously cater to investors — are dominated by analyses of competition. Moreover, analysts' buy and sell recommendations generally reflect their conclusions about the effects of competition in particular. If investors were unconcerned with the risks of competition, analysts would soon learn to spend little time investigating a company's competitive landscape.

Thus, Dr. Selwyn's argument that the cost of capital need not address the UNE-specific competitive risks runs counter to the way investors themselves would consider the risk of investing in a UNE company. Dr. Selwyn's proposed approach accordingly would produce UNE rates that were too low to allow the incumbent to provide its investors with the return they would in fact demand based on their much higher, real-world evaluation of the relevant risks.

B. DR. SELWYN FAILS TO RECOGNIZE THAT VERIZON NW FACES SIGNIFICANT RISK THAT IT WILL NOT BE ABLE TO EARN ITS COST OF CAPITAL UNDER THE TELRIC STANDARD.

Q. DID YOU PROVIDE ANY EVIDENCE IN YOUR DIRECT TESTIMONY THAT VERIZON NW FACES A SIGNIFICANT RISK THAT IT WILL BE UNABLE TO RECOVER ITS FORWARD-LOOKING INVESTMENT AND EXPENSES, INCLUDING ITS COST OF CAPITAL, UNDER THE TELRIC STANDARD?

A. Yes. In my direct testimony at pp. 31 - 38, I provided evidence that incumbent LECs such as Verizon NW will have no opportunity to recover their forward-looking economic costs of providing UNEs under the TELRIC standard. The incumbent LECs' inability to recover their forward-looking economic costs under the TELRIC standard arises primarily because: (1) UNE rates are generally reset to reflect the lower cost of new technology before the incumbent LECs' assets are fully depreciated; (2) the incumbents' investments in the facilities required to provide UNEs are generally long-lived and largely sunk, while CLECs have the option to cancel their lease on a monthly basis; (3) UNE rates are based on the unrealistic assumption that the incumbent serves the entire demand for telecommunications service, even though competitors serve a significant and increasing share of the market; and (4) state commissions have frequently used the TELRIC standard as a justification for setting UNE rates based on highly optimistic revenue and expense forecasts.

Q. HAVE ECONOMISTS RECOGNIZED THAT ILECS SUCH AS VERIZON NW FACE A SIGNIFICANT RISK THAT THEY WILL BE UNABLE TO RECOVER THEIR FORWARD-LOOKING INVESTMENT AND EXPENSE UNDER THE TELRIC STANDARD?

A. Yes. That the ILECs will not recover their forward-looking economic costs under the TELRIC standard is recognized in the economics literature. In a recent working paper prepared by the FCC's Office of Strategic Planning and Policy Analysis, for example, Mandy and Sharkey evaluate the use of static cost proxy models such as TELRIC in setting forward-looking prices for UNE services. They conclude that TELRIC will not allow the ILECs to recover their forward-looking cost of providing UNE services:

> When TELRIC prices are recomputed at intervals shorter than asset lives, the firm will generally not earn the target rate of return. In these cases, a correction factor must be applied to the TELRIC price path in order for revenues to exactly recover investment cost, including the target rate of return. (David M. Mandy and William W. Sharkey, "Dynamic Pricing and Investment from Static Proxy Models," abstract.)

Two other papers by Mandy reach similar conclusions, "TELRIC Pricing with Vintage Capital," 22 Journal of Regulatory Economics, 215-249 (2002), and "Pricing Network Elements When Costs Are Changing," 26 Telecommunications Policy 53-67 (2002).

Q. HAS THE FCC'S WIRELINE COMPETITION BUREAU ALSO RECOGNIZED THAT THE INCUMBENT LEC WILL HAVE NO OPPORTUNITY TO RECOVER ITS FORWARD-LOOKING ECONOMIC COSTS UNDER THE TELRIC STANDARD?

A. Yes. The FCC's Wireline Competition Bureau recognized this risk in the *Virginia Arbitration Order*:

> As the Commission found in the *Triennial Review Order*, if equipment prices are declining, an incumbent LEC needs to recover more of its investment in an asset during the early years of the asset's life and less in the later years in order to compete effectively with a subsequent entrant that pays less for the same asset. Even if there is no new entry, but the cost of an asset is continuously decreasing, an incumbent LEC would not recover the initial capital outlay for the asset if regulators at each rate proceeding establish successively lower UNE prices based on the application of straight line depreciation to lower asset prices.[5]

[5] Memorandum Opinion and Order, *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 Corporation Commission Regarding Interconnection Disputes With Verizon Virginia Inc.*, 18 FCC Rcd 17772 ¶ 94 (2003) ("*Virginia Arbitration Order*").

Q. HAS THE FCC ACKNOWLEDGED THAT THE REGULATORY RISK OF THE TELRIC STANDARD SHOULD BE A PRIME CONSIDERATION IN ESTIMATING THE APPROPRIATE COST OF CAPITAL FOR USE IN RATE MAKING?

A. Yes. In its reply brief filed in the TELRIC cases before the Supreme Court, the FCC stated that "an appropriate cost of capital determination takes into account not only existing competitive risks…but also ***risks associated with the regulatory regime to which a firm is subject***."[6]

Q. HAS THE U. S. SUPREME COURT ALSO ACKNOWLEDGED THAT REGULATORY RISK MUST BE CONSIDERED IN ESTIMATING THE COST OF CAPITAL FOR USE IN RATE MAKING?

A. Yes. In the *Duquesne* decision, the U.S. Supreme Court explicitly recognizes that regulatory risk should be considered in setting the cost of capital for use in ratemaking:

> The loss to utilities from prudent but ultimately unsuccessful investments under such a system is greater than under a pure prudent investment rule, but less than under a fair value approach. Pennsylvania's modification slightly increases the overall risk of investments in utilities over the pure prudent investment rule. *Presumably the PUC adjusts the risk premium element of the rate of return on equity accordingly.* [*Duquesne Light Co. v. Barasch*, 488 U.S. 299, 311-12 (1989) (Emphasis added.)]

[6] Reply Brief for Petitioners United States and the FCC, *Verizon Communications, Inc. et al. v. FCC et al.* (Nos. 00-551, 00-555, 00-587, 00-590, and 00-602) at 12 n.8. (Emphasis added.)

C. THE REGULATORY RISK OF THE TELRIC STANDARD IS NOT INCLUDED IN DR. SELWYN'S ESTIMATE OF VERIZON NW'S COST OF CAPITAL.

Q. IS THE RISK THAT VERIZON NW WILL BE UNABLE TO EARN ITS COST OF CAPITAL UNDER THE TELRIC STANDARD REFLECTED IN ESTIMATES OF THE MARKET COST OF CAPITAL USING THE DCF, CAPM, OR OTHER COST OF CAPITAL MODELS?

A. No. As described in my direct testimony at pp. 39 – 41, the risk of under recovery under the TELRIC standard is not reflected in the estimated market cost of capital using the DCF or CAPM because the risk of under recovery arises from the CLECs' option to either cancel their lease on a monthly basis and use other facilities, or cancel their lease and renew at lower rates when rates are reset to reflect the cost of new lower-cost technologies. The financial community recognizes that the value of options such as those offered to the CLECs are not reflected in the market cost of capital as estimated from the DCF or CAPM methodologies.

Q. DOES DR. SELWYN RECOGNIZE THAT VERIZON NW FACES A SIGNIFICANT RISK THAT IT WILL BE UNABLE TO RECOVER ITS INVESTMENT AND EXPENSES, INCLUDING ITS COST OF CAPITAL, UNDER THE FCC'S TELRIC STANDARD AS CURRENTLY APPLIED BY THE COMMISSION?

A. No. To the contrary, a fundamental premise of Dr. Selwyn's analysis is that Verizon NW is a low-risk monopolist that faces absolutely no risk of not recovering its investment and expenses, including its cost of capital, under the TELRIC standard.

IV. DR. SELWYN'S STATISTICAL STUDY OF THE EFFECT OF COMPETITION ON RISK

Q. HOW DOES DR. SELWYN MEASURE RISK?

A. Dr. Selwyn uses RBHC betas as a measure of risk.

Q. HAVE RBHC BETAS INCREASED OVER THE LAST SEVERAL YEARS?

A. Yes. RBHC betas have increased from an average of approximately .825 in the first half of 2000 to approximately 1.0 today.

Q. DOES DR. SELWYN ATTEMPT TO EXPLAIN WHY RBHC BETAS HAVE INCREASED OVER THE LAST SEVERAL YEARS?

A. Yes. In an attempt to explain the increase in the RBHCs' betas over the last several years, Dr. Selwyn performed a statistical study of the relationship between the RBHCs' betas and three economic factors: the level of facilities-based competition, the percentage of the companies' assets in non-ILEC businesses, and the degree of leverage. He contends that his analysis shows that the increase in RBHC betas from the second half of 2000 to the first half of 2003 was caused by an increase in the RBHCs' average investment in non-ILEC (wireless and broadband) assets, not by an increase in competition. (Selwyn direct at 40 – 46 and Appendix 1 to Attachment 4.)

A. DR. SELWYN'S STATISTICAL STUDY IS SERIOUSLY FLAWED BY HIS USE OF INCORRECT DATA POINTS.

Q. IS DR. SELWYN'S STUDY OF THE RELATIONSHIP BETWEEN THE RBHCS' BETAS AND HIS THREE EXPLANATORY FACTORS STATISTICALLY SOUND?

A. No, it is fundamentally flawed. First, as shown below in Table 1 (which is a copy of Dr. Selwyn's exhibit titled, "Data Underlying Appendix 1"), in Dr. Selwyn's study, the positive relationship between an increase in beta values and an increase in the percentage of non-ILEC assets found on the RBHCs' balance sheets is caused entirely by just two erroneous data observations: the "Qwest" observations for the second half of 2000 ("2H00" in Table 1) and the first half of 2001, following the merger of U S WEST with Qwest ("1H01" in Table 1). These observations are highly unusual in that, as shown in the table below, the beta value for Qwest increased from 0.75 in 2H00 to 1.60 in 1H01, while the percentage of non-ILEC assets increased from 0.1415 to 0.6892 (that is, from approximately 14% to 69%) in just a six-month period. Since beta values are measured using five years of monthly historical data, it is highly unlikely that a company's beta could have increased from 0.75 to 1.60 in a six-month period. It is also unlikely that a company's percentage of non-ILEC assets would increase from 14% to 69% in a six-month period simply through internal expansion.

Table 1

Dr. Selwyn's Data Underlying his Regression Analysis
("Data Underlying Appendix 1")

Company	Year	Beta	FB_Comp	Non_ILEC	Leverage
BellSouth	1H00	0.825	0.0186	0.4719	0.1593
BellSouth	2H00	0.825	0.0207	0.4260	0.1967
BellSouth	1H01	0.825	0.0238	0.4170	0.2108
BellSouth	2H01	0.800	0.0260	0.3868	0.1931
BellSouth	1H02	0.775	0.0192	0.3861	0.2244
BellSouth	2H02	0.850	0.0199	0.3670	0.3141
BellSouth	1H03	0.900	0.0240	0.3641	0.2557
Qwest	**2H00**	**0.750**	**0.0122**	**0.1415**	**0.2582**
Qwest	**1H01**	**1.600**	**0.0255**	**0.6892**	**0.2458**
Qwest	2H01	1.475	0.0322	0.6644	0.4206
Qwest	1H02	1.475	0.0393	0.6603	0.6490
Qwest	2H02	1.675	0.0449	0.6557	0.8614
SBC	1H00	0.825	0.0124	0.4096	0.1274
SBC	2H00	0.850	0.0208	0.4317	0.1391
SBC	1H01	0.825	0.0276	0.4514	0.1542
SBC	2H01	0.800	0.0296	0.4872	0.1452
SBC	1H02	0.775	0.0326	0.5077	0.1692
SBC	2H02	0.900	0.0342	0.4792	0.2557
SBC	1H03	0.975	0.0351	0.5215	0.2366
Verizon	1H00	0.850	0.0171	0.3184	0.1773
Verizon	2H02	1.025	0.0480	0.5390	0.4349
Verizon	1H03	1.000	0.0478	0.5415	0.3680

("IH00" means first half of 2000; "2H00" means second half of 2000.)

Q. ARE THE HIGHLY UNUSUAL VALUES FOR "QWEST'S" BETA AND PERCENTAGE OF NON-ILEC ASSETS IN THE SIX-MONTH PERIOD 2H00 TO 1H01 REPRESENTATIVE OF THE CHANGE IN "QWEST'S" TRUE BETA AND PERCENTAGE OF NON-ILEC ASSETS DURING THIS PERIOD?

A. No. "Qwest's" beta and percentage of non-ILEC assets did not increase by these amounts in that six-month period. Rather, the increase in beta from 0.75 to 1.60 was not associated with one company. The 0.75 beta at the second half of 2000 was actually based on five years of historical data for "US West," (US West and Qwest merged in the June 2000), while the 1.60 beta at the first half of 2001 was based on five years of historical data for the pre-merger company “Qwest,” a company that had invested billions of dollars in building a national fiber optic network. Similarly, the 0.1415 percentage of non-ILEC assets was associated with “US West,” whereas the 0.6892 percentage of non-ILEC assets was associated with the newly-merged Qwest/US West. Thus, the two data points are not comparable and do not even relate to the same company. Since the two observations do not relate to the same company, they should not have been used to examine whether the ILECs’ percentage of non-ILEC assets was a factor in causing the RBHCs’ betas to increase. After all, Qwest was not an ILEC at all in the second half of 2000, and its beta value certainly did not reflect the impact of ILEC assets.

Q. IS THERE A MORE LEGITIMATE WAY TO COMPARE THE DATA FOR “QWEST” FOR BOTH TIME PERIODS, *I.E.*, PRE- AND POST-MERGER?

A. Yes. Rather than comparing data for US West for the first half of 2000 with data for Qwest for the first half of 2001, Dr. Selwyn should have compared data for Qwest for both time periods. Table 2 below shows the data for this comparison. It is immediately obvious when these data are compared that the Qwest beta stayed approximately the same from the second half of 2000 to the first half of 2001, even though the company’s percent of non-ILEC assets declined from 100% to 68.92%, and, hence, its percentage of ILEC assets increased from 0% to 31.08%. One could conclude from these data that since the decrease in broadband assets had no effect on Qwest’s beta, the broadband assets are, at a minimum, no riskier than the ILEC assets. In truth, however, it is impossible to draw any reliable conclusion, because the beta values represent five years of historical data. Thus, the sudden increase in ILEC and decrease in non-ILEC assets is not likely to impact the beta estimate for many months.

Table 2

Qwest Data Second Half 2000 and First Half 2001

Time	Beta	% Non-ILEC Assets	ILEC Assets
2H00	1.625	100.00%	00.00%
1H01	1.600	68.92%	31.08%

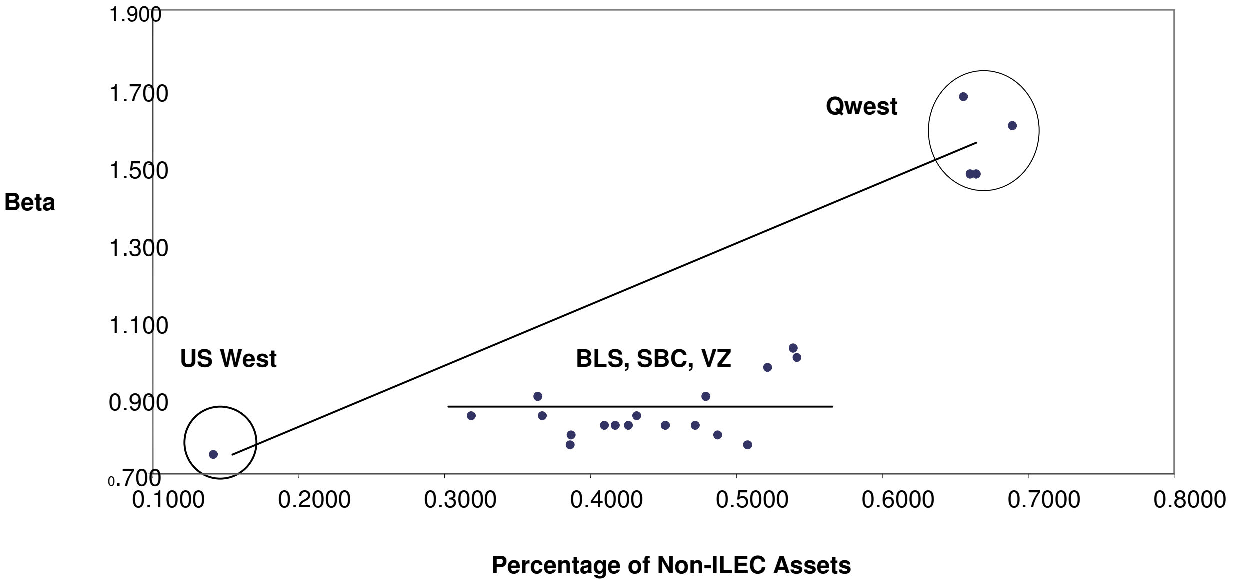
B. DR. SELWYN'S STUDY INDICATES THAT COMPETITION IS THE MAJOR FACTOR AFFECTING THE RBHCS' RISK ONCE HIS DATA ERRORS ARE CORRECTED.

Q. HAVE YOU EXAMINED WHAT EFFECT THE INCLUSION OF THE INCONGRUOUS "QWEST" DATA HAD ON DR. SELWYN'S STATISTICAL RESULTS?

A. Yes. As a first step, I reviewed the scatter plot shown below in Figure 1 below. This figure depicts how the "Qwest" values for beta and percentage of non-ILEC assets compare to the values for BellSouth, SBC, and Verizon. Clearly, the Qwest values are outliers. Moreover, even a casual observer can see that there is no relationship between beta and percentage of non-ILEC assets for BellSouth, SBC, and Verizon (see the horizontal line through the data for BellSouth, SBC, and Verizon). In contrast, there is a very strong positive relationship between beta and the percentage of non-ILEC assets for Qwest, which arises solely from the incongruous US WEST data in the lower left corner of the graph (demonstrated by the upward sloping line). Thus, the inclusion of US West data for the second half of 2000 clearly biased Dr. Selwyn's results.

Figure 1

Scatter Plot of Dr. Selwyn's Data Points



Q. DID YOU QUANTIFY THE IMPACT OF THE INCONGRUOUS US WEST DATA POINT BY RE-RUNNING DR. SELWYN'S REGRESSION WITHOUT THIS DATA POINT?

A. Yes. The results, which are shown in Table 3 below, indicate that once the US West observation is removed, the percentage of non-ILEC assets and the percentage of debt in the ILECs' capital structure have no significant impact on beta values over the study period.

Table 3

Dr. Selwyn's Regression Results without Incongruous US West Data Point[7]

	Standardized Coefficient	**T**	Sig.
(Constant)		7.019	.000
Non-ILEC assets	**.134**	**.896**	.396
QWEST	.785	3.760	.006
SBC	-.106	-1.526	.165
BellSouth	-.114	-1.308	.227
Facilities Competition	**-.027**	**-.154**	.881
2H00	.019	.454	.662
1H01	.027	.415	.689
2H01	-.043	-.563	.589
1H02	-.074	-1.164	.278
2H02	.110	1.574	.154
1H03	.127	1.816	.107
Leverage	**.048**	**.347**	.737
Dependent variable:	Beta		

Q. **ARE THERE OTHER FLAWS IN DR. SELWYN'S STATISTICAL ANALYSIS OF THE EFFECT OF COMPETITION ON RISK?**

A. Yes. Dr. Selwyn inappropriately defines competition solely by the percentage of lines served by facilities-based wireline competitors. These data do not reflect the impact of facilities-based intermodal competition from wireless carriers, cable TV providers, private networks, and Internet companies, nor do they reflect the rapid increase in UNE-P competition that followed state-authorized UNE rate

[7] The time and company variables in the left-hand column of this table are dummy variables that control for differences in time and company. The important coefficients for the purposes of Dr. Selwyn's conclusions are: (1) non-ILEC assets; (2) facilities competition (labeled "FB_Comp in the CLECs" data shown in Table 1); and (3) leverage. The insignificance of the coefficients for these three variables is indicated by the fact that their associated t values are less than 2.

reductions in 2002. Judging from comments in the financial press, it is likely that the financial community increased its estimate of the RBHCs' risk in late 2002 because state commissions were seen as setting UNE rates at levels below the RBHCs' actual forward-looking costs of providing UNEs. [8]

Q. DID YOU ALSO EXAMINE WHETHER DR. SELWYN'S CONCLUSION THAT COMPETITION HAD NO IMPACT ON BETA VALUES WAS AFFECTED BY HIS DEFINITION OF COMPETITION?

A. Yes. I examined whether Dr. Selwyn's conclusion that competition had no impact on beta values was affected by his definition of competition by re-running his regressions using total CLEC lines as a measure of competition. As shown in Table 4 below, when competition is defined using total CLEC lines, rather than only facilities-based lines, and the first US WEST/Qwest observation is removed, the competition variable is now positive and significant at the 10% level, while the percent of non-ILEC assets and leverage variables are insignificant.[9]

Q. DOES YOUR RE-STATED DEFINITION OF COMPETITION IN DR. SELWYN'S REGRESSION STUDY REFLECT THE EFFECTS OF INTERMODAL COMPETITION?

[8] Declaration of Thomas W. Hazlett, Ph.D., Prof. Arthur M. Havenner, and Coleman Bazelon, Ph.D., *In the Matter of Review of the Commission's Ruling Regarding the Pricing of Unbundled Network Elements and the Resale of Service by Incumbent Local Exchange Carriers*, WC Docket No. 03-173 (filed Dec. 16, 2003).

[9] In particular, .074 under the column labeled "Sig." indicates that there is only a probability of 7.4% that there is no relationship between competition and beta.

A. No. My re-stated definition of competition does not reflect the effects of intermodal competition. If I had been able to measure the impact of intermodal competition, I am confident that the results would indicate that intermodal competition was highly correlated with increased RBHC betas over Dr. Selwyn's study period.

Table 4

CLEC Regression Results
Using Total Competition as an Explanatory Variable

	Unstandardized Coefficient	Std. Error	Standardized Coefficient	**T**	Sig.
(Constant)	.890	.134		6.623	.000
Non-ILEC Assets	-.563	.501	-.210	-1.124	.281
Competition	3.799	1.952	**.438**	**1.946**	.074
QWEST	.892	.175	1.236	5.113	.000
SBC	5.992E-03	.075	.010	.080	.938
BellSouth	1.616E-02	.078	.027	.207	.839
Leverage	-.214	.146	-.139	-1.461	.168
Period	-2.023E-02	.021	-.142	-.955	.357
Dependent Variable:	Beta				

V. PROXY COMPANIES

Q. WHAT COMPANIES DOES DR. SELWYN CHOOSE AS HIS RISK PROXY GROUP FOR VERIZON NW'S UNE BUSINESS IN WASHINGTON?

A. Dr. Selwyn chooses a group of four telecommunications holding companies, BellSouth, Qwest, SBC, and Verizon, as cost of capital proxies for Verizon NW's UNE business in Washington.

A. DR. SELWYN'S INCLUSION OF QWEST'S HIGHLY-LEVERAGE CAPITAL STRUCTURE AND EXCLUSION OF QWEST'S HIGHER COSTS OF DEBT AND EQUITY BIASES HIS RESULTS DOWNWARD.

Q. IS QWEST A REASONABLE RISK PROXY FOR VERIZON NW'S UNE BUSINESS IN WASHINGTON?

A. No. Although Qwest offers many of the same telecommunications services as Verizon NW, its financial profile is significantly different from Verizon NW's. In particular, Qwest is a very highly leveraged company with:

- a total shareholder's deficit of more than $1 billion on its balance sheet;
- earnings that are insufficient to cover the interest on its debt;
- cash flows from operations that are less than its capital expenditures;
- more than $4.4 billion in long-term commitments for the purchase of services that the company no longer needs;
- billions of dollars in potential liabilities resulting from shareholder lawsuits and possible penalties from the SEC associated with misstatements of its accounting results in prior years; and
- potential large obligations to make additional payments to its pension funds.

Not surprisingly, Qwest's debt is rated Ba3 by Moody's and B- by Standard & Poor's. Both these ratings are considered to be well below investment grade, indicating that Qwest's access to capital markets is limited. With respect to Moody's Ba3 rating, Moody's states,

> [A] Ba rating is judged to have speculative elements, meaning that the future of the issuer cannot be considered to be well-assured. Often the protection of interest and principal payments may be very moderate, and thereby not well safeguarded during both good and bad times.

With respect to the Standard & Poor's rating of B-, Standard & Poor's states,

> any rating below the lowest investment grade of BBB "indicates that the security is speculative in nature. A B- rating indicates that the issuer currently has the capacity to meet its financial commitment on the obligation, but adverse business, financial or economic conditions will likely impair the issuers' capacity or willingness to meet its financial commitment on the obligation." (Qwest Form 2003 10K at 57 – 58.)

Q. DOES DR. SELWYN'S USE OF QWEST BIAS HIS COST OF CAPITAL ESTIMATE IN ANY WAY?

A. Yes. Dr. Selwyn's inclusion of Qwest as a proxy company biases his results downward, even though Qwest has significantly higher risk than his other proxy telecommunications companies.

Q. WHY DOES DR. SELWYN'S INCLUSION OF QWEST IN HIS PROXY GROUP BIAS HIS RESULTS DOWNWARD, EVEN THOUGH QWEST IS SIGNIFICANTLY MORE RISKY THAN THE OTHER RBHCS?

A. Dr. Selwyn's inclusion of Qwest biases his results downward, even though Qwest is significantly more risky than the other proxy telecommunications companies, because he inexplicably includes Qwest's extremely high leverage in his calculation of the average capital structure of his proxy group, but he does not include Qwest's very high cost of debt in his calculation of the cost of debt component of the weighted average cost of capital, nor does he include Qwest's extremely high cost of equity in his calculation of the cost of equity component of the weighted average cost of capital. Because of Qwest's below-investment grade bond ratings, its current cost of long-term debt exceeds 9%. A conservative calculation, even using Dr. Selwyn's CAPM methodology, indicates that Qwest's cost of equity is 17%.

B. THE RBHCS ARE POOR PROXIES FOR THE PURPOSE OF ESTIMATING THE UNE COST OF CAPITAL.

Q. DO YOU AGREE WITH DR. SELWYN'S USE OF BELLSOUTH, SBC, AND VERIZON AS RISK PROXIES FOR VERIZON NW'S UNE BUSINESS IN WASHINGTON?

A. No. There are at least four reasons why BellSouth, SBC, and Verizon are poor proxies for the purpose of estimating Verizon NW's cost of capital input in UNE cost studies. First, the RBHCs are less risky than Verizon NW's UNE business because they can diversify away many of the technology, geographic, and regulatory risks that Verizon NW faces when it invests in the network to provide UNEs. The ability to diversify arises when the returns on two investments are negatively correlated. The returns on the RBHCs' wireline and wireless investments are clearly negatively correlated because wireless is a direct substitute for wireline service, with many customers using wireless instead of wireline phones. Thus, the risk the RBHCs' wireline subsidiaries face that they may lose traffic and customers to wireless providers is offset to some degree by the fact that some of that traffic and some of those customers simply will move to the RBHCs' wireless subsidiaries, and the RBHCs therefore will retain the resulting revenue.

Second, the RBHCs are simply too small a sample for the purpose of reliably estimating the cost of equity. Economists recognize that the cost of equity should be measured from a large sample because there is a certain amount of random "noise" in the results of applying cost of equity models to individual companies, and this random noise for individual companies can be significantly reduced by using a large sample of companies such as the S&P Industrials.

Third, traditional cost of equity models cannot be reliably applied to companies such as the RBHCs that are experiencing dramatic industry restructuring. The DCF model requires reliable estimates of a company's future growth prospects, and the CAPM requires reliable estimates of a company's future beta. However, because of industry restructuring, future growth prospects and future estimates of beta for the RBHCs are highly uncertain. Cost of equity estimates based on these uncertain values are too unreliable to be used as the basis for the cost of capital input in UNE cost studies.[9]

[9] The high uncertainty in the future growth prospects for the RBHCs is evidenced by the high standard deviation of analysts' growth forecasts for these companies. Growth forecasts are generally considered to be unreliable when the standard deviation is greater than the mean, and the standard deviation of analysts' long-term growth forecasts for Verizon and SBC are significantly higher than the mean forecasts for these companies. The ratio of the standard deviation to the mean is called the coefficient of variation. In March 2004, the coefficients of variation for Verizon and SBC, 2.36 and 1.84, respectively, were among the highest for all

(continued . . .)

Fourth, the RBHCs face less regulatory risk than Verizon NW's UNE business because a smaller portion of the RBHCs' total revenues are subject to the high risk of the TELRIC regulatory standard. In contrast, Verizon NW's UNE business is entirely regulated under the risky TELRIC standard.

Q. IS IT IMPORTANT FOR THE PURPOSE OF ESTIMATING THE COST OF EQUITY THAT PROXY COMPANIES HAVE SUBSIDIARIES THAT ARE IN THE UNE BUSINESS?

A. No. For the purpose of estimating the cost of equity, the proxy companies only need to be of similar risk to the entity whose cost of capital is being estimated. Dr. Selwyn's proxy companies are not of similar risk to the entity whose cost of capital is being estimated because they can diversify away many of the technology and regulatory risks facing the UNE provider. Furthermore, Dr. Selwyn has used the CAPM as one method of estimating the cost of equity in this proceeding. The CAPM is based on the assumption that companies with the same beta have similar risk. The CAPM specifically does not state that companies in the same line of business have similar risk.

C. THE S&P INDUSTRIALS ARE THE MOST APPROPRIATE PROXY FOR THE RISKS OF PROVIDING UNES IN A COMPETITIVE MARKET.

Q. WHAT COST OF EQUITY PROXIES DO YOU RECOMMEND BE USED TO ESTIMATE THE COST OF EQUITY FOR VERIZON NW'S INVESTMENT IN

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companies in the S&P 500 and among the highest for all the 4,225 companies in the I/B/E/S database.

THE FACILITIES REQUIRED TO PROVIDE UNBUNDLED NETWORK ELEMENTS?

A. I recommend the S&P Industrials as a cost of equity proxy for Verizon NW's investment in the facilities required to provide unbundled network elements.

Q. WHY DO YOU RECOMMEND THE S&P INDUSTRIALS AS A COST OF CAPITAL PROXY FOR VERIZON NW'S INVESTMENT IN THE FACILITIES REQUIRED TO PROVIDE UNBUNDLED NETWORK ELEMENTS?

A. I recommend the S&P Industrials because the TELRIC standard requires that the cost of capital input in UNE cost studies should reflect the risks of a market with full facilities-based competition. Since the S&P Industrials are a group of competitive firms whose composite risk is average, I have selected them as a reasonable proxy for Verizon NW's risk of providing unbundled network elements in a competitive market. In addition, the S&P Industrials are a large sample of companies that, as a group, are not experiencing the same degree of radical restructuring and technological change as the telecommunications holding companies; thus, the DCF and CAPM methods provide more reliable estimates for these companies, on average, than Dr. Selwyn's small proxy group.

Q. HAVE ANY STATE COMMISSIONS USED THE S&P INDUSTRIALS AS A PROXY FOR THE RISKS OF PROVIDING UNES IN A COMPETITIVE MARKET?

A. Yes. The Massachusetts Department of Telecommunications and Energy recognized that the TELRIC standard required a proxy group of competitive companies in its UNE proceedings. It chose the S&P Industrials as the most appropriate proxy for the risks of operating in a competitive market. In addition, the Pennsylvania Public Utilities Commission recently reviewed the cost of capital input in UNE cost studies to determine whether it was compliant with the FCC's guidance in the *Triennial Review Order*. The Pennsylvania Commission determined that the previously authorized cost of capital input was not TELRIC-compliant and revised the authorized UNE cost of capital upward using a 14.37% estimate of the cost of equity based on Verizon's recommended S&P Industrial proxy group. As noted above, in the Virginia arbitration proceeding, the Wireline Competition Bureau chose a beta of 1.0 in its application of the CAPM because the average beta for the S&P 500 was 1.0

Q. WHY IS IT NECESSARY TO ESTIMATE THE COST OF CAPITAL FOR COMPETITIVE COMPANIES WHEN FORWARD-LOOKING ECONOMIC COST PRINCIPLES ARE USED TO ESTABLISH THE COST OF UNBUNDLED NETWORK ELEMENTS?

A. The cost of capital must be linked to the specific investment under consideration. Under forward-looking economic costing principles, the market for unbundled network elements is assumed to be competitive. If the competitive market assumption is used to estimate the investment in facilities and software required to provide unbundled network elements, then the competitive market assumption must also be used to estimate the cost of capital. Any other assumption would not produce rates that approximate what the incumbent LEC could charge if there were a competitive market for unbundled network elements. Indeed, if one were to use a monopoly market assumption in estimating the cost of capital input in forward-looking cost studies, but a competitive market assumption in estimating the operating expenses and amount of investment, one would necessarily arrive at rates that are less than those that the incumbent LEC would be able to charge in a competitive market. As a result, there would be no economic incentive for CLECs to invest in their own facilities.

VI. COST OF DEBT

Q. HOW DOES DR. SELWYN RECOMMEND ESTIMATING THE COST OF DEBT COMPONENT OF UNE COSTS?

A. Dr. Selwyn recommends that the cost of debt be estimated by calculating the average yield to maturity on Verizon Communications' outstanding debt.

Q. DO YOU AGREE WITH DR. SELWYN 'S RECOMMENDED PROCEDURE FOR CALCULATING THE COST OF DEBT COMPONENT OF UNE COSTS?

A. No. There are several problems with Dr. Selwyn's recommended procedure for calculating the cost of debt. First, Dr. Selwyn fails to consider how Verizon should finance a forward-looking investment in the network envisioned in UNE cost studies. Financial theory suggests that companies can minimize their exposure to interest rate fluctuations by matching the maturity of their assets with the maturity of their liabilities. Thus, most companies use long-term debt to finance investments in long-term assets and short-term debt to finance investments in short-term assets. Since the investments envisioned in UNE cost studies are primarily long term, a company such as Verizon NW would normally finance an investment in these assets with long-term debt.

Second, Dr. Selwyn fails to recognize that much of the long-term debt on Verizon's balance sheets is near to maturity and is therefore now trading as short-term debt. Indeed, the average term to maturity on the bonds in Dr. Selwyn's schedule is approximately 12 years, whereas the Commission used an average life for Verizon's assets in its UNE cost studies of more than 17 years. Since Verizon NW would not finance the construction of a new telecommunications network with short-term debt, the inclusion of long-term debt that is now priced as short-term debt in Dr. Selwyn's yield to maturity calculation biases his estimate of debt cost downward.

Third, Dr. Selwyn fails to recognize that the lower yields to maturity on long-term debt that is priced as short-term debt do not reflect the true interest cost being paid on this debt. Since most of Verizon's debt is not callable, Verizon cannot refinance its debt at the yields to maturity shown on Dr. Selwyn's schedule. Instead, Verizon must continue to pay the coupon rate on its debt until that debt matures, at which point it must repurchase the bonds from the bond investors at face value.

Fourth, Dr. Selwyn incorrectly includes numerous bonds issued by Verizon Global Funding and GTE Corp. that were not used to finance Verizon's wireline telephone investments, and failed to include some bonds that do finance wireline telephone investments.

Fifth, Dr. Selwyn fails to include flotation costs in his estimate of Verizon NW's debt costs. No company could finance the construction of a large telecommunications network without incurring significant expenses for issuing the bonds and stocks used to finance the network's construction.

Q. HOW DO YOU RECOMMEND THAT THE COST OF DEBT BE CALCULATED IN UNE COST STUDIES?

A. I recommend that the cost of debt in UNE cost studies be measured by the yield to maturity on Moody's A-rated Industrial bonds.

Q. WHY DO YOU RECOMMEND THAT THE YIELD TO MATURITY ON MOODY'S A-RATED INDUSTRIAL BONDS BE USED TO MEASURE THE COST OF DEBT IN UNE COST STUDIES?

A. I recommend that the yield to maturity on A-rated Industrial bonds be used to measure the cost of debt in UNE cost studies because this yield to maturity best approximates the yield Verizon NW would actually pay on the debt issues it would normally use to finance the construction of a new telephone network. In fact, the yield to maturity on A-rated Industrial bonds is a conservative estimate of the cost of debt for use in UNE cost studies because it excludes the flotation costs Verizon NW would undoubtedly have to pay on the debt issues it would normally used to finance the construction of a new telecommunications network.

Q. IS THERE ANY WAY TO VERIFY THAT THE YIELD TO MATURITY ON A-RATED INDUSTRIAL BONDS IS A REASONABLE ESTIMATE OF THE INTEREST RATE VERIZON NW WOULD HAVE TO PAY ON THE BONDS IT WOULD USE TO FUND THE CONSTRUCTION OF A NEW LOCAL TELECOMMUNICATIONS NETWORK?

A. Yes. J. P. Morgan publishes data on the interest rate it expects Verizon operating companies would have to pay for bonds of different maturities. As shown in Exhibit No.___ (JHV-6), J. P. Morgan estimates that Verizon operating companies would have to pay an interest rate of 5.96% on bonds with a maturity of 12 years and 6.89% on bonds with a maturity of 30 years. Extrapolating the difference in these yields to a maturity of 17 years, the average life of the network in Verizon NW's UNE cost studies, produces an interest rate of 6.22%. This is approximately equal to the 6.26% I recommended in my testimony.

Q. HAVE YOU CALCULATED THE AVERAGE INTEREST RATE VERIZON ACTUALLY PAYS ON ITS OUTSTANDING DEBT?

A. Yes. As shown in Exhibit No.___ (JHV-7), the average interest rate Verizon actually pays on its outstanding debt is 6.72%. This rate reflects the internal rate of return on the cash flows Verizon actually is paying on its outstanding debt issues as of May 6, 2004.

VII. COST OF EQUITY

A. DR. SELWYN'S APPLICATION OF THE CAPITAL ASSET PRICING MODEL (CAPM) IS BASED ON INCORRECT DATA AND PRODUCES RESULTS THAT SIGNIFICANTLY UNDERESTIMATE VERIZON NW'S COST OF EQUITY.

Q. HOW DID DR. SELWYN ESTIMATE THE COST OF EQUITY COMPONENT OF THE UNE COST OF CAPITAL FOR VERIZON NW'S UNE BUSINESS IN WASHINGTON STATE?

A. Dr. Selwyn applied the CAPM to his proxy group of four telecommunications holding companies.

Q. PLEASE DESCRIBE THE CAPM.

A. The CAPM is an equilibrium model of the security markets in which the expected or required return on a given security is equal to the risk free rate of interest, plus the company equity "beta," times the market risk premium:

Cost of equity = Risk-free rate + Equity beta x Market risk premium.

The risk-free rate in this equation is the expected rate of return on a risk-free government security, the equity beta is a measure of the company's risk relative to the market as a whole, and the market risk premium is the premium investors require to invest in the market basket of all securities compared to the risk-free security.

Q. HOW DID DR. SELWYN ESTIMATE THE RISK-FREE RATE COMPONENT OF HIS CAPM?

A. Dr. Selwyn estimated the risk-free rate component of his CAPM by averaging the interest rates on short-term Treasury bills and 20-year Treasury bonds as of March 15, 2004.

Q. DO YOU AGREE WITH DR. SELWYN'S USE OF THE AVERAGE OF THE INTEREST RATES ON SHORT-TERM TREASURY BILLS AND TREASURY BONDS TO ESTIMATE THE RISK-FREE RATE COMPONENT OF THE CAPM?

A. No. I disagree with Dr. Selwyn's use of the yield on short-term Treasury bills to estimate the risk-free rate in his CAPM approach. Dr. Selwyn is using the CAPM to estimate the required rate of return on an investment in long-lived telecommunications facilities, whereas the short-term Treasury bill is a short-term investment. Treasury bills are not risk-free over the long-term horizon considered by equity investors. By itself, Dr. Selwyn's use of the yield on short-term Treasury bills biased his CAPM results downward by more than 100 basis points and caused him to underestimate Verizon NW's UNE cost of equity.

Q. HOW DID DR. SELWYN ESTIMATE THE BETA COMPONENT OF HIS CAPM ANALYSIS?

A. Dr. Selwyn estimated the beta component of his CAPM in two ways. First, he used the reported 0.75 US West beta for the late 1990's, a time when US West, in his opinion, was a pure ILEC. Second, he attempts to disaggregate the total company betas of his proxy companies into five business segments: wireless, broadband, long distance, international, and pure ILEC.

Q. DO YOU AGREE WITH DR. SELWYN'S USE OF US WEST'S BETA FROM THE LATE 1990'S AS AN ESTIMATE OF THE ILEC BETA TODAY?

A. No. The risk of investing in the incumbent telecommunications companies has increased significantly since the late 1990's. This increase in risk is reflected in higher betas for the RBHCs, which, as I explained earlier in this testimony, is strongly related to the increased competition in the telecommunications industry which has occurred since the 1990's. There is no reason why the Commission should accept the beta for US West in the 1990's as being indicative of the ILECs' betas today.

Q. PLEASE EXPLAIN HOW DR. SELWYN ATTEMPTED TO DISAGGREGATE THE TOTAL COMPANY BETAS FOR HIS PROXY COMPANIES INTO SEPARATE BUSINESS SEGMENT BETAS.

A. Dr. Selwyn attempted to disaggregate the total company betas of his proxy companies into separate betas for the companies' individual business segments in several steps. First, he gathered data from company 2003 10K reports on the assets associated with the business segments he has identified, wireless, broadband, long distance, international, and pure ILEC. Second, he calculated betas for each segment other than the "pure ILEC" segment by looking at the average beta for a "comparable group" of companies for each of those business segments. Third, he recognized that the overall company beta is a weighted average of the betas for the individual business segments. Fourth, using his estimates of individual business segment betas for all segments except the "pure ILEC" segment, his asset data for each segment as allegedly reported in the 2003 10K reports, and the overall company beta, Dr. Selwyn "solved" the equation expressing the overall company beta as a weighted average of the individual segment betas for the unknown beta for the pure ILEC segment.

Q. YOU MENTION THAT DR. SELWYN OBTAINED DATA ON THE SEGMENT ASSETS OF HIS PROXY COMPANIES FROM THEIR 2003 10K REPORTS. WHAT ASSET DATA DOES DR. SELWYN SHOW FOR EACH COMPANY'S BUSINESS SEGMENTS?

A. Dr. Selwyn's segment asset data for his proxy companies is reported in his direct testimony (see Selwyn Direct at 53, Table 6). For ease of reference, I have reproduced Dr. Selwyn's reported segment asset data below (see Table 5).

Table 5

Copy of Dr. Selwyn's Table 6
"Extracting a Pure Unlevered ILEC Beta from a Diversified RBOC"

	Total Company Assets	*Wireless Segment Assets*	*Broadband Segment Assets*	*Long Distance Assets*	*International Segment Assets*	*Pure ILEC Segment Assets*
Verizon	137,093	35,291	12,590	0	11,872	77,340
SBC	115,482	15,316	25,543	0	8,550	66,073
BellSouth	49,702	10,210	10,651	0	3,895	24,946
Qwest	26,216	0	6,955	4,383	81	18,089
Average	82,123	15,477	13,935	1,096	6,100	46,612

Q. HAVE YOU REVIEWED THE 2003 10K REPORTS FOR DR. SELWYN'S PROXY COMPANIES TO DETERMINE WHETHER DR. SELWYN HAS CORRECTLY REPORTED THE SEGMENT DATA SHOWN IN THE COMPANIES' 10K REPORTS?

A. Yes, I have. From my examination of the companies' 2003 10K reports, I have determined that the segment asset data Dr. Selwyn used in his study do not comport with the segment data actually shown in the companies' 2003 10K reports. Indeed, his data differ from the data actually reported in the 10K reports in several fundamental respects. First, Dr. Selwyn reports assets for two business segments, which he terms “broadband” and “long distance,” that are not shown anywhere in the companies’ 10K reports. Second, Dr. Selwyn ignores a business segment, “information services,” (consisting primarily of directory publishing), that is reported in the segment information in the 10K reports for BellSouth, SBC, and Verizon. Third, Dr. Selwyn reports segment assets for Qwest, even though Qwest does not report assets for any business segments in its 2003 10K report. (The relevant pages of each company’s 2003 10K report are reproduced in Exhibit No.___ (JHV-8).) Instead, Qwest reports segment data only for revenues, expenses, and income, and Qwest’s business segments are “wireline,” “wireless,” and “other,” not the segments listed by Dr. Selwyn. Qwest’s “other” category consists primarily of corporate expenses that are allocated to the wireline and wireless segments.

Q. CAN YOU GIVE ADDITIONAL EXAMPLES OF HOW THE SEGMENT DATA SHOWN IN DR. SELWYN’S TABLE 6 DIFFER FROM THE SEGMENT ASSET DATA ACTUALLY REPORTED IN THE 2003 10K REPORTS FOR BELLSOUTH, SBC, AND VERIZON?

A. Yes. The segment asset data reported in BellSouth’s, SBC’s, and Verizon’s 2003 10K reports are shown below (see Table 6). As shown there, BellSouth, SBC, and Verizon report segment asset data in four business categories, domestic wireline, domestic wireless, directory, and international.[10] It is evident

[10] Although BellSouth, SBC, and Verizon use slightly different names for these business segments, it is clear that the businesses referred to are the same for

(continued . . .)

from the data in Table 6 that these companies do not report separate assets for a "broadband" or "long distance" segment, as Dr. Selwyn incorrectly asserts. It is also evident that, contrary to Dr. Selwyn, they present segment asset data for a segment that consists primarily of their directory publishing businesses. Further, the assets in directory publishing are significantly smaller than the assets Dr. Selwyn reports for his "broadband" segment, indicating that "broadband" is not just another name for directory or information services. Indeed, from my examination of the 10K reports, I have found that BellSouth, SBC, and Verizon all consolidate information on "broadband" and "long distance" services in their domestic wireline segment data, without breaking the wireline data into subcategories called "broadband" or "long distance."

Table 6

BUSINESS SEGMENT INFORMATION FOR DR. SELWYN'S PROXY COMPANIES AS ACTUALLY PRESENTED IN COMPANIES' 2003 10K REPORTS

	Wireline	Wireless	Directory	International
Verizon	82,087	65,166	2,431	11,872
SBC	68,434	25,526	1,515	8,550
BellSouth	32,354	10,210	1,002	3,895

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each category. For example, BellSouth reports segment assets for its communications group, domestic wireless, Latin America group, and advertising and publishing. Similarly, SBC reports segment assets for wireline, Cingular, directory, and international. Likewise, Verizon reports segment assets for four business segments: domestic telecom, domestic wireless, information services, and international.

Q. CAN YOU THINK OF ANY WAY THAT DR. SELWYN MIGHT HAVE ACCURATELY ESTIMATED THE PERCENTAGES OF HIS PROXY COMPANIES' "BROADBAND" AND "LONG DISTANCE" ASSETS FROM INFORMATION IN THE 2003 10K REPORTS?

A. No. There simply is no information in the 2003 10K reports that would allow any reasonable estimate of the amount of assets in the "broadband" and "long distance" segments for Dr. Selwyn's proxy companies.

Q. YOU ALSO NOTE THAT DR. SELWYN ESTIMATES A "BETA" FOR EACH OF HIS BUSINESS SEGMENTS. WHAT "COMPARABLE COMPANIES" DID DR. SELWYN USE TO ESTIMATE THE BETA FOR HIS PROXY COMPANIES' WIRELESS BUSINESSES?

A. Dr. Selwyn uses AT&T Wireless, NEXTEL, and Sprint PCS as comparable companies for the purpose of estimating the betas for the wireless businesses of his proxy telecommunications holding companies.

Q. ARE AT&T WIRELESS, NEXTEL, AND SPRINT PCS COMPARABLE IN RISK TO VERIZON'S WIRELESS BUSINESS?

A. No. AT&T Wireless, NEXTEL, and Sprint PCS have reported highly variable earnings levels, mostly negative, for their wireless businesses, while Verizon's earnings from its wireless business have been both positive and steadily growing. Furthermore, Verizon's wireless business is much larger than that of AT&T Wireless, NEXTEL, and Sprint PCS, and Verizon is able to diversify some of the risks of offering wireless service by offering both wireless and wireline service at the same time, whereas Dr. Selwyn's "comparables" are not able to diversify in that manner. Thus, Verizon's wireless business is significantly less risky than the "comparables" selected by Dr. Selwyn, and assigning the average beta for his "comparable" companies to Verizon's wireless business is grossly misleading.

Q. WHAT "COMPARABLES" DID DR. SELWYN USE TO ESTIMATE THE BETA FOR HIS "BROADBAND" BUSINESS SEGMENT CATEGORY?

A. Dr. Selwyn uses two Internet service providers, Earthlink and United Online, as "comparables" for his alleged "broadband" business segments of his proxy companies.

Q. YOU NOTED THAT DR. SELWYN'S PROXY COMPANIES' BUSINESS SEGMENT REPORTS DO NOT INCLUDE A "BROADBAND" BUSINESS CATEGORY, BUT, RATHER, REPORT A DIRECTORY OR INFORMATION SERVICES CATEGORY THAT REPORTS THE ASSETS FOR THEIR DIRECTORY PUBLISHING BUSINESSES. ARE EARTHLINK AND UNITED ONLINE REASONABLE "COMPARABLE" COMPANIES FOR THE RBHCS' DIRECTORY PUBLISHING BUSINESSES?

A. No. Earthlink and United Online are in entirely different and more risky businesses than the RBHCs' directory publishing businesses.

Q. ARE THERE MORE REASONABLE COMPARABLE COMPANIES FOR THE RBHCS' DIRECTORY PUBLISHING BUSINESSES?

A. Yes. The most directly comparable company for the RBHCs' directory publishing businesses would be another publishing company such as R. R. Donnelley, which has traditionally published directories for independent telephone companies.

Q. HOW DOES R. R. DONNELLEY'S UNLEVERED BETA COMPARE TO THE UNLEVERED BETA DR. SELWYN REPORTS FOR EARTHLINK AND UNITED ONLINE?

A. R. R. Donnelley's unlevered beta, 0.76, is significantly less than the 1.19 unlevered beta Dr. Selwyn reports for Earthlink and United Online.

Q. WHAT IS THE EFFECT OF DR. SELWYN'S INCLUSION OF A FICTITIOUS "BROADBAND" BUSINESS SEGMENT—WHICH IS NOT CONTAINED IN HIS PROXY COMPANIES' 2003 10K REPORTS—AND HIS EXCLUSION OF THE DIRECTORY PUBLISHING BUSINESS SEGMENT—WHICH IS CONTAINED IN THE COMPANIES' 10K REPORTS—ON THE RESULTS OF HIS ANALYSIS?

A. Since the "broadband" segment beta is very much higher than the directory segment beta, and since a higher beta for any segment other than domestic wireline causes Dr. Selwyn's estimate of beta for the domestic wireline segment to be lower, his fallacious substitution of a fictitious "broadband" segment for the directory segments of his proxy companies grossly biases his beta calculations downward.

Q. IN SUMMARY, WHAT IS YOUR CONCLUSION REGARDING DR. SELWYN'S ATTEMPT TO DISAGGREGATE HIS PROXY COMPANIES' OVERALL BETA INTO A BETA FOR A WIRELINE SEGMENT?

A. Dr. Selwyn's attempt to disaggregate his proxy companies' overall beta into a beta for a separate wireline segment is a total failure. Since Dr. Selwyn's analysis is based on incorrect and misleading data for his proxy companies' reported business segments, and is further based on a group of companies that are not comparable to the proxy companies' business segments, his results are totally meaningless. The Commission should give no credibility whatsoever to Dr. Selwyn's beta calculations.

Q. HOW DID DR. SELWYN ESTIMATE THE RISK PREMIUM ON THE MARKET PORTFOLIO IN HIS APPLICATION OF THE CAPM?

A. Dr. Selwyn uses risk premium data obtained from Ibbotson Associates.

Q. DR. SELWYN CLAIMS THAT HE CALCULATED THE RISK PREMIUM IN EXACTLY THE SAME WAY AS THE WIRELINE COMPETITION BUREAU DID IN THE VIRGINIA ARBITRATION ORDER. IS HIS STATEMENT CORRECT?

A. No. The Wireline Competition Bureau estimated the CAPM risk premium from historical data on the difference between the return on a stock portfolio consisting of the S&P 500 and the *income return* on a portfolio consisting of government bonds. In contrast, Dr. Selwyn calculated the risk premium as the difference between the return on the S&P 500 stock portfolio and the *total return* on the bond portfolio. Dr. Selwyn's use of the total return on the bond portfolio, rather than the income return on the bond portfolio, biases his estimate of the market risk premium downward.

Q. WHAT ARE THE CURRENT IBBOTSON ASSOCIATES RISK PREMIUMS?

A. Using data through 2003, the current long-run risk premium over long-term Treasury bonds is 7.2%, and the risk premium over 30-day Treasury bills is 8.6%. The average of these two risk premiums, 7.9%, is 30 basis points higher than the risk premium that Dr. Selwyn used to calculate Verizon NW's UNE cost of capital.

Q. HAVE YOU CALCULATED A CAPM COST OF EQUITY FOR DR. SELWYN'S PROXY COMPANIES USING THEIR REPORTED BETAS, THE IBBOTSON ASSOCIATES RISK PREMIUM, AND THE INTEREST RATE ON LONG-TERM TREASURY BONDS AS AN ESTIMATE OF THE RISK-FREE RATE?

A. Yes. My calculation of the CAPM cost of equity is shown below (see Table 7). As shown there, the average CAPM cost of equity for Dr. Selwyn's proxy group of telecommunications holding companies is 13.9%.

Table 7

Updated CAPM Cost of Equity for Dr. Selwyn's Proxy Companies

	Qwest	BellSouth	SBC	Verizon
Beta	1.75	0.95	1.05	1.00
Risk-free Rate	5.30%	5.30%	5.30%	5.30%
Ibbotson Risk Premium	7.20%	7.20%	7.20%	7.20%
	17.9%	12.1%	12.9%	12.5%
Average	**13.9%**			

Q. DO YOU HAVE ANY RESERVATIONS ABOUT THE USE OF THE CAPM AT THIS TIME?

A. Yes. The CAPM is a theoretical model of capital market equilibrium based on certain simplifying assumptions about how investors behave, their beliefs about the probability distributions of returns on different securities, and the available opportunities in the market place. On the basis of these simplifying assumptions, the CAPM concludes that investors are sensitive to only one risk factor, how a company's stock varies in proportion to movements in the market as a whole. Relaxing the assumptions in the CAPM in the direction of more realism leads to new capital market equilibrium models that incorporate additional risk factors which affect the cost of equity. Using a single-factor model such as the CAPM, when the cost of equity actually depends on multiple risk factors, introduces a bias into the estimate of the cost of equity. Unfortunately, financial economists are in considerable disagreement about which risk factors should be included in multi-factor capital market models.

In addition to the fact that the CAPM does not capture all the risks that affect the cost of equity, there are significant problems in estimating the model's basic parameters, the risk-free rate, the beta, and the expected return on the market portfolio. Because the CAPM is a single-period model, it gives no guidance on the time frame that should be used to measure the risk-free rate. Furthermore, since the CAPM is, in theory, forward looking, the beta factor is supposed to reflect the co-variation between the *expected* return on security in the assumed single, forward-looking period and the *expected* return on the market portfolio in that single period. Thus, beta is a hypothetical construct measured from returns in hypothetical future states.

In practice, an analyst is generally confined to the use of historical data in measuring beta, a severe restriction when the risk of the candidate firm is changing dramatically. In addition, the use of historical data can provide misleading results. If a random shock such as industry restructuring causes the risk of a company to increase, its stock price, and thus, its historical return, will decline. If the decline in historical returns occurs at a time when the general stock market is increasing, the company's measured beta will decline at a time when the fundamental risk of the business is increasing.

Measuring the expected return on the market portfolio, or, equivalently, the market risk premium, is also a difficult task. In general, there are two approaches to measuring the expected market risk premium. First, one can calculate the expected return on the market using a methodology such as the DCF model applied to the S&P 500, and subtract the interest rate on a risk-free investment. This approach means that, since the DCF model is used to measure the expected risk premium, the CAPM application is essentially a DCF application, especially for firms whose betas are very close to 1.0. A second approach is to measure the expected risk premium on the market portfolio from historical data on earned returns on stock and bond portfolios. This approach is subject to the criticism that historical returns may not reflect future expected returns.

B. THE COMMISSION SHOULD ESTIMATE VERIZON NW'S COST OF EQUITY BY APPLYING THE SINGLE-STAGE DISCOUNTED CASH FLOW (DCF) MODEL TO THE S&P INDUSTRIALS.

Q. HOW DID YOU ESTIMATE THE COST OF EQUITY COMPONENT OF THE UNE COST OF CAPITAL IN THIS PROCEEDING?

A. I applied the single-stage DCF model to the S&P Industrials as described in my direct testimony in Exhibit No. ___(JHV-2).

Q. PLEASE DESCRIBE THE DCF MODEL.

A. The DCF model is based on the assumption that investors value an asset on the basis of the future cash flows they expect to receive from owning the asset. Thus, investors value an investment in a bond because they expect to receive a sequence of semi-annual coupon payments over the life of the bond and a terminal payment equal to the bond's face value at the time the bond matures. Likewise, investors value an investment in a firm's stock because they expect to receive a sequence of dividend payments and, perhaps, expect to sell the stock at a higher price sometime in the future.

A second fundamental principle of the DCF method is that investors value a dollar received in the future less than a dollar received today. A future dollar is valued less than a current dollar because investors could invest a current dollar in an interest earning account and increase their wealth. This principle is called the time value of money.

Applying the two fundamental DCF principles noted above to an investment in a firm's stock suggests that the price of the stock should be equal to:

EQUATION 1

$$P_s = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \cdots + \frac{D_n + P_n}{(1+k)^n}$$

where:

P_S = Current price of the firm's stock;

$D_1, D_2 \ldots D_n$ = Expected annual dividend per share on the firm's stock;

P_n = Price per share of stock at the time the investor expects to sell the stock; and

k = Return the investor expects to earn on alternative investments of the same risk, i.e., the investor's required rate of return.

Equation (1) is frequently called the annual discounted cash flow model of stock valuation. Assuming that dividends grow at a constant annual rate, *g*, this equation can be solved for *k*, the cost of equity. The resulting cost of equity equation is $k = D_1/P_s + g$, where *k* is the cost of equity, D_1 is the expected next period annual dividend, P_s is the current price of the stock, and *g* is the constant annual growth rate in earnings, dividends, and book value per share. The term D_1/P_s is called the dividend yield component of the annual DCF model, and the term *g* is called the growth component of the annual DCF model.

Q. HOW DID YOU ESTIMATE THE DIVIDEND YIELD COMPONENT OF THE DCF MODEL?

A. I estimated the dividend yield component by annualizing the dividend and dividing by stock price for the study period.

Q. HOW DID YOU ESTIMATE THE GROWTH COMPONENT OF THE DCF MODEL?

A. I used the consensus analysts' estimates of future earnings per share (EPS) growth reported by I/B/E/S.

Q. WHAT ARE THE ANALYSTS' ESTIMATES OF FUTURE EPS GROWTH?

A. As part of their research, financial analysts working at Wall Street firms periodically estimate EPS growth for each firm they follow. The EPS forecasts for each firm are then published. The forecasts are reviewed by investors who are contemplating purchasing or selling shares in individual companies.

Q. WHAT IS I/B/E/S?

A. I/B/E/S is a firm which reports analysts' EPS growth forecasts for a broad group of companies. The forecasts are expressed in terms of a mean forecast and a standard deviation of forecast for each firm. The mean forecast is used by investors as a consensus estimate of future firm performance.

Q. WHY DID YOU USE THE I/B/E/S GROWTH ESTIMATES?

A. The I/B/E/S consensus growth rates: (1) are widely circulated in the financial community, (2) include the projections of financial analysts who develop estimates of future EPS growth, (3) are reported on a timely basis to investors, and (4) are widely used by institutional and other investors.

Q. WHY DID YOU RELY ON ANALYSTS' PROJECTIONS OF FUTURE EPS GROWTH IN ESTIMATING THE INVESTORS' EXPECTED GROWTH RATE RATHER THAN LOOKING AT PAST HISTORICAL GROWTH RATES?

A. I relied on analysts' projections of future EPS growth because there is considerable empirical evidence that investors use analysts' forecasts to estimate future earnings growth.

Q. HAVE YOU PERFORMED ANY STUDIES CONCERNING THE USE OF ANALYSTS' FORECASTS AS AN ESTIMATE OF INVESTORS' EXPECTED GROWTH RATE, G?

A. Yes, I prepared a study in conjunction with Willard T. Carleton, Karl Eller Professor of Finance at the University of Arizona, on why analysts' forecasts are the best estimate of investors' expectation of future long-term growth. This study is described in a paper entitled "Investor Growth Expectations and Stock Prices: the Analysts versus Historical Growth Extrapolation," published in the Spring 1988 edition of *The Journal of Portfolio Management*.

Q. PLEASE SUMMARIZE THE RESULTS OF YOUR STUDY.

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

Q. WHAT CONCLUSION DO YOU REACH FROM YOUR STUDIES OF THE USE OF THE ANALYSTS' GROWTH RATES IN THE SINGLE-STAGE DCF MODEL?

A. I conclude that the analysts' growth rates are a reasonable proxy for the growth rates investors use to make stock buy and sell decisions. This is an important conclusion, because the cost of equity is determined *by investors*.

Q. DOES DR. SELWYN AGREE WITH YOUR USE OF THE SINGLE-STAGE DCF MODEL?

A. Dr. Selwyn argues that the single-stage DCF model should not be used to estimate the cost of equity because: (1) the single-stage DCF model with analysts' growth rates does not describe investor behavior; (2) the CAPM is "both easier to apply and more theoretically sound" than the DCF (Selwyn Direct Testimony at 23).

Q. HAS DR. SELWYN'S CLIENT, AT&T, SPONSORED TESTIMONY USING THE DCF MODEL IN OTHER UNE PROCEEDINGS?

A. Yes. AT&T has consistently sponsored testimony using the DCF model in UNE proceedings since 1996.

Q. DID AT&T SPONSOR TESTIMONY USING THE SINGLE-STAGE DCF MODEL IN THESE PROCEEDINGS?

A. No. AT&T has sponsored a three-stage DCF model that is based on the assumption that investors expect every company's growth to occur in three stages: a first stage in which a company's earnings grow at the I/B/E/S growth rate for five years; a second stage in which the company's earnings decline linearly over a 15-year period; and a third stage in which the company's earnings growth equals the rate of growth in the economy as a whole in perpetuity.

Q. HAVE YOU CONDUCTED ANY TESTS TO DETERMINE WHETHER AT&T'S THREE-STAGE DCF MODEL IS SUPERIOR TO YOUR SINGLE-STAGE DCF MODEL IN EXPLAINING INVESTORS' EXPECTATIONS AND SECURITY PRICES?

A. Yes. I have performed a regression analysis to determine whether, in order to value companies, investors actually use the I/B/E/S growth rates, rather than the average growth rate assumed in AT&T's three-stage model. A company's price-to-earnings ratio reflects the growth rates investors use in determining the value of a company and thus the two factors, investors' growth expectations and stock prices, should be significantly and positively correlated. My regression analysis indicates that the I/B/E/S growth rates are significantly and positively correlated with stock price/earnings ratios, while the average growth rate in AT&T's three-stage DCF model is not. These findings provide strong support for the conclusion that in general the I/B/E/S growth rates are a reasonable approximation for the growth rates investors use to make stock buy and sell decisions.[11] My findings also contradict Dr. Selwyn's assertion that the single-stage DCF model with the I/B/E/S growth rates does not describe investor behavior.

[11] While the I/B/E/S growth rates are generally the best forecast of investors' growth expectations for companies in stable industries, they should not be used for companies such as the RBHCs that are experiencing substantial industry restructuring. In fact, my recommended cost of equity is based on only the middle quartiles of the S&P Industrials because the DCF results for the first and fourth quartiles are less reliable. See also footnote 6 above.

Q. HAVE YOU CONDUCTED ANY OTHER TESTS TO DETERMINE THE REASONABLENESS OF AT&T'S THREE-STAGE DCF MODEL?

A. Yes. In testimony before various commissions, I have demonstrated that the three-stage DCF model with the inputs recommended by AT&T produces the illogical result that *higher* risk companies have a *lower* cost of equity than lower risk companies. Thus, for example, AT&T's three-stage DCF model typically produces a higher cost of equity for electric and natural gas distribution companies than the S&P Industrials. Furthermore, AT&T's three-stage DCF model often produces the illogical result that *high-risk* companies with higher betas, higher expected growth, and lower dividends have *lower costs* of equity than low-risk companies with low betas, lower expected growth, and high dividends. In contrast, I have demonstrated that the single-stage model does not produce these aberrational results.

Q. DO YOU AGREE WITH DR. SELWYN'S ARGUMENT THAT THE DCF MODEL SHOULD BE REJECTED BECAUSE THE CAPM IS EASIER TO APPLY THAN THE DCF MODEL?

A. No. The CAPM requires three fundamental inputs—the risk-free rate, the company-specific risk factor or beta, and the risk premium on the market portfolio—that are all subject to a high degree of uncertainty. In contrast, the DCF model requires the dividend yield, which can be observed in the marketplace, and the growth rate, which can be estimated for most companies through the consensus analysts' forecasts published by I/B/E/S.

Q. DO YOU AGREE WITH DR. SELWYN'S CLAIM THAT THE CAPM IS MORE THEORETICALLY SOUND THAN THE DCF MODEL?

A. No. The theory underlying the DCF model is certainly as sound as the theory underlying the CAPM. The DCF model assumes that stock prices are equal to the present discounted value of expected future cash flows available to investors. The CAPM assumes that the expected return on a stock is equal to the risk-free rate plus a risk premium, where the risk premium depends on the company-specific risk and the risk premium on the market as a whole. The DCF model is a theoretically sound explanation of how stock prices relate to cash flows over time, but does little to explain risk. The CAPM attempts to explain how stock prices are related to risk, but does nothing to explain how stock prices relate to expected cash flows over time. Neither model provides an adequate explanation of how companies are valued in the presence of real options.

Q. DOES DR. SELWYN DISCUSS THE LITERATURE ON THE CAPM IN HIS TESTIMONY?

A. Yes. On pages 21 – 22 of his testimony, Dr. Selwyn provides a brief review of several articles relating to the CAPM.

Q. DOES HE PROVIDE A FAIR OVERVIEW OF THE CURRENT STATUS OF THE CAPM IN THE FINANCE LITERATURE?

A. No. One could easily conclude from Dr. Selwyn's brief overview that the CAPM is widely supported by current research in finance. Such a conclusion would be false. As described above in my rebuttal of Dr. Selwyn's CAPM, numerous studies have found that the CAPM does not provide an adequate explanation of the many risk factors that affect stock prices.

VIII. CAPITAL STRUCTURE

A. MR. SPINKS'S RECOMMENDED BOOK VALUE CAPITAL STRUCTURE IS INCONSISTENT WITH THE FCC'S FORWARD-LOOKING ECONOMIC COST PRINCIPLES.

Q. WHAT CAPITAL STRUCTURE DOES MR. SPINKS RECOMMEND FOR THE PURPOSE OF CALCULATING THE COST OF CAPITAL INPUT IN UNE COST STUDIES IN THIS PROCEEDING?

A. Mr. Spinks recommends the same capital structure the Commission authorized for retail services in the 1994 rate of return proceeding, containing 37.224% long-term debt, 7.165% short-term debt, 0.090% preferred equity, and 55.521% common equity.

Q. HOW DID THE COMMISSION ARRIVE AT THE CAPITAL STRUCTURE IT USED TO DETERMINE VERIZON NW'S AUTHORIZED RATE OF RETURN FOR RETAIL SERVICES IN THE 1994 RATE OF RETURN CASE?

A. The Commission used the percentages of debt, preferred equity, and common equity shown on Verizon NW's regulatory books.

Q. IS THE USE OF A BOOK VALUE CAPITAL STRUCTURE SUCH AS THAT USED IN 1994 TO DETERMINE VERIZON NW'S AUTHORIZED RATE OF RETURN, AND NOW RECOMMENDED BY MR. SPINKS, CONSISTENT WITH THE BASIC ECONOMIC PRINCIPLES OF TELRIC REGULATION?

A. No. Under TELRIC regulation, rates are required to reflect the forward-looking economic cost of providing service, not the accounting or historical cost of providing service. The percentages of debt, preferred equity, and common equity shown on Verizon NW's books are inconsistent with the economic principles of TELRIC regulation because the amounts shown on Verizon NW's books necessarily reflect accounting and historical costs, rather than the forward-looking economic costs required by TELRIC. As the FCC states: "Embedded costs are the costs that the incumbent LECs carry on their accounting books that reflect historical purchase prices, regulatory depreciation rates, system configurations, and operating procedures." *Local Competition Order* ¶ 632. Furthermore, the FCC has specifically stated that UNE rates cannot be based on embedded or historical costs. (See, for example, id. at ¶ 673: "In this section, we describe this forward-looking, cost-based pricing standard in detail. …[W]e address potential cost measures *that must not be included in a TELRIC analysis, such as embedded (or historical) costs*." (Emphasis added.))

Q. IN YOUR DIRECT TESTIMONY, YOU RECOMMEND THAT A MARKET VALUE CAPITAL STRUCTURE CONTAINING 25% DEBT AND 75% EQUITY BE USED TO CALCULATE THE COST OF CAPITAL INPUT IN UNE COST STUDIES. IS YOUR RECOMMENDED CAPITAL STRUCTURE CONSISTENT WITH THE BASIC ECONOMIC PRINCIPLES OF TELRIC REGULATION?

A. Yes. My recommended market value capital structure is consistent with the FCC's forward-looking economic cost principle because the market values of debt and equity reflect forward-looking economic costs, not accounting or historical costs. My recommended capital structure is also consistent with the FCC's competitive market and economic signal principles because: (1) it represents the average capital structure of a large sample of companies operating in competitive markets; and (2) decision makers use market value capital structures when they estimate the cost of capital for use in investment decisions. Finally, my recommended capital structure provides the incumbent LEC an opportunity to recover its forward-looking economic cost of providing UNEs because investors base their estimates of the required rate of return on investment on the market values of their investments, not the historical cost.

Q. DO YOU HAVE ANY EVIDENCE THAT COMPETITIVE COMPANIES BASE THEIR INVESTMENT DECISIONS ON A COST OF CAPITAL USING THE MARKET VALUES OF DEBT AND EQUITY?

A. Yes. The Wireline Competition Bureau discussed in its order in the Virginia arbitration that AT&T used a cost of capital of 15.31%, based on a market value capital structure containing 10% debt and 90% equity, to make internal investment decisions in its local network. AT&T's updated cost of capital for internal investment decisions is **BEGIN PROPRIETARY END AT&T PROPRIETARY**, and they continue to base their cost of capital on a capital structure containing **BEGIN PROPRIETARY END AT&T PROPRIETARY** debt and **BEGIN PROPRIETARY END AT&T PROPRIETARY** equity.

Q. DO YOU AGREE WITH MR. SPINKS'S ARGUMENT ON PAGE 15 OF HIS TESTIMONY THAT YOUR RECOMMENDED 25% DEBT AND 75% EQUITY CAPITAL STRUCTURE SHOULD NOT BE USED TO ESTIMATE THE COST OF CAPITAL INPUT IN UNE COST STUDIES BECAUSE "THE BUSINESS RISK VERIZON NW FACES IN WASHINGTON STATE CANNOT JUSTIFY SUCH A CAPITAL STRUCTURE GIVEN THE *DE MINIMIS* LINE LOSSES VERIZON HAS EXPERIENCED TO DATE"?

A. No. As the FCC clarified in the *Triennial Review Order*, the cost of capital for use in UNE cost studies must be based *on the assumption that Verizon NW operates in a market with full, facilities-based competition*, irrespective of actual line losses in a particular market. In accordance with the FCC's clarification, my recommended capital structure is appropriately based on capital structure evidence for companies that operate in competitive markets. As reported in my direct testimony, these companies have consistently maintained average capital structures with less than 25% debt and more than 75% equity for many years. Furthermore, Mr. Spinks's recommended capital structure is inconsistent with the TELRIC requirement that rates be based on forward-looking economic costs, not embedded, accounting, or historical costs. My recommended market value capital structure correctly reflects forward-looking economic costs, while Mr. Spinks's recommended book value capital structure reflects historical costs.

Q. DO YOU AGREE WITH MR. SPINKS'S ARGUMENT ON PAGE 15 OF HIS RESPONSIVE TESTIMONY THAT YOUR RECOMMENDED 25% DEBT/75% EQUITY CAPITAL STRUCTURE "IS NOT A BALANCE THAT CONSIDERS ECONOMY IN THE CAPITAL STRUCTURE"?

A. No. As noted above, my recommended capital structure reflects the average capital structure of a large group of companies operating in competitive markets. Since competitive companies can only survive if they economize the percentages of debt and equity in their capital structures, my recommended capital structure represents "a balance that considers economy in the capital structure."

Q. MR. SPINKS ALSO NOTES ON PAGE 15 OF HIS TESTIMONY THAT VERIZON NW CURRENTLY HAS THE SAME S&P BOND RATING THAT IT HAD WHEN THE COMMISSION LAST APPROVED AN AUTHORIZED RETURN FOR VERIZON. HAS STANDARD & POOR'S RECENTLY PLACED VERIZON AND ITS SUBSIDIARIES ON CREDIT WATCH WITH NEGATIVE IMPLICATIONS?

A. Yes.

Q. WHAT REASONS DID STANDARD & POOR'S CITE FOR PLACING VERIZON AND ITS SUBSIDIARIES ON CREDIT WATCH WITH NEGATIVE IMPLICATIONS?

A. Standard & Poor's cited: (1) Verizon's continued loss of access lines to wholesale lessees; (2) loss of revenues and margins as a result of wireless substitution; and (3) loss of revenues and margins as a result of cable telephony.

Q. HAVE YOU CONDUCTED AN ANALYSIS OF THE LIKELY BOND RATING OF VERIZON NW FOR ITS INTRASTATE OPERATIONS IN WASHINGTON STATE IF IT WERE A STAND-ALONE COMPANY?

A. Yes. In support of Verizon NW's filing for interim rate relief in Washington State, I analyzed key financial ratios that credit rating agencies use to evaluate a company's ability to repay the interest and principle on its debt. On the basis of my analysis of these ratios, I concluded that Verizon NW would likely have a below-investment grade rating of BB if its intrastate operations were considered on a stand-alone basis. This rating is well below Verizon NW's rating at the time its authorized rate of return was determined.

B. DR. SELWYN'S MARKET VALUE CAPITAL STRUCTURE IS BIASED DOWNWARD BY HIS INAPPROPRIATE INCLUSION OF QWEST IN HIS PROXY GROUP.

Q. WHAT CAPITAL STRUCTURE WEIGHTS DOES DR. SELWYN USE IN HIS ESTIMATE OF VERIZON NW'S FORWARD-LOOKING ECONOMIC COST OF CAPITAL?

A. Dr. Selwyn uses capital structure weights consisting of 30% debt and 70% equity.

Q. HOW DID DR. SELWYN ARRIVE AT HIS RECOMMENDED CAPITAL STRUCTURE WEIGHTS?

A. Dr. Selwyn used the average market value capital structure weights of his four proxy telecommunications companies at September 30, 2003.

Q. DO YOU AGREE WITH DR. SELWYN'S RECOMMENDED CAPITAL STRUCTURE WEIGHTS?

A. No. Although I do agree with Dr. Selwyn's use of market value capital structure weights, I have several criticisms of his analysis. First, I strongly disagree with his inclusion of the highly-leveraged capital structure for Qwest. As noted above, Qwest's capital structure is so highly leveraged that bond rating agencies have been forced to lower its bond ratings to below investment grade. As a result of its highly-leveraged capital structure and consequent below-investment grade bond rating, Qwest's ability to attract the capital required to invest in its telecommunications network is highly restricted. From a public policy standpoint, it is unwise to base the capital structure for use in UNE cost studies on data for a company that has limited ability to attract the capital required for network investment.

In addition, a company such as Qwest, that has a highly-leveraged capital structure, undoubtedly has significantly higher costs of debt and equity than Verizon. Yet Dr. Selwyn did not include information on Qwest's cost of debt or Qwest's cost of equity in his analysis of Verizon NW's costs of debt and equity. It is inconsistent and unfair to include Qwest's highly-leveraged capital structure information, while at the same time excluding its higher costs of debt and equity.

I also disagree with Dr. Selwyn's inclusion of short-term debt in the calculation of his capital structure ratios. Verizon NW primarily uses short-term debt to finance working capital, and working capital is not a component in UNE cost studies. Thus, it should not be included in the capital structure calculation.

Q. HAVE YOU CALCULATED THE MARKET VALUE CAPITAL STRUCTURE FOR THE RBHCS EXCLUDING QWEST?

A. Yes. The year-end average market value capital structure for the RBHCs contained 21.5% long-term debt and 78.5% equity. If short-term debt is included, the average market value capital structure for the RBHCs at year end 2003 contains 24.5% debt and 75.5% equity.

Q. ARE THE CAPITAL STRUCTURE WEIGHTS FOR THE RBHCS CONSISTENT WITH THE AVERAGE CAPITAL STRUCTURE WEIGHTS FOR COMPANIES IN THE S&P INDUSTRIALS?

A. Yes. As described in my direct testimony, the average capital structure for the S&P Industrials contains less than 25% debt and more than 75% equity.

Q. DO THE CAPITAL STRUCTURES OF THE TELECOMMUNICATIONS HOLDING COMPANIES AND S&P INDUSTRIAL COMPANIES VARY SIGNIFICANTLY OVER TIME?

A. No. As I also described in my direct testimony, the RBHCs and S&P Industrials have generally had market value capital structures containing less than 25% debt and more than 75% equity for the last five years.

IX. RISK PREMIUM

Q. IN YOUR DIRECT TESTIMONY, YOU RECOMMEND THAT A RISK PREMIUM BE ADDED TO THE ESTIMATED MARKET COST OF CAPITAL TO GIVE VERIZON NW AN OPPORTUNITY TO ACTUALLY EARN WHATEVER RETURN IS AUTHORIZED IN THIS PROCEEDING. DOES MR. SPINKS AGREE WITH YOUR RECOMMENDED RISK PREMIUM?

A. No. On page 12 of his Response Testimony, Mr. Spinks recommends that the Commission reject my risk premium because:

1. the comparable group used for estimating the 12.03 percent WACC overestimates the competitive risk faced by Verizon Northwest in Washington and therefore already contains an additional risk premium that the FCC has stated should be used in calculating UNE rates.

2. the lease theory relied on by Verizon for proposing the risk additive falls flat on a practical perspective because Verizon does not even offer UNE loops on a lease basis.

Q. DO YOU AGREE THAT YOUR COST OF CAPITAL ESTIMATE ALREADY CONTAINS A RISK PREMIUM BECAUSE YOUR COMPARABLE GROUP "OVERESTIMATES THE COMPETITIVE RISK" ACTUALLY FACED BY VERIZON NW IN WASHINGTON STATE?

A. No. As I discuss at pages 46 – 47 of my direct testimony, the risk of investing in the facilities to provide UNEs is at least as great as the risk of investing in my comparable group of S&P Industrials. In addition, as discussed throughout this testimony, the TELRIC standard requires that the cost of capital be calculated using the assumption that Verizon NW operates in competitive markets, regardless of the status of competition past or present. Furthermore, the 12.03% weighted average cost of capital for my comparable group cannot possibly reflect the regulatory risks of the TELRIC standard because: (1) the companies in my comparable group do not operate under the TELRIC standard; and (2) the regulatory risk of the TELRIC standard results from the CLECs' option to cancel their service on a monthly basis, and real options are not included in market estimates of the cost of capital.

Q. DO AGREE WITH MR. SPINKS'S ARGUMENT THAT YOUR RISK PREMIUM SHOULD BE REJECTED BECAUSE "VERIZON DOES NOT EVEN OFFER UNE LOOPS ON A LEASE BASIS"?

A. No. Mr. Spinks is incorrect. Verizon NW does offer UNEs on a lease basis. A lease is a contract that allows a lessee to use the property of the lessor for a period of time for a specified fee. Since Verizon NW is required to allow its competitors to use its facilities for a period of time in return for a specified fee, the contract between Verizon NW and its competitors is necessarily a lease contract. The fact that Verizon NW leases UNEs to its competitors is recognized in the financial community. For example, as noted above, Standard & Poor's cited

Verizon’s continuing loss of access lines to wholesale *lessees* as one of the reasons for putting Verizon on credit watch with negative implications.

Q. DOES DR. SELWYN ALSO DISAGREE WITH YOUR RECOMMENDED RISK PREMIUM?

A. Yes. On pages 61 – 70 of his Direct Testimony, Dr. Selwyn claims that my recommended risk premium should be rejected because: (1) the regulatory risks of the TELRIC standard are already included in estimates of the cost of equity; (2) the risk of lease cancellation is risk of the ILECs’ own making, because they are the ones that are pushing for no impairment findings; (3) the risk of cancellation is minimal because cancellation simply frees capacity to be used by other customers; and (4) my estimate of the risk premium is highly sensitive to my estimate of volatility and disappears altogether for low estimated levels of volatility.

Q. HAVE THE RISKS OF CANCELABLE LEASES ALREADY BEEN CAPTURED IN MARKET ESTIMATES OF THE COST OF EQUITY USING THE CAPM OR DCF METHODS?

A. No. As I describe at pages 40 -41 in my direct testimony, the regulatory risk of the TELRIC standard, including lease cancellation risk, is not included in market estimates of the cost of capital. There are two reasons for this conclusion. First, the market cost of capital is an expected rate of return, and the essence of regulatory risk is that a company will not be able to earn its expected rate of return over time. The purpose of the regulatory risk premium is to give the company an opportunity to earn the allowed rate of return in UNE cost studies that it would not have in the absence of the regulatory risk premium. Second, the regulatory risk premium arises at least in part from the CLECs' option to cancel their lease at any time. Since traditional cost of equity methodologies such as the DCF and CAPM inherently do not include the value of option contracts, they inherently do not compensate for the risks of such contracts.

Q. DO YOU AGREE WITH DR. SELWYN'S ARGUMENT THAT THE RISK OF CANCELLATION IS OF THE ILECS' OWN MAKING BECAUSE THEY ARE PUSHING FOR NO IMPAIRMENT FINDINGS?

A. No. The risk of cancellation arises because there are numerous alternatives for competitors to serve their customers using facilities other than Verizon NW's network. Among those alternatives, for example, are building their own wireline telecommunications facilities, using their own switches, using their own or someone else's cable TV facilities, using a wireless network, or using VoIP. Thus, the risks arise because of technological capabilities that are entirely independent of impairment findings.

Q. DOES CANCELLATION OF A UNE LEASE BY CLECS FREE UP CAPACITY FOR USE BY OTHER CUSTOMERS?

A. Lease cancellation certainly frees capacity, but there is no guarantee that it will be used by other customers. As noted above and in the testimony of Mr. West, increasingly, customers are obtaining local service from wireless providers, cable TV providers, private networks, and VoIP. Since UNE studies are based on the assumption that Verizon NW provides service to 100% of the customers, it can never gain when customers leave the network. It can only lose.

Q. DO YOU AGREE WITH DR. SELWYN'S SUGGESTION THAT YOUR RISK PREMIUM IS INAPPROPRIATE BECAUSE IT IS SENSITIVE TO YOUR ESTIMATE OF VOLATILITY?

A. No. While the absolute value of the risk premium does depend on the estimate of volatility, it is not nearly as sensitive to volatility as Dr. Selwyn suggests in Table 9 on page 65 of his testimony, and it certainly does not disappear at lower levels of volatility. Furthermore, my estimate of volatility is based on reasonable volatility data, and Dr. Selwyn has not provided any evidence to refute my estimate.

Q. CAN YOU SUMMARIZE YOUR ARGUMENTS IN SUPPORT OF YOUR REGULATORY RISK PREMIUM?

A. Yes. My regulatory risk premium is required to offer Verizon NW an opportunity to earn whatever cost of capital is authorized in this proceeding. If the cost of capital is estimated correctly, but the risk premium is rejected, Verizon NW will have no incentive to invest in its network, and CLECs will have no incentive to become facilities-based providers. Thus, one of the primary goals of the Telecommunications Act will be thwarted.

X. ORDERS IN OTHER JURISDICTIONS

Q. HAVE ANY OTHER JURISDICTIONS IN VERIZON'S SERVICE TERRITORIES REVIEWED THE COST OF CAPITAL INPUT IN UNE COST STUDIES BASED ON THE FCC'S GUIDANCE IN ITS *TRIENNIAL REVIEW ORDER*?

A. Yes. The Pennsylvania Public Utility Commission and the FCC's Wireline Competition Bureau (acting in place of the Virginia State Corporation

Commission) have both reviewed the cost of capital input to be used in UNE cost studies based on the FCC's guidance in the *Triennial Review Order*.

Q. WHAT COST OF CAPITAL DID THE PENNSYLVANIA PUBLIC UTILITY COMMISSION FIND TO BE APPROPRIATE BASED ON THE FCC'S GUIDANCE IN THE *TRIENNIAL REVIEW ORDER*?

A. In November 2003, the Pennsylvania PUC determined that the appropriate cost of capital input in UNE cost studies should be 12.37%, based on the FCC's competitive market standard and an S&P Industrial proxy group.

Q. WHAT COST OF CAPITAL DID THE FCC'S WIRELINE COMPETITION BUREAU FIND BASED ON THE COMPETITIVE MARKET STANDARD OF THE FCC'S *TRIENNIAL REVIEW ORDER*?

A. The FCC's Wireline Competition Bureau found a cost of capital of 12.95% should be used in UNE cost studies in Virginia, based on the guidance from the FCC's competitive market standard.

Q. DR. SELWYN FREQUENTLY CITES THE WIRELINE COMPETITION BUREAU'S ORDER IN THE VIRGINIA ARBITRATION PROCEEDING AS SUPPORT FOR HIS RECOMMENDATIONS IN THIS PROCEEDING. HAS DR. SELWYN CORRECTLY CHARACTERIZED THE BUREAU'S ORDER IN THAT PROCEEDING?

A. No. Dr. Selwyn has mischaracterized nearly every aspect of the Bureau's decision in the Virginia arbitration. Notably, Dr. Selwyn failed to mention that the Bureau:

- Calculated a weighted average cost of capital of 13.068%, based on a 7.86% cost of debt, a 14.37% cost of equity, and a capital structure containing 20% debt and 80% equity.

- On the basis of their calculations, accepted my 12.95% cost of capital recommendation and rejected AT&T's 9.54% cost of capital recommendation.[12]

- Accepted a market value capital structure containing 20% debt and 80% equity and rejected AT&T's mixed market/book value capital structure containing 65.5% equity on the grounds that: (1) Congress prohibited the use of traditional rate base rate of return ratemaking for setting TELRIC prices; (2) the Commission's TELRIC standard calculates the investment necessary to build a telecommunications network, and the book value of Verizon's existing network is irrelevant for this purpose; and (3) investors will not earn their required return if a cost of capital based on book value is applied to the economic value of Verizon's assets.

- Used a beta of 1.0 for the S&P 500 companies because the average beta of the S&P companies is a useful benchmark for the risk faced on average by companies operating in competitive markets.

- Rejected AT&T's proposed use of a beta of .73 on the grounds that the incumbent LECs' current betas understate the risk of selling UNEs in a competitive market.

- Rejected AT&T's recommended risk premium analysis, based on an average of geometric mean and arithmetic mean risk premium data for the period 1802 to the present, in favor of the Ibbotson Associates' risk premiums.

- Rejected AT&T's multi-stage DCF model because—

    - it produces results that are inconsistent with the assumption that expected return should increase with higher risk, and

    - it is based on arbitrary assumptions about the magnitude and pattern of expected growth beyond the fifth year and "there are an unlimited number of different growth rate estimates that could be

[12] Although they accepted my 12.95% cost of capital recommendation as the recommended result closest to their own 13.068% estimate of the weighted average cost of capital for use in UNE cost studies, the Bureau's estimate was based on an application of the CAPM.

used in such a DCF model" and "no basis on which to find" that any particular proposal will produce a reasonable figure.

- Recognized that AT&T itself used an after-tax weighted average cost of capital of 15.31% for investment in its network.
- Recognized that AT&T added a 100-basis point technology risk premium to the results of its own cost of capital analysis, which is used in making its capital investment decisions, to reflect risks that are not included in the beta component of the CAPM analysis.
- Recognized that AT&T calculated its own cost of capital used in making its investment decisions based on a capital structure containing 90% equity/10% debt.

Q. DR. SELWYN ALSO CITES THE NEW HAMPSHIRE DECISION AS SUPPORTING HIS LOW RATE OF RETURN RECOMMENDATIONS IN THIS PROCEEDING. IS THE NEW HAMPSHIRE DECISION RELEVANT TO A PROCEEDING WHOSE PURPOSE IS TO ESTABLISH UNE RATES BASED ON THE FCC'S TELRIC RATE PRINCIPLES, INCLUDING THE PRINCIPLE IN THE *TRIENNIAL REVIEW ORDER* THAT THE COST OF CAPITAL MUST BE BASED ON THE RISKS OF A COMPETITIVE MARKET?

A. No. The New Hampshire decision on cost of capital is not applicable to this proceeding because the New Hampshire PUC did not properly consider the *Triennial Review Order* in its cost of capital decision. Indeed, the New Hampshire PUC determined that the same cost of capital should be used for both retail and wholesale services, even though Verizon New Hampshire's retail services are regulated under rate base rate of return regulation and wholesale services are supposed to be regulated under the more risky TELRIC standard as clarified in the *Triennial Review Order*.

Q. HAVE ANY FEDERAL COURTS RECOGNIZED THAT THE FCC'S TELRIC STANDARD REQUIRES THE ASSUMPTION THAT THE INCUMBENT LEC PROVIDES UNES IN A MARKET WITH FULL FACILITIES-BASED COMPETITION?

A. Yes. The United States District for the Northern District of Georgia found that the Georgia Public Service Commission erred when it "decided to retain the 9.27% cost of capital set in 1997 because it believed that *actual* competition in telecommunications markets had not increased sufficiently to warrant a higher cost of capital."[13] In making this decision, the Court explicitly recognized that, "[u]nder TELRIC, the cost of capital must be based upon the risk that BellSouth would face in a competitive market with multiple-facilities-based providers, not the risk that BellSouth actually faces to date or currently."[14] The Court ordered the Georgia Commission to set a new cost of capital consistent with federal law requiring the cost of capital to reflect the risks of a competitive market.

[13] *BellSouth Telecommunications, Inc., v. The Georgia Public Service Commission, et al.*, Civil Action No. 1:03-CV-3222-CC, ¶ 24 (April 6, 2004).

[14] *Id.* ¶ 22.

XI. TESTS OF REASONABLENESS

Q. IS THERE OTHER PROOF OF THE UNREASONABLENESS OF DR. SELWYN'S RECOMMENDED 7.45% COST OF CAPITAL?

A. Yes. Perhaps the best proof of the unreasonableness of Dr. Selwyn's 7.45% cost of capital is AT&T's own internal estimate of the cost of capital for use in making local network investment decisions.

Q. WHAT FORWARD-LOOKING COST OF CAPITAL DOES AT&T USE TO MAKE LOCAL EXCHANGE INVESTMENT DECISIONS?

A. AT&T indicated that as of October 28, 2003, it uses an after-tax weighted average cost of capital of **[BEGIN AT&T PROPRIETARY] [END AT&T PROPRIETARY]** to make internal decisions regarding local exchange investments. AT&T's **[BEGIN AT&T PROPRIETARY] [END AT&T PROPRIETARY]** weighted average cost of capital is based on a cost of debt of **[BEGIN AT&T PROPRIETARY] [END AT&T PROPRIETARY]** a cost of equity of **[BEGIN AT&T PROPRIETARY] [END AT&T PROPRIETARY]** and a capital structure containing **[BEGIN AT&T PROPRIETARY] [END AT&T PROPRIETARY]** equity and **[BEGIN AT&T PROPRIETARY] [END AT&T PROPRIETARY]** debt. For use in UNE cost models, the cost of capital is expressed on a before-tax basis. The before-tax equivalent of AT&T's **[BEGIN AT&T PROPRIETARY] [END AT&T PROPRIETARY]** weighted average cost of capital is **[BEGIN AT&T PROPRIETARY] [END AT&T PROPRIETARY].**

Q. WHY IS AT&T'S INTERNAL ESTIMATE OF THE FORWARD-LOOKING COST OF CAPITAL FOR USE IN MAKING LOCAL EXCHANGE INVESTMENT DECISIONS RELEVANT IN THIS PROCEEDING?

A. AT&T's internal estimate of the cost of capital for use in making local exchange investment decisions is relevant because AT&T and Verizon NW are competitors in the local exchange market. Both AT&T and Verizon NW face the risks of competition and technological change. The *Triennial Review Order* has specifically stated that the cost of capital must reflect the risks of competitive markets. AT&T's internal cost of capital reflects AT&T's estimate of the risks of operating in a competitive market, as the *Triennial Review Order* requires.

AT&T's internal estimate is also relevant as a test of the reasonableness of the 7.45% cost of capital recommendation of its witness Dr. Selwyn. Dr. Selwyn's estimate is not only some *thousand* basis points less than AT&T's internal estimate, but its components differ in every regard from AT&T's. With regard to capital structure, for example, Dr. Selwyn recommends a 70% equity capital structure, whereas AT&T uses a **[BEGIN AT&T PROPRIETARY]** **[END AT&T PROPRIETARY]** equity capital structure. With regard to the beta, Dr. Selwyn uses a beta of 0.75, whereas AT&T uses a beta of **[BEGIN AT&T PROPRIETARY]** **[END AT&T PROPRIETARY]**. With regard to the cost of debt, Dr. Selwyn uses a cost of debt of 4.98%, whereas AT&T uses a cost of debt of **[BEGIN AT&T PROPRIETARY]** **[END AT&T PROPRIETARY]**. This is compelling evidence that Dr. Selwyn's recommended cost of capital in this proceeding is unjustifiably low.

This comparison is an especially important test of reasonableness because AT&T has a strong economic incentive to employ an accurate estimate of the cost of capital in its own internal cost studies. On this basis alone, the Commission should reject Dr. Selwyn’s cost of capital estimate for Verizon NW as being unjustifiably low.

Q. IS THERE ANY FURTHER EVIDENCE OF THE UNREASONABLENESS OF DR. SELWYN’S 7.45% COST OF CAPITAL RECOMMENDATION?

A. Yes. The Wireline Competition Bureau determined that Verizon Virginia’s cost of capital for use in UNE cost studies should be 13.068% based on a 6.26% interest rate on 20-year Treasury bonds. Since then, the yield to maturity on 20-year Treasury bonds has declined to 5.3%, suggesting that the cost of capital should have declined, at most, by 100 basis points. Indeed, my estimate of Verizon NW’s cost of capital in this proceeding is approximately 100 basis points less than my estimate of the cost of capital in the Virginia proceeding. However, *Dr. Selwyn’s recommended cost of capital is 562 basis points less than the cost of capital ordered in the Virginia proceeding* (13.068% minus 7.45% equals 562 basis points). There is simply no way that the cost of capital could have declined by 562 basis points over the same period that interest rates on 20-year Treasury bonds have declined by only 100 basis points. In fact, the cost of capital should have declined by less than the change in interest rates because risk has undoubtedly increased since the time of the Virginia order.

Q. DO YOU HAVE EVIDENCE THAT THE RISK OF INVESTING IN LOCAL TELECOMMUNICATIONS FACILITIES HAS IN FACT INCREASED SINCE THE TIME OF THE VIRGINIA DECISION?

A. Yes. In the Virginia decision, the Bureau noted that AT&T used an after-tax cost of capital of 15.31% in analyzing investment opportunities in local network facilities. AT&T now uses an after-tax cost of capital of **BEGIN AT&T PROPRIETARY END AT&T PROPRIETARY**. The **BEGIN AT&T PROPRIETARY END AT&T PROPRIETARY** basis point increase in AT&T's cost of capital strongly suggests that the risk of investing in telecommunications networks has increased since the time of the Virginia decision. Furthermore, the fact that AT&T's internal cost of capital *has increased by* **BEGIN AT&T PROPRIETARY END AT&T PROPRIETARY** *basis points* at the same time that Dr. Selwyn recommends that the cost of capital has declined by 562 basis points is strong evidence that Dr. Selwyn's recommended cost of capital is grossly understated.

Q. DID THE PENNSYLVANIA PUBLIC UTILITIES COMMISSION ALSO CITE AT&T'S INTERNAL COST OF CAPITAL IN SUPPORT OF ITS 12.37% UNE COSTS OF CAPITAL?

A. Yes, it did.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes, it does.

Exhibit No. ___ (JHV-6)
Docket No. UT-023003

TELECOMMUNICATIONS AND MEDIA DEBT CAPITAL MARKETS GROUP

Melanie Shugart
(212) 834-3383

Alton McDowell
(212) 834-4606

Aarti Kumar
(212) 834-2517

J.P. Morgan Securities Inc.

New York

Assumes $1 billion tranche

As of 5/6/04

Indicative Pricing for Global Bond Offering

Verizon Global Funding
Assumed Ratings: A2/A+

Maturity (yrs)	**0.5**	**1**	**2**	**3**	**5**	**7**	**10**	**12**	**30**
Reference Treasury	6-mo LIBOR	1yr EDSF	2.25% 4/06	2.25% 2/07	3.125% 4/09	5.00% 2/11	4.0% 2/14	4.0% 2/14	5.375% 2/31
Benchmark Rate (%)	1.39	1.92	2.36	2.83	3.70	4.15	4.60	4.60	5.37
Re-offer spread (bps)	0	15	75	90	85	100	110	130	145
Re-offer yield (%)	1.39	2.07	3.11	3.73	4.55	5.15	5.70	5.90	6.82
Upfront fees (bps)	5	10	25	30	35	40	45	50	87.5
Amortized fees (bps)	5	10	13	11	8	7	6	6	7
All-in cost (%)	**1.44**	**2.17**	**3.24**	**3.83**	**4.63**	**5.22**	**5.76**	**5.96**	**6.89**
LIBOR equivalent	**L + 5**	**L + 25**	**L + 49**	**L + 46**	**L + 42**	**L + 52**	**L + 63**	**L + 64**	**L + 115**

Exhibit No. ___ (JHV-7)
Docket No. UT-023003

VERIZON - OTC
DEBT PORTFOLIO IRR ANALYSIS
May 6, 2004

Goal Seek Function:
Set cell Column E - "Total" Cell
To value Column B - Target Amount
By changing cell Cell B10 - IRR %

IRR (%)6.72%

Date (A)	Principal ($) (B)	Interest ($) (C)	 (D)	Cashflow ($) (E)	Discounted Cashflow ($)
5/15/2004	$0.00	$91,556,695.00		$91,556,695.00	$91,405,543.94
6/1/2004	$0.00	$43,840,625.00		$43,840,625.00	$43,639,873.96
6/15/2004	$0.00	$34,845,831.00		$34,845,831.00	$34,597,232.26
7/1/2004	$0.00	$4,672,500.00		$4,672,500.00	$4,625,558.33
7/15/2004	$0.00	$41,593,750.00		$41,593,750.00	$41,070,189.72
7/17/2004	$0.00	$29,375,000.00		$29,375,000.00	$28,994,595.03
7/31/2004	$0.00	$5,250,000.00		$5,250,000.00	$5,168,711.07
8/1/2004	$0.00	$19,690,000.00		$19,690,000.00	$19,385,127.80
8/15/2004	$50,000,000.00	$41,492,500.00		$91,492,500.00	$89,844,651.29
9/1/2004	$0.00	$37,393,750.00		$37,393,750.00	$36,612,558.06
9/15/2004	$0.00	$76,146,875.00		$76,146,875.00	$74,364,715.11
10/1/2004	$0.00	$72,718,750.00		$72,718,750.00	$70,808,526.82
10/15/2004	$0.00	$30,546,875.00		$30,546,875.00	$29,668,099.17
10/31/2004	$0.00	$5,250,000.00		$5,250,000.00	$5,084,011.90
11/1/2004	$0.00	$32,937,500.00		$32,937,500.00	$31,896,122.26
11/15/2004	$0.00	$91,556,695.00		$91,556,695.00	$88,434,381.42
12/1/2004	$0.00	$43,840,625.00		$43,840,625.00	$42,221,347.77
12/15/2004	$0.00	$34,845,831.00		$34,845,831.00	$33,472,639.64
1/1/2005	$0.00	$4,672,500.00		$4,672,500.00	$4,475,203.27
1/15/2005	$0.00	$41,593,750.00		$41,593,750.00	$39,735,191.83
1/17/2005	$0.00	$29,375,000.00		$29,375,000.00	$28,052,117.68
1/31/2005	$0.00	$5,250,000.00		$5,250,000.00	$5,000,700.68
2/1/2005	$0.00	$19,690,000.00		$19,690,000.00	$18,755,008.85
2/15/2005	$275,000,000.00	$39,742,500.00		$314,742,500.00	$299,027,223.06
3/1/2005	$200,000,000.00	$37,393,750.00		$237,393,750.00	$224,879,019.46
3/15/2005	$0.00	$76,146,875.00		$76,146,875.00	$71,947,469.45
4/1/2005	$0.00	$72,718,750.00		$72,718,750.00	$68,506,876.04
4/15/2005	$0.00	$30,546,875.00		$30,546,875.00	$28,703,729.39
4/30/2005	$0.00	$5,250,000.00		$5,250,000.00	$4,919,657.78
5/1/2005	$0.00	$32,937,500.00		$32,937,500.00	$30,859,329.97
5/15/2005	$0.00	$91,556,695.00		$91,556,695.00	$85,559,797.36
6/1/2005	$0.00	$43,840,625.00		$43,840,625.00	$40,848,931.16
6/15/2005	$0.00	$34,845,831.00		$34,845,831.00	$32,384,602.22
7/1/2005	$0.00	$4,672,500.00		$4,672,500.00	$4,329,735.55
7/15/2005	$100,000,000.00	$41,593,750.00		$141,593,750.00	$130,869,946.73
7/17/2005	$0.00	$29,375,000.00		$29,375,000.00	$27,140,275.83
7/31/2005	$0.00	$5,250,000.00		$5,250,000.00	$4,838,151.52
8/1/2005	$0.00	$19,690,000.00		$19,690,000.00	$18,145,372.09
8/15/2005	$0.00	$30,723,750.00		$30,723,750.00	$28,240,876.08
9/1/2005	$0.00	$30,893,750.00		$30,893,750.00	$28,313,847.65
9/15/2005	$0.00	$76,146,875.00		$76,146,875.00	$69,608,797.03
10/1/2005	$0.00	$72,718,750.00		$72,718,750.00	$66,280,041.06
10/15/2005	$0.00	$30,546,875.00		$30,546,875.00	$27,770,706.72
10/31/2005	$0.00	$5,250,000.00		$5,250,000.00	$4,758,869.20
11/1/2005	$0.00	$32,937,500.00		$32,937,500.00	$29,856,238.90
11/15/2005	$100,000,000.00	$91,556,695.00		$191,556,695.00	$173,191,103.93
12/1/2005	$250,000,000.00	$43,840,625.00		$293,840,625.00	$264,889,293.24
12/15/2005	$0.00	$34,845,831.00		$34,845,831.00	$31,331,931.75
1/1/2006	$0.00	$4,672,500.00		$4,672,500.00	$4,188,996.30
1/15/2006	$150,000,000.00	$38,531,250.00		$188,531,250.00	$168,588,440.65
1/17/2006	$0.00	$29,375,000.00		$29,375,000.00	$26,258,073.64

Exhibit No. ___ (JHV-7)
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1/31/2006	$0.00	$5,250,000.00	$5,250,000.00	$4,680,886.07
2/1/2006	$150,000,000.00	$19,690,000.00	$169,690,000.00	$151,295,153.67
2/15/2006	$0.00	$30,723,750.00	$30,723,750.00	$27,322,898.58
3/1/2006	$0.00	$30,893,750.00	$30,893,750.00	$27,393,498.19
3/15/2006	$0.00	$76,146,875.00	$76,146,875.00	$67,346,143.80
4/1/2006	$0.00	$72,718,750.00	$72,718,750.00	$64,125,589.97
4/15/2006	$0.00	$30,546,875.00	$30,546,875.00	$26,868,012.21
4/30/2006	$0.00	$5,250,000.00	$5,250,000.00	$4,605,026.17
5/1/2006	$0.00	$32,937,500.00	$32,937,500.00	$28,885,753.59
5/15/2006	$0.00	$88,431,695.00	$88,431,695.00	$77,354,360.37
6/1/2006	$0.00	$35,665,625.00	$35,665,625.00	$31,106,490.04
6/15/2006	$0.00	$34,845,831.00	$34,845,831.00	$30,313,478.63
7/1/2006	$0.00	$4,672,500.00	$4,672,500.00	$4,052,831.81
7/15/2006	$0.00	$34,031,250.00	$34,031,250.00	$29,442,247.09
7/17/2006	$0.00	$29,375,000.00	$29,375,000.00	$25,404,547.69
7/31/2006	$0.00	$5,250,000.00	$5,250,000.00	$4,528,732.57
8/1/2006	$0.00	$14,440,000.00	$14,440,000.00	$12,456,171.10
8/15/2006	$0.00	$30,723,750.00	$30,723,750.00	$26,434,760.20
9/1/2006	$150,000,000.00	$30,893,750.00	$180,893,750.00	$155,184,747.83
9/15/2006	$0.00	$76,146,875.00	$76,146,875.00	$65,157,038.74
10/1/2006	$0.00	$72,718,750.00	$72,718,750.00	$62,041,169.91
10/15/2006	$0.00	$30,546,875.00	$30,546,875.00	$25,994,660.03
10/31/2006	$0.00	$5,250,000.00	$5,250,000.00	$4,454,520.66
11/1/2006	$0.00	$32,937,500.00	$32,937,500.00	$27,946,814.17
11/15/2006	$0.00	$88,431,695.00	$88,431,695.00	$74,839,935.46
12/1/2006	$0.00	$35,665,625.00	$35,665,625.00	$30,095,364.96
12/15/2006	$0.00	$34,845,831.00	$34,845,831.00	$29,328,130.61
1/1/2007	$150,000,000.00	$4,672,500.00	$154,672,500.00	$129,798,890.84
1/15/2007	$0.00	$34,031,250.00	$34,031,250.00	$28,485,218.69
1/17/2007	$0.00	$29,375,000.00	$29,375,000.00	$24,578,765.83
1/31/2007	$0.00	$5,250,000.00	$5,250,000.00	$4,381,524.86
2/1/2007	$0.00	$14,440,000.00	$14,440,000.00	$12,051,279.81
2/15/2007	$0.00	$30,723,750.00	$30,723,750.00	$25,575,490.99
3/1/2007	$0.00	$25,362,500.00	$25,362,500.00	$21,050,680.41
3/15/2007	$275,000,000.00	$76,146,875.00	$351,146,875.00	$290,701,093.91
4/1/2007	$0.00	$72,718,750.00	$72,718,750.00	$60,024,504.49
4/15/2007	$0.00	$30,546,875.00	$30,546,875.00	$25,149,696.40
4/30/2007	$0.00	$5,250,000.00	$5,250,000.00	$4,310,516.51
5/1/2007	$0.00	$32,937,500.00	$32,937,500.00	$27,038,395.23
5/15/2007	$0.00	$88,431,695.00	$88,431,695.00	$72,407,242.63
6/1/2007	$0.00	$35,665,625.00	$35,665,625.00	$29,117,106.79
6/15/2007	$350,000,000.00	$34,845,831.00	$384,845,831.00	$313,378,319.23
7/15/2007	$150,000,000.00	$34,031,250.00	$184,031,250.00	$149,032,791.95
7/17/2007	$0.00	$29,375,000.00	$29,375,000.00	$23,779,826.24
7/31/2007	$0.00	$5,250,000.00	$5,250,000.00	$4,239,102.18
8/1/2007	$0.00	$14,440,000.00	$14,440,000.00	$11,659,549.62
8/15/2007	$0.00	$30,723,750.00	$30,723,750.00	$24,744,152.58
9/1/2007	$0.00	$25,362,500.00	$25,362,500.00	$20,366,422.21
9/15/2007	$0.00	$65,628,125.00	$65,628,125.00	$52,564,974.71
10/1/2007	$0.00	$72,718,750.00	$72,718,750.00	$58,073,391.35
10/15/2007	$0.00	$30,546,875.00	$30,546,875.00	$24,332,198.55
10/31/2007	$0.00	$5,250,000.00	$5,250,000.00	$4,169,636.42
11/1/2007	$0.00	$32,937,500.00	$32,937,500.00	$26,159,504.71
11/15/2007	$0.00	$88,431,695.00	$88,431,695.00	$70,053,625.15
12/1/2007	$0.00	$35,665,625.00	$35,665,625.00	$28,170,647.17
12/15/2007	$0.00	$23,173,956.00	$23,173,956.00	$18,257,064.24
1/15/2008	$0.00	$28,500,000.00	$28,500,000.00	$22,329,743.09
1/17/2008	$0.00	$29,375,000.00	$29,375,000.00	$23,006,856.40
1/31/2008	$0.00	$5,250,000.00	$5,250,000.00	$4,101,308.99
2/1/2008	$0.00	$14,440,000.00	$14,440,000.00	$11,280,552.73
2/15/2008	$125,000,000.00	$30,723,750.00	$155,723,750.00	$121,339,393.75
3/1/2008	$0.00	$25,362,500.00	$25,362,500.00	$19,704,406.02
3/15/2008	$0.00	$65,628,125.00	$65,628,125.00	$50,856,335.64
4/1/2008	$0.00	$72,718,750.00	$72,718,750.00	$56,185,699.68
4/15/2008	$250,000,000.00	$30,546,875.00	$280,546,875.00	$216,206,429.31
4/30/2008	$0.00	$5,250,000.00	$5,250,000.00	$4,034,841.91
5/1/2008	$100,000,000.00	$32,937,500.00	$132,937,500.00	$102,149,206.32
5/15/2008	$0.00	$88,431,695.00	$88,431,695.00	$67,776,512.66
6/1/2008	$0.00	$35,665,625.00	$35,665,625.00	$27,254,952.48

Exhibit No. ___ (JHV-7)
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6/15/2008	$0.00	$23,173,956.00	$23,173,956.00	$17,663,613.31
7/15/2008	$0.00	$28,500,000.00	$28,500,000.00	$21,603,908.61
7/17/2008	$0.00	$29,375,000.00	$29,375,000.00	$22,259,012.16
7/31/2008	$0.00	$5,250,000.00	$5,250,000.00	$3,967,994.81
8/1/2008	$0.00	$14,440,000.00	$14,440,000.00	$10,913,875.24
8/15/2008	$0.00	$26,973,750.00	$26,973,750.00	$20,334,659.29
9/1/2008	$0.00	$25,362,500.00	$25,362,500.00	$19,063,908.84
9/15/2008	$0.00	$65,628,125.00	$65,628,125.00	$49,203,236.37
10/1/2008	$0.00	$72,718,750.00	$72,718,750.00	$54,359,367.95
10/15/2008	$200,000,000.00	$23,046,875.00	$223,046,875.00	$166,305,999.53
10/31/2008	$0.00	$5,250,000.00	$5,250,000.00	$3,902,971.66
11/1/2008	$250,000,000.00	$29,437,500.00	$279,437,500.00	$207,740,312.94
11/15/2008	$250,000,000.00	$88,431,695.00	$338,431,695.00	$250,952,140.14
12/1/2008	$0.00	$35,665,625.00	$35,665,625.00	$26,369,022.70
12/15/2008	$0.00	$23,173,956.00	$23,173,956.00	$17,089,452.67
1/15/2009	$225,000,000.00	$28,500,000.00	$253,500,000.00	$185,914,832.63
1/17/2009	$0.00	$29,375,000.00	$29,375,000.00	$21,535,476.80
1/31/2009	$0.00	$5,250,000.00	$5,250,000.00	$3,839,014.04
2/1/2009	$0.00	$14,440,000.00	$14,440,000.00	$10,559,116.71
2/15/2009	$0.00	$26,973,750.00	$26,973,750.00	$19,673,675.56
3/1/2009	$0.00	$25,362,500.00	$25,362,500.00	$18,444,231.20
3/15/2009	$0.00	$65,628,125.00	$65,628,125.00	$47,603,871.54
4/1/2009	$0.00	$72,718,750.00	$72,718,750.00	$52,592,401.64
4/15/2009	$200,000,000.00	$17,496,875.00	$217,496,875.00	$156,896,552.23
4/30/2009	$0.00	$5,250,000.00	$5,250,000.00	$3,776,797.78
5/1/2009	$0.00	$20,812,500.00	$20,812,500.00	$14,969,557.06
5/15/2009	$0.00	$81,369,195.00	$81,369,195.00	$58,375,215.80
6/1/2009	$0.00	$35,665,625.00	$35,665,625.00	$25,511,890.31
6/15/2009	$0.00	$23,173,956.00	$23,173,956.00	$16,533,955.27
7/15/2009	$0.00	$22,312,500.00	$22,312,500.00	$15,831,895.50
7/17/2009	$0.00	$29,375,000.00	$29,375,000.00	$20,835,460.17
7/31/2009	$0.00	$5,250,000.00	$5,250,000.00	$3,714,225.82
8/1/2009	$0.00	$14,440,000.00	$14,440,000.00	$10,215,889.69
8/15/2009	$0.00	$26,973,750.00	$26,973,750.00	$19,034,177.29
9/1/2009	$300,000,000.00	$25,362,500.00	$325,362,500.00	$228,920,454.20
9/15/2009	$0.00	$65,628,125.00	$65,628,125.00	$46,056,494.51
10/1/2009	$0.00	$72,718,750.00	$72,718,750.00	$50,882,871.05
10/15/2009	$0.00	$11,621,875.00	$11,621,875.00	$8,111,201.38
10/31/2009	$0.00	$5,250,000.00	$5,250,000.00	$3,653,361.16
11/1/2009	$0.00	$20,812,500.00	$20,812,500.00	$14,482,967.46
11/15/2009	$0.00	$81,369,195.00	$81,369,195.00	$56,477,713.24
12/1/2009	$0.00	$35,665,625.00	$35,665,625.00	$24,682,619.25
12/15/2009	$0.00	$23,173,956.00	$23,173,956.00	$15,996,514.48
1/15/2010	$250,000,000.00	$22,312,500.00	$272,312,500.00	$186,939,408.19
1/17/2010	$0.00	$29,375,000.00	$29,375,000.00	$20,158,197.76
1/31/2010	$0.00	$5,250,000.00	$5,250,000.00	$3,593,493.88
2/1/2010	$0.00	$14,440,000.00	$14,440,000.00	$9,883,819.37
2/15/2010	$200,000,000.00	$26,973,750.00	$226,973,750.00	$154,959,076.69
3/1/2010	$0.00	$15,312,500.00	$15,312,500.00	$10,423,457.72
3/15/2010	$0.00	$65,628,125.00	$65,628,125.00	$44,559,415.40
4/1/2010	$0.00	$72,718,750.00	$72,718,750.00	$49,228,909.24
4/15/2010	$0.00	$11,621,875.00	$11,621,875.00	$7,847,544.53
4/30/2010	$0.00	$5,250,000.00	$5,250,000.00	$3,535,256.61
5/1/2010	$0.00	$20,812,500.00	$20,812,500.00	$14,012,194.59
5/15/2010	$0.00	$81,369,195.00	$81,369,195.00	$54,641,889.53
6/1/2010	$175,000,000.00	$35,665,625.00	$210,665,625.00	$141,053,441.26
6/15/2010	$0.00	$23,173,956.00	$23,173,956.00	$15,476,543.34
7/15/2010	$0.00	$14,656,250.00	$14,656,250.00	$9,734,300.65
7/17/2010	$0.00	$29,375,000.00	$29,375,000.00	$19,502,949.96
7/31/2010	$0.00	$5,250,000.00	$5,250,000.00	$3,476,686.37
8/1/2010	$0.00	$14,440,000.00	$14,440,000.00	$9,562,543.08
8/15/2010	$0.00	$20,598,750.00	$20,598,750.00	$13,606,012.28
9/1/2010	$0.00	$15,312,500.00	$15,312,500.00	$10,084,640.34
9/15/2010	$0.00	$65,628,125.00	$65,628,125.00	$43,110,999.26
10/1/2010	$0.00	$72,718,750.00	$72,718,750.00	$47,628,709.91
10/15/2010	$0.00	$11,621,875.00	$11,621,875.00	$7,592,457.92
10/31/2010	$0.00	$5,250,000.00	$5,250,000.00	$3,419,714.24
11/1/2010	$0.00	$20,812,500.00	$20,812,500.00	$13,556,724.33
11/15/2010	$150,000,000.00	$81,369,195.00	$231,369,195.00	$150,321,060.14

12/1/2010	$0.00	$30,153,125.00	$30,153,125.00	$19,533,089.63
12/15/2010	$0.00	$23,173,956.00	$23,173,956.00	$14,973,474.02
1/15/2011	$0.00	$14,656,250.00	$14,656,250.00	$9,417,884.51
1/17/2011	$0.00	$29,375,000.00	$29,375,000.00	$18,869,001.17
1/31/2011	$0.00	$5,250,000.00	$5,250,000.00	$3,363,675.72
2/1/2011	$0.00	$14,440,000.00	$14,440,000.00	$9,251,709.97
2/15/2011	$0.00	$20,598,750.00	$20,598,750.00	$13,163,745.09
3/1/2011	$0.00	$15,312,500.00	$15,312,500.00	$9,756,836.31
3/15/2011	$0.00	$65,628,125.00	$65,628,125.00	$41,709,664.29
4/1/2011	$0.00	$72,718,750.00	$72,718,750.00	$46,080,525.50
4/15/2011	$0.00	$11,621,875.00	$11,621,875.00	$7,345,662.97
4/30/2011	$0.00	$5,250,000.00	$5,250,000.00	$3,309,162.94
5/1/2011	$0.00	$20,812,500.00	$20,812,500.00	$13,116,059.25
5/15/2011	$0.00	$74,900,445.00	$74,900,445.00	$47,081,175.47
6/1/2011	$0.00	$30,153,125.00	$30,153,125.00	$18,898,161.14
6/15/2011	$0.00	$23,173,956.00	$23,173,956.00	$14,486,757.10
7/15/2011	$0.00	$14,656,250.00	$14,656,250.00	$9,111,753.57
7/17/2011	$0.00	$29,375,000.00	$29,375,000.00	$18,255,659.06
7/31/2011	$0.00	$5,250,000.00	$5,250,000.00	$3,254,338.51
8/1/2011	$0.00	$14,440,000.00	$14,440,000.00	$8,950,980.58
8/15/2011	$0.00	$20,598,750.00	$20,598,750.00	$12,735,853.91
9/1/2011	$0.00	$15,312,500.00	$15,312,500.00	$9,439,687.65
9/15/2011	$1,000,000,000.00	$65,628,125.00	$1,065,628,125.00	$655,240,867.91
10/1/2011	$0.00	$72,718,750.00	$72,718,750.00	$44,582,665.25
10/15/2011	$0.00	$11,621,875.00	$11,621,875.00	$7,106,890.16
10/31/2011	$0.00	$5,250,000.00	$5,250,000.00	$3,201,009.97
11/1/2011	$0.00	$20,812,500.00	$20,812,500.00	$12,689,718.11
11/15/2011	$1,000,000,000.00	$74,900,445.00	$1,074,900,445.00	$653,701,899.56
12/1/2011	$0.00	$30,153,125.00	$30,153,125.00	$18,283,871.18
12/15/2011	$0.00	$23,173,956.00	$23,173,956.00	$14,015,861.04
1/15/2012	$0.00	$14,656,250.00	$14,656,250.00	$8,815,573.49
1/17/2012	$1,000,000,000.00	$29,375,000.00	$1,029,375,000.00	$618,930,468.46
1/31/2012	$0.00	$5,250,000.00	$5,250,000.00	$3,148,555.33
2/1/2012	$0.00	$14,440,000.00	$14,440,000.00	$8,660,026.47
2/15/2012	$0.00	$20,598,750.00	$20,598,750.00	$12,321,871.45
3/1/2012	$500,000,000.00	$15,312,500.00	$515,312,500.00	$307,348,292.37
3/15/2012	$0.00	$33,128,125.00	$33,128,125.00	$19,707,918.78
4/1/2012	$1,000,000,000.00	$72,718,750.00	$1,072,718,750.00	$636,288,537.59
4/15/2012	$0.00	$11,621,875.00	$11,621,875.00	$6,875,878.73
4/30/2012	$0.00	$5,250,000.00	$5,250,000.00	$3,097,528.87
5/1/2012	$0.00	$20,812,500.00	$20,812,500.00	$12,277,235.31
5/15/2012	$0.00	$46,650,445.00	$46,650,445.00	$27,448,328.33
6/1/2012	$0.00	$30,153,125.00	$30,153,125.00	$17,689,548.88
6/15/2012	$0.00	$23,173,956.00	$23,173,956.00	$13,560,271.60
7/15/2012	$0.00	$14,656,250.00	$14,656,250.00	$8,529,020.83
7/31/2012	$0.00	$5,250,000.00	$5,250,000.00	$3,046,210.67
8/1/2012	$0.00	$14,440,000.00	$14,440,000.00	$8,378,529.91
8/15/2012	$0.00	$20,598,750.00	$20,598,750.00	$11,921,345.60
9/15/2012	$0.00	$33,128,125.00	$33,128,125.00	$19,067,307.42
10/1/2012	$0.00	$38,343,750.00	$38,343,750.00	$22,004,495.57
10/15/2012	$0.00	$11,621,875.00	$11,621,875.00	$6,652,376.39
10/31/2012	$0.00	$5,250,000.00	$5,250,000.00	$2,996,292.71
11/1/2012	$0.00	$20,812,500.00	$20,812,500.00	$11,878,160.37
11/15/2012	$0.00	$46,650,445.00	$46,650,445.00	$26,556,112.82
12/1/2012	$100,000,000.00	$30,153,125.00	$130,153,125.00	$73,873,322.93
12/15/2012	$0.00	$23,173,956.00	$23,173,956.00	$13,119,491.21
1/15/2013	$350,000,000.00	$14,656,250.00	$364,656,250.00	$205,309,278.75
1/31/2013	$0.00	$5,250,000.00	$5,250,000.00	$2,947,192.75
2/1/2013	$0.00	$14,440,000.00	$14,440,000.00	$8,106,183.48
2/15/2013	$0.00	$20,598,750.00	$20,598,750.00	$11,533,838.96
3/15/2013	$1,000,000,000.00	$33,128,125.00	$1,033,128,125.00	$575,301,229.29
4/1/2013	$0.00	$38,343,750.00	$38,343,750.00	$21,289,233.35
4/15/2013	$0.00	$11,621,875.00	$11,621,875.00	$6,436,139.05
4/30/2013	$0.00	$5,250,000.00	$5,250,000.00	$2,899,429.63
5/1/2013	$100,000,000.00	$20,812,500.00	$120,812,500.00	$66,709,150.48
5/15/2013	$0.00	$46,650,445.00	$46,650,445.00	$25,692,899.02
6/1/2013	$0.00	$26,340,625.00	$26,340,625.00	$14,464,642.86
6/15/2013	$100,000,000.00	$23,173,956.00	$123,173,956.00	$67,465,898.70
7/15/2013	$0.00	$3,937,500.00	$3,937,500.00	$2,144,835.99

7/31/2013	$0.00	$5,250,000.00	$5,250,000.00	$2,851,393.43
8/1/2013	$0.00	$14,440,000.00	$14,440,000.00	$7,842,689.74
8/15/2013	$0.00	$20,598,750.00	$20,598,750.00	$11,158,928.33
9/15/2013	$0.00	$10,003,125.00	$10,003,125.00	$5,389,213.86
10/1/2013	$300,000,000.00	$38,343,750.00	$338,343,750.00	$181,749,071.67
10/15/2013	$0.00	$11,621,875.00	$11,621,875.00	$6,226,930.57
10/31/2013	$0.00	$5,250,000.00	$5,250,000.00	$2,804,667.92
11/1/2013	$0.00	$17,312,500.00	$17,312,500.00	$9,248,726.36
11/15/2013	$0.00	$46,650,445.00	$46,650,445.00	$24,857,744.22
12/1/2013	$0.00	$26,340,625.00	$26,340,625.00	$13,994,465.63
12/15/2013	$0.00	$19,673,956.00	$19,673,956.00	$10,425,711.92
1/15/2014	$0.00	$3,937,500.00	$3,937,500.00	$2,075,117.50
1/31/2014	$0.00	$5,250,000.00	$5,250,000.00	$2,758,708.10
2/1/2014	$0.00	$14,440,000.00	$14,440,000.00	$7,587,760.94
2/15/2014	$0.00	$20,598,750.00	$20,598,750.00	$10,796,204.27
3/15/2014	$0.00	$10,003,125.00	$10,003,125.00	$5,214,035.97
4/1/2014	$0.00	$31,218,750.00	$31,218,750.00	$16,224,755.38
4/15/2014	$0.00	$11,621,875.00	$11,621,875.00	$6,024,522.47
4/30/2014	$0.00	$5,250,000.00	$5,250,000.00	$2,713,999.62
5/1/2014	$0.00	$17,312,500.00	$17,312,500.00	$8,948,093.94
5/15/2014	$0.00	$46,650,445.00	$46,650,445.00	$24,049,736.36
6/1/2014	$0.00	$26,340,625.00	$26,340,625.00	$13,539,571.65
6/15/2014	$0.00	$19,673,956.00	$19,673,956.00	$10,086,821.27
7/15/2014	$0.00	$3,937,500.00	$3,937,500.00	$2,007,665.23
7/31/2014	$0.00	$5,250,000.00	$5,250,000.00	$2,669,035.53
8/1/2014	$0.00	$14,440,000.00	$14,440,000.00	$7,341,118.67
8/15/2014	$0.00	$20,598,750.00	$20,598,750.00	$10,445,270.66
9/15/2014	$0.00	$10,003,125.00	$10,003,125.00	$5,044,552.29
10/1/2014	$0.00	$31,218,750.00	$31,218,750.00	$15,697,365.21
10/15/2014	$0.00	$11,621,875.00	$11,621,875.00	$5,828,693.69
10/31/2014	$0.00	$5,250,000.00	$5,250,000.00	$2,625,298.30
11/1/2014	$0.00	$17,312,500.00	$17,312,500.00	$8,657,233.67
11/15/2014	$0.00	$46,650,445.00	$46,650,445.00	$23,267,993.01
12/1/2014	$0.00	$26,340,625.00	$26,340,625.00	$13,099,464.13
12/15/2014	$0.00	$19,673,956.00	$19,673,956.00	$9,758,946.35
1/15/2015	$0.00	$3,937,500.00	$3,937,500.00	$1,942,405.51
1/31/2015	$0.00	$5,250,000.00	$5,250,000.00	$2,582,277.79
2/1/2015	$0.00	$14,440,000.00	$14,440,000.00	$7,102,493.57
2/15/2015	$0.00	$20,598,750.00	$20,598,750.00	$10,105,744.25
3/15/2015	$0.00	$10,003,125.00	$10,003,125.00	$4,880,577.72
4/1/2015	$0.00	$31,218,750.00	$31,218,750.00	$15,187,118.01
4/15/2015	$0.00	$11,621,875.00	$11,621,875.00	$5,639,230.39
4/30/2015	$0.00	$5,250,000.00	$5,250,000.00	$2,540,428.59
5/1/2015	$0.00	$17,312,500.00	$17,312,500.00	$8,375,827.89
5/15/2015	$0.00	$46,650,445.00	$46,650,445.00	$22,511,660.46
6/1/2015	$0.00	$26,340,625.00	$26,340,625.00	$12,673,662.42
6/15/2015	$0.00	$19,673,956.00	$19,673,956.00	$9,441,729.10
7/15/2015	$0.00	$3,937,500.00	$3,937,500.00	$1,879,267.09
7/31/2015	$0.00	$5,250,000.00	$5,250,000.00	$2,498,340.13
8/1/2015	$0.00	$14,440,000.00	$14,440,000.00	$6,871,625.05
8/15/2015	$0.00	$20,598,750.00	$20,598,750.00	$9,777,254.23
9/15/2015	$0.00	$10,003,125.00	$10,003,125.00	$4,721,933.19
10/1/2015	$0.00	$31,218,750.00	$31,218,750.00	$14,693,456.53
10/15/2015	$0.00	$11,621,875.00	$11,621,875.00	$5,455,925.64
10/31/2015	$0.00	$5,250,000.00	$5,250,000.00	$2,457,400.07
11/1/2015	$0.00	$17,312,500.00	$17,312,500.00	$8,103,569.29
11/15/2015	$0.00	$46,650,445.00	$46,650,445.00	$21,779,912.70
12/1/2015	$0.00	$26,340,625.00	$26,340,625.00	$12,261,701.51
12/15/2015	$0.00	$19,673,956.00	$19,673,956.00	$9,134,823.08
1/15/2016	$0.00	$3,937,500.00	$3,937,500.00	$1,818,180.99
1/31/2016	$0.00	$5,250,000.00	$5,250,000.00	$2,417,130.89
2/1/2016	$0.00	$14,440,000.00	$14,440,000.00	$6,648,260.97
2/15/2016	$0.00	$20,598,750.00	$20,598,750.00	$9,459,441.88
3/15/2016	$0.00	$10,003,125.00	$10,003,125.00	$4,568,445.44
4/1/2016	$0.00	$31,218,750.00	$31,218,750.00	$14,215,841.66
4/15/2016	$0.00	$11,621,875.00	$11,621,875.00	$5,278,579.27
4/30/2016	$0.00	$5,250,000.00	$5,250,000.00	$2,377,958.12
5/1/2016	$0.00	$17,312,500.00	$17,312,500.00	$7,840,160.52
5/15/2016	$0.00	$46,650,445.00	$46,650,445.00	$21,071,950.60

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6/1/2016	$0.00	$26,340,625.00	$26,340,625.00	$11,863,131.50
6/15/2016	$0.00	$19,673,956.00	$19,673,956.00	$8,837,893.12
7/15/2016	$0.00	$3,937,500.00	$3,937,500.00	$1,759,080.51
7/31/2016	$0.00	$5,250,000.00	$5,250,000.00	$2,338,561.38
8/1/2016	$0.00	$14,440,000.00	$14,440,000.00	$6,432,157.41
8/15/2016	$0.00	$20,598,750.00	$20,598,750.00	$9,151,960.10
9/15/2016	$0.00	$10,003,125.00	$10,003,125.00	$4,419,946.86
10/1/2016	$0.00	$31,218,750.00	$31,218,750.00	$13,753,751.79
10/15/2016	$0.00	$11,621,875.00	$11,621,875.00	$5,106,997.59
10/31/2016	$0.00	$5,250,000.00	$5,250,000.00	$2,300,239.60
11/1/2016	$0.00	$17,312,500.00	$17,312,500.00	$7,585,313.93
11/15/2016	$0.00	$46,650,445.00	$46,650,445.00	$20,387,001.01
12/1/2016	$0.00	$26,340,625.00	$26,340,625.00	$11,477,517.13
12/15/2016	$0.00	$19,673,956.00	$19,673,956.00	$8,550,614.96
1/15/2017	$0.00	$3,937,500.00	$3,937,500.00	$1,701,901.11
1/31/2017	$0.00	$5,250,000.00	$5,250,000.00	$2,262,545.80
2/1/2017	$0.00	$14,440,000.00	$14,440,000.00	$6,223,078.35
2/15/2017	$0.00	$20,598,750.00	$20,598,750.00	$8,854,473.10
3/15/2017	$0.00	$10,003,125.00	$10,003,125.00	$4,276,275.26
4/1/2017	$0.00	$31,218,750.00	$31,218,750.00	$13,306,682.27
4/15/2017	$0.00	$11,621,875.00	$11,621,875.00	$4,940,993.22
4/30/2017	$0.00	$5,250,000.00	$5,250,000.00	$2,225,878.28
5/1/2017	$0.00	$17,312,500.00	$17,312,500.00	$7,338,751.20
5/15/2017	$0.00	$46,650,445.00	$46,650,445.00	$19,724,315.90
6/1/2017	$0.00	$26,340,625.00	$26,340,625.00	$11,104,437.26
6/15/2017	$0.00	$19,673,956.00	$19,673,956.00	$8,272,674.85
7/15/2017	$0.00	$3,937,500.00	$3,937,500.00	$1,646,580.35
7/31/2017	$0.00	$5,250,000.00	$5,250,000.00	$2,189,001.12
8/1/2017	$0.00	$14,440,000.00	$14,440,000.00	$6,020,795.47
8/15/2017	$0.00	$20,598,750.00	$20,598,750.00	$8,566,656.00
9/15/2017	$0.00	$10,003,125.00	$10,003,125.00	$4,137,273.75
10/1/2017	$0.00	$31,218,750.00	$31,218,750.00	$12,874,144.88
10/15/2017	$0.00	$11,621,875.00	$11,621,875.00	$4,780,384.87
10/31/2017	$0.00	$5,250,000.00	$5,250,000.00	$2,153,130.17
11/1/2017	$0.00	$17,312,500.00	$17,312,500.00	$7,100,203.06
11/15/2017	$0.00	$46,650,445.00	$46,650,445.00	$19,083,171.55
12/1/2017	$0.00	$26,340,625.00	$26,340,625.00	$10,743,484.45
12/15/2017	$0.00	$19,673,956.00	$19,673,956.00	$8,003,769.26
1/15/2018	$0.00	$3,937,500.00	$3,937,500.00	$1,593,057.79
1/31/2018	$0.00	$5,250,000.00	$5,250,000.00	$2,117,847.03
2/1/2018	$0.00	$14,440,000.00	$14,440,000.00	$5,825,087.84
2/15/2018	$0.00	$20,598,750.00	$20,598,750.00	$8,288,194.47
3/15/2018	$0.00	$10,003,125.00	$10,003,125.00	$4,002,790.52
4/1/2018	$0.00	$31,218,750.00	$31,218,750.00	$12,455,667.24
4/15/2018	$0.00	$11,621,875.00	$11,621,875.00	$4,624,997.13
4/30/2018	$0.00	$5,250,000.00	$5,250,000.00	$2,083,524.55
5/1/2018	$0.00	$17,312,500.00	$17,312,500.00	$6,869,409.00
5/15/2018	$0.00	$46,650,445.00	$46,650,445.00	$18,462,867.77
6/1/2018	$0.00	$26,340,625.00	$26,340,625.00	$10,394,264.51
6/15/2018	$0.00	$19,673,956.00	$19,673,956.00	$7,743,604.53
7/15/2018	$0.00	$3,937,500.00	$3,937,500.00	$1,541,275.01
7/31/2018	$0.00	$5,250,000.00	$5,250,000.00	$2,049,005.83
8/1/2018	$0.00	$14,440,000.00	$14,440,000.00	$5,635,741.75
8/15/2018	$0.00	$20,598,750.00	$20,598,750.00	$8,018,784.42
9/15/2018	$0.00	$10,003,125.00	$10,003,125.00	$3,872,678.71
10/1/2018	$0.00	$31,218,750.00	$31,218,750.00	$12,050,792.32
10/15/2018	$0.00	$11,621,875.00	$11,621,875.00	$4,474,660.32
10/31/2018	$0.00	$5,250,000.00	$5,250,000.00	$2,015,428.97
11/1/2018	$0.00	$17,312,500.00	$17,312,500.00	$6,646,116.95
11/15/2018	$0.00	$46,650,445.00	$46,650,445.00	$17,862,727.14
12/1/2018	$0.00	$26,340,625.00	$26,340,625.00	$10,056,396.06
12/15/2018	$0.00	$19,673,956.00	$19,673,956.00	$7,491,896.52
1/15/2019	$0.00	$3,937,500.00	$3,937,500.00	$1,491,175.44
1/31/2019	$0.00	$5,250,000.00	$5,250,000.00	$1,982,402.33
2/1/2019	$0.00	$14,440,000.00	$14,440,000.00	$5,452,550.40
2/15/2019	$0.00	$20,598,750.00	$20,598,750.00	$7,758,131.61
3/15/2019	$0.00	$10,003,125.00	$10,003,125.00	$3,746,796.21
4/1/2019	$0.00	$31,218,750.00	$31,218,750.00	$11,659,077.98
4/15/2019	$0.00	$11,621,875.00	$11,621,875.00	$4,329,210.25

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4/30/2019	$0.00	$5,250,000.00	$5,250,000.00	$1,950,274.90
5/1/2019	$0.00	$17,312,500.00	$17,312,500.00	$6,430,083.08
5/15/2019	$0.00	$46,650,445.00	$46,650,445.00	$17,282,094.25
6/1/2019	$0.00	$26,340,625.00	$26,340,625.00	$9,729,510.12
6/15/2019	$0.00	$19,673,956.00	$19,673,956.00	$7,248,370.35
7/15/2019	$0.00	$3,937,500.00	$3,937,500.00	$1,442,704.37
7/31/2019	$0.00	$5,250,000.00	$5,250,000.00	$1,917,963.79
8/1/2019	$0.00	$14,440,000.00	$14,440,000.00	$5,275,313.74
8/15/2019	$0.00	$20,598,750.00	$20,598,750.00	$7,505,951.39
9/15/2019	$15,000,000.00	$10,003,125.00	$25,003,125.00	$9,060,815.22
10/1/2019	$0.00	$31,218,750.00	$31,218,750.00	$11,280,096.42
10/15/2019	$0.00	$11,621,875.00	$11,621,875.00	$4,188,488.07
10/31/2019	$0.00	$5,250,000.00	$5,250,000.00	$1,886,534.30
11/1/2019	$0.00	$17,312,500.00	$17,312,500.00	$6,221,071.45
11/15/2019	$0.00	$46,650,445.00	$46,650,445.00	$16,720,334.99
12/1/2019	$0.00	$26,340,625.00	$26,340,625.00	$9,413,249.70
12/15/2019	$0.00	$19,673,956.00	$19,673,956.00	$7,012,760.06
1/15/2020	$0.00	$3,937,500.00	$3,937,500.00	$1,395,808.86
1/31/2020	$0.00	$5,250,000.00	$5,250,000.00	$1,855,619.85
2/1/2020	$0.00	$14,440,000.00	$14,440,000.00	$5,103,838.21
2/15/2020	$0.00	$20,598,750.00	$20,598,750.00	$7,261,968.36
3/15/2020	$0.00	$9,375,000.00	$9,375,000.00	$3,286,948.22
4/1/2020	$0.00	$31,218,750.00	$31,218,750.00	$10,913,433.76
4/15/2020	$0.00	$11,621,875.00	$11,621,875.00	$4,052,340.10
4/30/2020	$0.00	$5,250,000.00	$5,250,000.00	$1,825,547.09
5/1/2020	$0.00	$17,312,500.00	$17,312,500.00	$6,018,853.80
5/15/2020	$0.00	$46,650,445.00	$46,650,445.00	$16,176,835.87
6/1/2020	$0.00	$26,340,625.00	$26,340,625.00	$9,107,269.41
6/15/2020	$0.00	$19,673,956.00	$19,673,956.00	$6,784,808.35
7/15/2020	$0.00	$3,937,500.00	$3,937,500.00	$1,350,437.71
7/31/2020	$0.00	$5,250,000.00	$5,250,000.00	$1,795,302.41
8/1/2020	$0.00	$14,440,000.00	$14,440,000.00	$4,937,936.53
8/15/2020	$0.00	$20,598,750.00	$20,598,750.00	$7,025,916.07
9/15/2020	$0.00	$9,375,000.00	$9,375,000.00	$3,180,105.06
10/1/2020	$0.00	$31,218,750.00	$31,218,750.00	$10,558,689.57
10/15/2020	$0.00	$11,621,875.00	$11,621,875.00	$3,920,617.66
10/31/2020	$0.00	$5,250,000.00	$5,250,000.00	$1,765,882.96
11/1/2020	$0.00	$17,312,500.00	$17,312,500.00	$5,823,209.29
11/15/2020	$0.00	$46,650,445.00	$46,650,445.00	$15,651,003.33
12/1/2020	$0.00	$26,340,625.00	$26,340,625.00	$8,811,235.10
12/15/2020	$0.00	$19,673,956.00	$19,673,956.00	$6,564,266.28
1/15/2021	$0.00	$3,937,500.00	$3,937,500.00	$1,306,541.36
1/31/2021	$0.00	$5,250,000.00	$5,250,000.00	$1,736,945.61
2/1/2021	$0.00	$14,440,000.00	$14,440,000.00	$4,777,427.54
2/15/2021	$0.00	$20,598,750.00	$20,598,750.00	$6,797,536.72
3/15/2021	$0.00	$9,375,000.00	$9,375,000.00	$3,076,734.86
4/1/2021	$0.00	$31,218,750.00	$31,218,750.00	$10,215,476.45
4/15/2021	$0.00	$11,621,875.00	$11,621,875.00	$3,793,176.90
4/30/2021	$0.00	$5,250,000.00	$5,250,000.00	$1,708,796.13
5/1/2021	$0.00	$17,312,500.00	$17,312,500.00	$5,633,924.26
5/15/2021	$0.00	$46,650,445.00	$46,650,445.00	$15,142,263.14
6/1/2021	$0.00	$26,340,625.00	$26,340,625.00	$8,524,823.46
6/15/2021	$0.00	$19,673,956.00	$19,673,956.00	$6,350,892.98
7/15/2021	$0.00	$3,937,500.00	$3,937,500.00	$1,264,071.87
7/31/2021	$0.00	$5,250,000.00	$5,250,000.00	$1,680,485.71
8/1/2021	$0.00	$14,440,000.00	$14,440,000.00	$4,622,135.93
8/15/2021	$0.00	$20,598,750.00	$20,598,750.00	$6,576,580.91
9/15/2021	$0.00	$9,375,000.00	$9,375,000.00	$2,976,724.75
10/1/2021	$0.00	$31,218,750.00	$31,218,750.00	$9,883,419.55
10/15/2021	$0.00	$11,621,875.00	$11,621,875.00	$3,669,878.64
10/31/2021	$0.00	$5,250,000.00	$5,250,000.00	$1,652,947.75
11/1/2021	$0.00	$17,312,500.00	$17,312,500.00	$5,450,791.99
11/15/2021	$0.00	$46,650,445.00	$46,650,445.00	$14,650,059.68
12/1/2021	$0.00	$26,340,625.00	$26,340,625.00	$8,247,721.71
12/15/2021	$0.00	$19,673,956.00	$19,673,956.00	$6,144,455.45
1/15/2022	$100,000,000.00	$3,937,500.00	$103,937,500.00	$32,282,865.09
1/31/2022	$0.00	$5,250,000.00	$5,250,000.00	$1,625,861.06
2/1/2022	$0.00	$14,440,000.00	$14,440,000.00	$4,471,892.12
2/15/2022	$0.00	$20,598,750.00	$20,598,750.00	$6,362,807.32

3/15/2022	$0.00	$9,375,000.00	$9,375,000.00	$2,879,965.48
4/1/2022	$0.00	$31,218,750.00	$31,218,750.00	$9,562,156.26
4/15/2022	$0.00	$11,621,875.00	$11,621,875.00	$3,550,588.21
4/30/2022	$0.00	$5,250,000.00	$5,250,000.00	$1,599,511.85
5/1/2022	$0.00	$17,312,500.00	$17,312,500.00	$5,273,612.49
5/15/2022	$0.00	$46,650,445.00	$46,650,445.00	$14,173,855.43
6/1/2022	$200,000,000.00	$26,340,625.00	$226,340,625.00	$68,567,614.30
6/15/2022	$0.00	$19,673,956.00	$19,673,956.00	$5,944,728.22
7/31/2022	$0.00	$5,250,000.00	$5,250,000.00	$1,573,011.99
8/1/2022	$0.00	$14,440,000.00	$14,440,000.00	$4,326,532.03
8/15/2022	$0.00	$20,598,750.00	$20,598,750.00	$6,155,982.51
9/15/2022	$0.00	$9,375,000.00	$9,375,000.00	$2,786,351.41
10/1/2022	$0.00	$31,218,750.00	$31,218,750.00	$9,251,335.73
10/15/2022	$0.00	$11,621,875.00	$11,621,875.00	$3,435,175.36
10/31/2022	$0.00	$5,250,000.00	$5,250,000.00	$1,547,235.20
11/1/2022	$0.00	$17,312,500.00	$17,312,500.00	$5,102,192.25
11/15/2022	$0.00	$46,650,445.00	$46,650,445.00	$13,713,130.33
12/1/2022	$0.00	$18,340,625.00	$18,340,625.00	$5,375,504.93
12/15/2022	$0.00	$19,673,956.00	$19,673,956.00	$5,751,493.18
1/31/2023	$0.00	$5,250,000.00	$5,250,000.00	$1,521,880.80
2/1/2023	$0.00	$14,440,000.00	$14,440,000.00	$4,185,896.91
2/15/2023	$0.00	$20,598,750.00	$20,598,750.00	$5,955,880.59
3/15/2023	$0.00	$9,375,000.00	$9,375,000.00	$2,695,780.28
4/1/2023	$0.00	$31,218,750.00	$31,218,750.00	$8,950,618.50
4/15/2023	$0.00	$11,621,875.00	$11,621,875.00	$3,323,514.03
4/30/2023	$0.00	$5,250,000.00	$5,250,000.00	$1,497,216.73
5/1/2023	$250,000,000.00	$17,312,500.00	$267,312,500.00	$76,219,291.07
5/15/2023	$0.00	$46,650,445.00	$46,650,445.00	$13,267,381.23
6/1/2023	$0.00	$18,340,625.00	$18,340,625.00	$5,200,772.65
6/15/2023	$0.00	$19,673,956.00	$19,673,956.00	$5,564,539.31
7/31/2023	$0.00	$5,250,000.00	$5,250,000.00	$1,472,411.64
8/1/2023	$0.00	$14,440,000.00	$14,440,000.00	$4,049,833.17
8/15/2023	$0.00	$20,598,750.00	$20,598,750.00	$5,762,283.04
9/15/2023	$0.00	$9,375,000.00	$9,375,000.00	$2,608,153.20
10/1/2023	$250,000,000.00	$31,218,750.00	$281,218,750.00	$78,006,432.22
10/15/2023	$0.00	$11,621,875.00	$11,621,875.00	$3,215,482.29
10/31/2023	$0.00	$5,250,000.00	$5,250,000.00	$1,448,283.38
11/1/2023	$250,000,000.00	$8,375,000.00	$258,375,000.00	$71,276,231.87
11/15/2023	$0.00	$46,650,445.00	$46,650,445.00	$12,836,121.33
12/1/2023	$20,000,000.00	$18,340,625.00	$38,340,625.00	$10,518,686.98
12/15/2023	$0.00	$19,673,956.00	$19,673,956.00	$5,383,662.41
1/31/2024	$0.00	$5,250,000.00	$5,250,000.00	$1,424,550.50
2/1/2024	$0.00	$14,440,000.00	$14,440,000.00	$3,918,192.22
2/15/2024	$0.00	$20,598,750.00	$20,598,750.00	$5,574,978.44
3/15/2024	$0.00	$9,375,000.00	$9,375,000.00	$2,523,374.46
4/1/2024	$0.00	$22,625,000.00	$22,625,000.00	$6,071,882.16
4/15/2024	$0.00	$11,621,875.00	$11,621,875.00	$3,110,962.15
4/30/2024	$0.00	$5,250,000.00	$5,250,000.00	$1,401,463.79
5/15/2024	$0.00	$46,650,445.00	$46,650,445.00	$12,418,879.65
6/1/2024	$0.00	$17,640,625.00	$17,640,625.00	$4,682,361.24
6/15/2024	$0.00	$19,673,956.00	$19,673,956.00	$5,208,664.98
7/31/2024	$0.00	$5,250,000.00	$5,250,000.00	$1,378,245.09
8/1/2024	$0.00	$14,440,000.00	$14,440,000.00	$3,790,830.30
8/15/2024	$0.00	$20,598,750.00	$20,598,750.00	$5,393,762.22
9/15/2024	$0.00	$9,375,000.00	$9,375,000.00	$2,441,351.47
10/1/2024	$0.00	$22,625,000.00	$22,625,000.00	$5,874,513.95
10/15/2024	$0.00	$11,621,875.00	$11,621,875.00	$3,009,839.46
10/31/2024	$0.00	$5,250,000.00	$5,250,000.00	$1,355,659.92
11/15/2024	$0.00	$46,650,445.00	$46,650,445.00	$12,015,200.53
12/1/2024	$0.00	$17,640,625.00	$17,640,625.00	$4,530,159.79
12/15/2024	$100,000,000.00	$19,673,956.00	$119,673,956.00	$30,653,705.52
1/31/2025	$0.00	$5,250,000.00	$5,250,000.00	$1,333,444.85
2/1/2025	$0.00	$14,440,000.00	$14,440,000.00	$3,667,608.31
2/15/2025	$0.00	$20,598,750.00	$20,598,750.00	$5,218,436.48
3/15/2025	$0.00	$9,375,000.00	$9,375,000.00	$2,361,994.66
4/1/2025	$0.00	$22,625,000.00	$22,625,000.00	$5,683,561.24
4/15/2025	$0.00	$11,621,875.00	$11,621,875.00	$2,912,003.80
4/30/2025	$0.00	$5,250,000.00	$5,250,000.00	$1,311,834.63
5/15/2025	$0.00	$46,650,445.00	$46,650,445.00	$11,624,643.11

6/1/2025	$0.00	$17,640,625.00	$17,640,625.00	$4,382,905.69
6/15/2025	$0.00	$16,273,956.00	$16,273,956.00	$4,032,970.78
7/31/2025	$0.00	$5,250,000.00	$5,250,000.00	$1,290,100.85
8/1/2025	$0.00	$14,440,000.00	$14,440,000.00	$3,548,391.68
8/15/2025	$0.00	$20,598,750.00	$20,598,750.00	$5,048,809.76
9/15/2025	$0.00	$9,375,000.00	$9,375,000.00	$2,285,217.37
10/1/2025	$0.00	$22,625,000.00	$22,625,000.00	$5,498,815.51
10/15/2025	$100,000,000.00	$11,621,875.00	$111,621,875.00	$27,059,119.16
10/31/2025	$0.00	$5,250,000.00	$5,250,000.00	$1,268,960.10
11/15/2025	$0.00	$46,650,445.00	$46,650,445.00	$11,246,780.87
12/1/2025	$0.00	$17,640,625.00	$17,640,625.00	$4,240,438.13
12/15/2025	$0.00	$16,273,956.00	$16,273,956.00	$3,901,877.95
1/31/2026	$0.00	$5,250,000.00	$5,250,000.00	$1,248,165.77
2/1/2026	$0.00	$14,440,000.00	$14,440,000.00	$3,433,050.23
2/15/2026	$0.00	$20,598,750.00	$20,598,750.00	$4,884,696.80
3/15/2026	$250,000,000.00	$9,375,000.00	$259,375,000.00	$61,169,222.42
4/1/2026	$0.00	$22,625,000.00	$22,625,000.00	$5,320,074.99
4/15/2026	$0.00	$7,996,875.00	$7,996,875.00	$1,875,569.90
4/30/2026	$0.00	$5,250,000.00	$5,250,000.00	$1,227,937.61
5/15/2026	$200,000,000.00	$46,650,445.00	$246,650,445.00	$57,531,136.15
6/1/2026	$175,000,000.00	$17,640,625.00	$192,640,625.00	$44,801,571.34
6/15/2026	$0.00	$16,273,956.00	$16,273,956.00	$3,775,046.33
7/31/2026	$0.00	$5,250,000.00	$5,250,000.00	$1,207,593.80
8/1/2026	$0.00	$14,440,000.00	$14,440,000.00	$3,321,457.98
8/15/2026	$0.00	$20,598,750.00	$20,598,750.00	$4,725,918.38
10/1/2026	$0.00	$22,625,000.00	$22,625,000.00	$5,147,144.48
10/15/2026	$0.00	$7,996,875.00	$7,996,875.00	$1,814,603.98
10/31/2026	$0.00	$5,250,000.00	$5,250,000.00	$1,187,805.07
11/15/2026	$0.00	$39,025,445.00	$39,025,445.00	$8,806,787.48
12/1/2026	$0.00	$10,750,000.00	$10,750,000.00	$2,418,813.80
12/15/2026	$0.00	$16,273,956.00	$16,273,956.00	$3,652,337.40
1/31/2027	$0.00	$5,250,000.00	$5,250,000.00	$1,168,340.62
2/1/2027	$0.00	$14,440,000.00	$14,440,000.00	$3,213,493.07
2/15/2027	$0.00	$20,598,750.00	$20,598,750.00	$4,572,301.09
4/1/2027	$0.00	$22,625,000.00	$22,625,000.00	$4,979,835.12
4/15/2027	$0.00	$7,996,875.00	$7,996,875.00	$1,755,619.78
4/30/2027	$0.00	$5,250,000.00	$5,250,000.00	$1,149,406.13
5/15/2027	$200,000,000.00	$39,025,445.00	$239,025,445.00	$52,187,007.30
6/1/2027	$0.00	$10,750,000.00	$10,750,000.00	$2,340,189.58
6/15/2027	$0.00	$16,273,956.00	$16,273,956.00	$3,533,617.16
7/31/2027	$0.00	$5,250,000.00	$5,250,000.00	$1,130,363.39
8/1/2027	$0.00	$14,440,000.00	$14,440,000.00	$3,109,037.59
8/15/2027	$0.00	$20,598,750.00	$20,598,750.00	$4,423,677.18
10/1/2027	$0.00	$22,625,000.00	$22,625,000.00	$4,817,964.20
10/15/2027	$0.00	$7,996,875.00	$7,996,875.00	$1,698,552.87
10/31/2027	$0.00	$5,250,000.00	$5,250,000.00	$1,111,840.23
11/15/2027	$0.00	$32,275,445.00	$32,275,445.00	$6,817,719.06
12/1/2027	$0.00	$10,750,000.00	$10,750,000.00	$2,264,121.07
12/15/2027	$0.00	$16,273,956.00	$16,273,956.00	$3,418,755.96
1/31/2028	$0.00	$5,250,000.00	$5,250,000.00	$1,093,620.61
2/1/2028	$300,000,000.00	$14,440,000.00	$314,440,000.00	$65,500,583.96
2/15/2028	$200,000,000.00	$20,598,750.00	$220,598,750.00	$45,834,680.88
4/1/2028	$0.00	$22,625,000.00	$22,625,000.00	$4,661,354.94
4/15/2028	$100,000,000.00	$7,996,875.00	$107,996,875.00	$22,193,129.90
4/30/2028	$0.00	$5,250,000.00	$5,250,000.00	$1,075,897.06
5/15/2028	$0.00	$32,275,445.00	$32,275,445.00	$6,596,107.21
6/1/2028	$0.00	$10,750,000.00	$10,750,000.00	$2,190,525.19
6/15/2028	$0.00	$16,273,956.00	$16,273,956.00	$3,307,628.35
7/31/2028	$0.00	$5,250,000.00	$5,250,000.00	$1,058,072.17
8/1/2028	$0.00	$4,150,000.00	$4,150,000.00	$836,380.86
8/15/2028	$0.00	$13,868,750.00	$13,868,750.00	$2,787,899.34
10/1/2028	$0.00	$22,625,000.00	$22,625,000.00	$4,509,836.31
10/15/2028	$0.00	$4,746,875.00	$4,746,875.00	$943,764.78
10/31/2028	$0.00	$5,250,000.00	$5,250,000.00	$1,040,733.65
11/15/2028	$0.00	$32,275,445.00	$32,275,445.00	$6,381,698.92
12/1/2028	$125,000,000.00	$10,750,000.00	$135,750,000.00	$26,762,595.55
12/15/2028	$0.00	$16,273,956.00	$16,273,956.00	$3,200,112.97
1/31/2029	$0.00	$5,250,000.00	$5,250,000.00	$1,023,679.24
2/1/2029	$0.00	$4,150,000.00	$4,150,000.00	$809,194.07

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2/15/2029	$0.00	$13,868,750.00	$13,868,750.00	$2,697,277.90
4/1/2029	$0.00	$22,625,000.00	$22,625,000.00	$4,363,242.83
4/15/2029	$0.00	$4,746,875.00	$4,746,875.00	$913,087.45
4/30/2029	$0.00	$5,250,000.00	$5,250,000.00	$1,007,089.18
5/15/2029	$0.00	$32,275,445.00	$32,275,445.00	$6,174,260.03
6/1/2029	$0.00	$7,000,000.00	$7,000,000.00	$1,335,165.30
6/15/2029	$0.00	$16,273,956.00	$16,273,956.00	$3,096,092.41
7/31/2029	$0.00	$5,250,000.00	$5,250,000.00	$990,404.27
8/1/2029	$0.00	$4,150,000.00	$4,150,000.00	$782,890.99
8/15/2029	$0.00	$13,868,750.00	$13,868,750.00	$2,609,602.14
10/1/2029	$100,000,000.00	$22,625,000.00	$122,625,000.00	$22,879,599.67
10/15/2029	$100,000,000.00	$4,746,875.00	$104,746,875.00	$19,493,699.02
10/31/2029	$0.00	$5,250,000.00	$5,250,000.00	$974,174.61
11/15/2029	$498,900,000.00	$32,275,445.00	$531,175,445.00	$98,310,356.82
12/1/2029	$0.00	$7,000,000.00	$7,000,000.00	$1,291,765.38
12/15/2029	$0.00	$16,273,956.00	$16,273,956.00	$2,995,453.07
1/31/2030	$0.00	$5,250,000.00	$5,250,000.00	$958,210.90
2/1/2030	$0.00	$4,150,000.00	$4,150,000.00	$757,442.90
2/15/2030	$0.00	$13,868,750.00	$13,868,750.00	$2,524,776.30
4/1/2030	$0.00	$18,437,500.00	$18,437,500.00	$3,328,281.41
4/15/2030	$0.00	$646,875.00	$646,875.00	$116,472.17
4/30/2030	$0.00	$5,250,000.00	$5,250,000.00	$942,681.84
5/15/2030	$0.00	$12,650,000.00	$12,650,000.00	$2,265,167.97
6/1/2030	$0.00	$7,000,000.00	$7,000,000.00	$1,249,776.19
6/15/2030	$0.00	$16,273,956.00	$16,273,956.00	$2,898,085.04
7/31/2030	$0.00	$5,250,000.00	$5,250,000.00	$927,063.99
8/1/2030	$0.00	$4,150,000.00	$4,150,000.00	$732,822.01
8/15/2030	$0.00	$13,868,750.00	$13,868,750.00	$2,442,707.74
10/1/2030	$0.00	$18,437,500.00	$18,437,500.00	$3,220,094.70
10/15/2030	$0.00	$646,875.00	$646,875.00	$112,686.21
10/31/2030	$0.00	$5,250,000.00	$5,250,000.00	$911,872.28
11/15/2030	$0.00	$12,650,000.00	$12,650,000.00	$2,191,538.06
12/1/2030	$0.00	$7,000,000.00	$7,000,000.00	$1,209,151.87
12/15/2030	$174,975,000.00	$16,273,956.00	$191,248,956.00	$32,950,777.44
1/31/2031	$0.00	$5,250,000.00	$5,250,000.00	$896,929.52
2/1/2031	$0.00	$4,150,000.00	$4,150,000.00	$709,001.43
2/15/2031	$0.00	$13,868,750.00	$13,868,750.00	$2,363,306.85
4/1/2031	$0.00	$18,437,500.00	$18,437,500.00	$3,115,424.63
4/15/2031	$0.00	$646,875.00	$646,875.00	$109,023.31
4/30/2031	$0.00	$5,250,000.00	$5,250,000.00	$882,393.60
5/15/2031	$0.00	$12,650,000.00	$12,650,000.00	$2,120,301.51
6/1/2031	$0.00	$7,000,000.00	$7,000,000.00	$1,169,848.05
6/15/2031	$0.00	$8,968,750.00	$8,968,750.00	$1,495,020.39
7/31/2031	$0.00	$5,250,000.00	$5,250,000.00	$867,774.58
8/1/2031	$100,000,000.00	$4,150,000.00	$104,150,000.00	$17,214,994.69
8/15/2031	$125,000,000.00	$13,868,750.00	$138,868,750.00	$22,894,751.05
10/1/2031	$0.00	$18,437,500.00	$18,437,500.00	$3,014,156.89
10/15/2031	$15,000,000.00	$646,875.00	$15,646,875.00	$2,551,380.39
10/31/2031	$0.00	$5,250,000.00	$5,250,000.00	$853,554.44
11/15/2031	$100,000,000.00	$12,650,000.00	$112,650,000.00	$18,267,827.32
12/1/2031	$0.00	$7,000,000.00	$7,000,000.00	$1,131,821.82
12/15/2031	$0.00	$8,968,750.00	$8,968,750.00	$1,446,424.34
1/31/2032	$0.00	$5,250,000.00	$5,250,000.00	$839,567.32
2/15/2032	$0.00	$8,400,000.00	$8,400,000.00	$1,339,859.59
4/1/2032	$500,000,000.00	$18,437,500.00	$518,437,500.00	$81,999,052.31
4/30/2032	$0.00	$5,250,000.00	$5,250,000.00	$825,961.03
5/15/2032	$0.00	$8,400,000.00	$8,400,000.00	$1,317,903.44
6/1/2032	$0.00	$7,000,000.00	$7,000,000.00	$1,095,031.64
6/15/2032	$0.00	$8,968,750.00	$8,968,750.00	$1,399,407.91
7/31/2032	$0.00	$5,250,000.00	$5,250,000.00	$812,276.96
8/15/2032	$0.00	$8,400,000.00	$8,400,000.00	$1,296,307.09
10/31/2032	$0.00	$5,250,000.00	$5,250,000.00	$798,966.25
11/15/2032	$0.00	$8,400,000.00	$8,400,000.00	$1,275,064.63
12/1/2032	$0.00	$7,000,000.00	$7,000,000.00	$1,059,437.33
12/15/2032	$0.00	$8,968,750.00	$8,968,750.00	$1,353,919.77
1/31/2033	$0.00	$5,250,000.00	$5,250,000.00	$785,873.67
2/15/2033	$0.00	$8,400,000.00	$8,400,000.00	$1,254,170.27
4/30/2033	$0.00	$5,250,000.00	$5,250,000.00	$773,137.55
5/15/2033	$0.00	$8,400,000.00	$8,400,000.00	$1,233,618.30

6/1/2033	$0.00	$7,000,000.00	$7,000,000.00	$1,025,000.03
6/15/2033	$350,000,000.00	$8,968,750.00	$358,968,750.00	$52,428,358.46
7/31/2033	$0.00	$5,250,000.00	$5,250,000.00	$760,328.63
8/15/2033	$0.00	$8,400,000.00	$8,400,000.00	$1,213,403.11
10/31/2033	$0.00	$5,250,000.00	$5,250,000.00	$747,869.19
11/15/2033	$0.00	$8,400,000.00	$8,400,000.00	$1,193,519.19
12/1/2033	$200,000,000.00	$7,000,000.00	$207,000,000.00	$29,325,456.90
1/31/2034	$0.00	$5,250,000.00	$5,250,000.00	$735,613.93
2/15/2034	$0.00	$8,400,000.00	$8,400,000.00	$1,173,961.11
4/30/2034	$0.00	$5,250,000.00	$5,250,000.00	$723,692.35
5/15/2034	$0.00	$8,400,000.00	$8,400,000.00	$1,154,723.52
7/31/2034	$0.00	$5,250,000.00	$5,250,000.00	$711,702.60
8/15/2034	$0.00	$8,400,000.00	$8,400,000.00	$1,135,801.18
10/31/2034	$0.00	$5,250,000.00	$5,250,000.00	$700,040.00
11/15/2034	$0.00	$8,400,000.00	$8,400,000.00	$1,117,188.91
1/31/2035	$0.00	$5,250,000.00	$5,250,000.00	$688,568.51
2/15/2035	$0.00	$8,400,000.00	$8,400,000.00	$1,098,881.65
4/30/2035	$0.00	$5,250,000.00	$5,250,000.00	$677,409.35
5/15/2035	$0.00	$8,400,000.00	$8,400,000.00	$1,080,874.38
7/31/2035	$0.00	$5,250,000.00	$5,250,000.00	$666,186.40
8/15/2035	$0.00	$8,400,000.00	$8,400,000.00	$1,063,162.19
10/31/2035	$0.00	$5,250,000.00	$5,250,000.00	$655,269.67
11/15/2035	$0.00	$8,400,000.00	$8,400,000.00	$1,045,740.26
1/31/2036	$0.00	$5,250,000.00	$5,250,000.00	$644,531.83
2/15/2036	$0.00	$8,400,000.00	$8,400,000.00	$1,028,603.81
4/30/2036	$0.00	$5,250,000.00	$5,250,000.00	$634,086.34
5/15/2036	$0.00	$8,400,000.00	$8,400,000.00	$1,011,748.18
7/31/2036	$0.00	$5,250,000.00	$5,250,000.00	$623,581.14
8/15/2036	$0.00	$8,400,000.00	$8,400,000.00	$995,168.76
10/31/2036	$0.00	$5,250,000.00	$5,250,000.00	$613,362.58
11/15/2036	$0.00	$8,400,000.00	$8,400,000.00	$978,861.03
1/31/2037	$0.00	$5,250,000.00	$5,250,000.00	$603,311.46
2/15/2037	$0.00	$8,400,000.00	$8,400,000.00	$962,820.52
4/30/2037	$0.00	$5,250,000.00	$5,250,000.00	$593,534.01
5/15/2037	$0.00	$8,400,000.00	$8,400,000.00	$947,042.88
7/31/2037	$0.00	$5,250,000.00	$5,250,000.00	$583,700.66
8/15/2037	$0.00	$8,400,000.00	$8,400,000.00	$931,523.78
10/31/2037	$0.00	$5,250,000.00	$5,250,000.00	$574,135.61
11/15/2037	$0.00	$8,400,000.00	$8,400,000.00	$916,258.99
1/31/2038	$0.00	$5,250,000.00	$5,250,000.00	$564,727.30
2/15/2038	$0.00	$8,400,000.00	$8,400,000.00	$901,244.34
4/30/2038	$0.00	$5,250,000.00	$5,250,000.00	$555,575.16
5/15/2038	$0.00	$8,400,000.00	$8,400,000.00	$886,475.73
7/31/2038	$0.00	$5,250,000.00	$5,250,000.00	$546,370.69
8/15/2038	$0.00	$8,400,000.00	$8,400,000.00	$871,949.14
10/31/2038	$0.00	$5,250,000.00	$5,250,000.00	$537,417.36
11/15/2038	$0.00	$8,400,000.00	$8,400,000.00	$857,660.59
1/31/2039	$0.00	$5,250,000.00	$5,250,000.00	$528,610.76
2/15/2039	$0.00	$8,400,000.00	$8,400,000.00	$843,606.19
4/30/2039	$0.00	$5,250,000.00	$5,250,000.00	$520,043.93
5/15/2039	$0.00	$8,400,000.00	$8,400,000.00	$829,782.10
7/31/2039	$0.00	$5,250,000.00	$5,250,000.00	$511,428.12
8/15/2039	$0.00	$8,400,000.00	$8,400,000.00	$816,184.54
10/31/2039	$0.00	$5,250,000.00	$5,250,000.00	$503,047.39
11/15/2039	$0.00	$8,400,000.00	$8,400,000.00	$802,809.80
1/31/2040	$0.00	$5,250,000.00	$5,250,000.00	$494,804.00
2/15/2040	$0.00	$8,400,000.00	$8,400,000.00	$789,654.24
4/30/2040	$0.00	$5,250,000.00	$5,250,000.00	$486,785.06
5/15/2040	$0.00	$8,400,000.00	$8,400,000.00	$776,714.25
7/31/2040	$0.00	$5,250,000.00	$5,250,000.00	$478,720.26
8/15/2040	$0.00	$8,400,000.00	$8,400,000.00	$763,986.31
10/31/2040	$0.00	$5,250,000.00	$5,250,000.00	$470,875.52
11/15/2040	$0.00	$8,400,000.00	$8,400,000.00	$751,466.94
1/31/2041	$0.00	$5,250,000.00	$5,250,000.00	$463,159.33
2/15/2041	$0.00	$8,400,000.00	$8,400,000.00	$739,152.72
4/30/2041	$300,000,000.00	$5,250,000.00	$305,250,000.00	$26,492,980.37
5/15/2041	$0.00	$8,400,000.00	$8,400,000.00	$727,040.29
8/15/2041	$0.00	$8,400,000.00	$8,400,000.00	$715,126.36
11/15/2041	$0.00	$8,400,000.00	$8,400,000.00	$703,407.65

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2/15/2042	$0.00	$8,400,000.00	$8,400,000.00	$691,880.98
5/15/2042	$480,000,000.00	$8,400,000.00	$488,400,000.00	$39,568,725.38
Total	$17,353,875,000.00		$17,631,494,182.00	
Accrued Interest	$277,619,182.00			
Target Amount	$17,631,494,182.00			

Exhibit No. ___ (JHV-8)
Docket No. UT-023003

Form 10-K

QWEST COMMUNICATIONS INTERNATIONAL INC - Q

Filed: March 11, 2004 (period: December 31, 2003)

ANNUAL REPORT WHICH PROVIDES A COMPREHENSIVE OVERVIEW OF THE COMPANY FOR THE PAST YEAR

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Note 15: Segment Information

Our three segments are (1) wireline, (2) wireless and (3) other services. Until September 2003, we operated a fourth segment, our directory publishing business which, as described in Note 6—Assets Held for Sale including Discontinued Operations, has been classified as discontinued operations and accordingly is not presented in our segment results below. Our chief operating decision maker ("CODM"), regularly reviews the results of operations at a segment level to evaluate the performance of each segment and allocate capital resources based on segment income as defined below.

Segment income consists of each segment's revenue and direct expenses. Segment revenue is based on the types of products and services offered as described below. Segment expenses include employee and service-related costs, facility costs, network expenses and non-employee related costs such as customer support, collections and marketing. We manage indirect administrative services costs such as finance, information technology, real estate and legal centrally; consequently, these costs are allocated to the other services segments. Our network infrastructure is designed to be scalable and flexible to handle multiple products and services. As a result, we do not allocate network infrastructure costs, which include all engineering expense, design, repair and maintenance costs and all third-party facilities costs, to individual products. We manage depreciation, amortization, interest expense, interest income and other income (expense) on a total company basis. As a result, these charges are not allocated to any segment.

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Segment information for the three years ended December 31, 2003 is summarized as follows:

	Years Ended December 31,		
	2003	2002	2001
		(Dollars in millions)	
Operating revenues:			
Wireline	$ 13,650	$ 14,635	$ 15,803
Wireless	594	694	688
Other services	44	42	39
Total operating revenue	$ 14,288	$ 15,371	$ 16,530
Operating expenses:			
Wireline	$ 7,840	$ 8,130	$ 8,996
Wireless	349	507	751
Other services	2,843	2,614	2,383
Total segment expenses	$ 11,032	$ 11,251	$ 12,130
Segment income (loss):			
Wireline	$ 5,810	$ 6,505	$ 6,807
Wireless	245	187	(63)
Other services	(2,799)	(2,572)	(2,344)
Total segment income	$ 3,256	$ 4,120	$ 4,400
Capital expenditures:			
Wireline	$ 1,560	$ 1,833	$ 7,146
Wireless	13	55	310
Other services	554	903	967
Total capital expenditures	2,127	2,791	8,423
Non-cash investing activities	(39)	(27)	(381)
Total cash capital expenditures	$ 2,088	$ 2,764	$ 8,042

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BELLSOUTH CORP filed this 10-K on 02/24/2004.

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SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

(Mark One)

X ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
FOR THE FISCAL YEAR ENDED DECEMBER 31, 2003

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS CONTINUED
DOLLARS ARE IN MILLIONS, EXCEPT PER SHARE AMOUNTS AND AS OTHERWISE INDICATED
BELLSOUTH CORPORATION
We evaluate our domestic wireless segment based on our proportionate share of Cingular's results. Accordingly, results for our domestic wireless segment reflect the proportional consolidation of 40% of Cingular's results.

The following table provides information for each operating segment:

	2001	2002	**2003**
Communications Group			
External revenues	$18,927	$18,334	$18,255
Intersegment revenues	144	155	193
Total segment revenues	19,071	18,489	18,448
Depreciation and amortization	4,114	4,161	3,771
Segment operating income	5,611	4,916	4,843
Interest expense	597	498	407
Income taxes	1,838	1,671	1,645
Segment net income	$3,208	$2,751	$2,829
Segment assets	$32,525	$31,925	$32,354
Capital expenditures	$5,125	$3,337	$2,824
Domestic Wireless			
External revenues	$5,707	$5,961	$6,193
Intersegment revenues	–	–	–
Total segment revenues	5,707	5,961	6,193
Depreciation and amortization	767	740	835
Segment operating income	1,020	1,086	915
Interest expense	328	364	343
Net earnings (losses) of equity affiliates	(29)	(106)	(129)
Income taxes	251	224	159
Segment net income	$425	$357	$261
Segment assets	$9,012	$9,649	$10,210
Capital expenditures	$1,262	$1,234	$1,094
Latin America Group			
External revenues	$2,910	$2,233	$2,294
Intersegment revenues	25	5	4
Total segment revenues	2,935	2,238	2,298
Depreciation and amortization	605	440	367
Segment operating income	268	279	329

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Interest expense	195	138	121
Interest income	36	23	30
Net earnings (losses) of equity affiliates	(36)	(10)	18
Income tax expense (benefit)	66	(28)	27
Segment net income (loss)	$(46) $108	$161	
Segment assets	$6,574	$3,717	$3,895
Equity method investments	127	108	119
Capital expenditures	$500	$247	$268
Advertising and Publishing Group			
External revenues	$2,072	$2,134	$2,033
Intersegment revenues	18	23	17
Total segment revenues	2,090	2,157	2,050
Depreciation and amortization	29	29	26
Segment operating income	982	898	973
Interest expense	16	12	7
Income taxes	374	340	368
Segment net income	$596	$545	$600
Segment assets	$1,843	$1,703	$1,002
Capital expenditures	$63	$29	$28

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FORM 10-K

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

(Mark One)

|X| ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d)
OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2003

OR

|_| TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d)
OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from ___________ to ___________

Commission File Number: 1-8610

SBC COMMUNICATIONS INC.

Incorporated under the laws of the State of Delaware
I.R.S. Employer Identification Number 43-1301883

175 E. Houston, San Antonio, Texas 78205-2233
Telephone Number 210-821-4105

****

In the following tables, we show how our segment results are reconciled to our consolidated results reported in accordance with GAAP. The Wireline, Cingular, Directory, International and Other columns represent the segment results of each such operating segment. The Consolidation and Elimination column adds in those line items that we manage on a consolidated basis only: interest expense, interest income and other income (expense) - net. This column also eliminates any intercompany transactions included in each segment's results. Since our 60% share of the results from Cingular is already included in the Other column, the Cingular Elimination column removes the results of Cingular shown in the Cingular segment. In the balance sheet section of the tables below, our investment in Cingular is included in the "Investment in equity method investees" line item in the Other column ($5,118 in 2003, $4,583 in 2002 and $3,556 in 2001).

Segment results, including a reconciliation to SBC consolidated results, for 2003, 2002 and 2001 are as follows:

At December 31, 2003 or for the year ended	Wireline	Cingular	Directory	International	Other	Consolidation and Elimination	Cingular Elimination	Consolidated Results
Revenues from external customers	$ 36,372	$ 15,483	$ 4,182	$ 30	$ 259	$ -	$ (15,483)	$ 40,843
Intersegment revenues	32	-	72	-	4	(108)	-	-
Total segment operating revenues	36,404	15,483	4,254	30	263	(108)	(15,483)	40,843
Operations and support expenses	24,599	11,105	1,932	47	34	(108)	(11,105)	26,504
Depreciation and amortization expenses	7,763	2,089	21	-	86	-	(2,089)	7,870
Total segment operating expenses	32,362	13,194	1,953	47	120	(108)	(13,194)	34,374
Segment operating income	4,042	2,289	2,301	(17)	143	-	(2,289)	6,469
Interest expense	-	856	-	-	-	1,241	(856)	1,241
Interest income	-	14	-	-	-	603	(14)	603
Equity in net income of affiliates	-	(323)	-	606	647	-	323	1,253
Other income (expense) - net	-	(74)	-	-	-	1,817	74	1,817
Segment income before income taxes	4,042	1,050	2,301	589	790	1,179	(1,050)	8,901
Segment assets	68,434	25,526	1,515	8,550	61,067	(39,400)	(25,526)	100,166
Investment in equity method investees	-	2,288	22	6,747	5,296	-	(2,288)	12,065
Expenditures for additions to long-lived assets	5,147	2,734	1	-	71	-	(2,734)	5,219

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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark one)

x ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d)

OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2003

OR

¨ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d)
OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from to

Commission file number 1-8606

Verizon Communications Inc.

Segment	**Description**
Domestic Telecom	Domestic wireline communications services, principally representing our telephone operations that provide local telephone services in 29 states and the District of Columbia. These services include voice and data transport, enhanced and custom calling features, network access, directory assistance, private lines and public telephones. This segment also provides long distance services, customer premises equipment distribution, data solutions and systems integration, billing and collections, Internet access services and inventory management services.
Domestic Wireless	Domestic wireless products and services include wireless voice and data services and equipment sales across the United States.
Information Services	Domestic and international publishing businesses, including print SuperPages ® and electronic SuperPages.com ™ directories, as well as website creation and other electronic commerce services. This segment has operations principally in North America and Latin America.
International	International wireline and wireless communications operations and investments primarily in the Americas, as well as investments in Europe.

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The following table provides operating financial information for our four reportable segments:

(dollars in millions)

2003	Domestic Telecom	Domestic Wireless	Information Services	International	Total Segments
External revenues	$ 38,828	$ 22,436	$ 4,114	$ 1,921	$ 67,299
Intersegment revenues	774	53	–	28	855
Total operating revenues	39,602	22,489	4,114	1,949	68,154
Cost of services and sales	14,708	6,460	641	574	22,383
Selling, general & administrative expense	8,517	8,057	1,505	691	18,770
Depreciation & amortization expense	9,217	3,888	89	346	13,540
Sales of businesses, net	–	–	(141)	–	(141)
Total operating expenses	32,442	18,405	2,094	1,611	54,552
Operating income	7,160	4,084	2,020	338	13,602
Equity in earnings (loss) of unconsolidated businesses	–	15	(1)	1,091	1,105
Income (loss) from other unconsolidated businesses	(4)	–	–	169	165
Other income and (expense), net	47	12	7	32	98
Interest expense	(1,682)	(626)	(38)	(160)	(2,506)
Minority interest	–	(1,554)	(8)	(20)	(1,582)
Provision for income taxes	(2,186)	(848)	(774)	(58)	(3,866)
Segment income	$ 3,335	$ 1,083	$ 1,206	$ 1,392	$ 7,016
Assets	$ 82,087	$ 65,166	$ 2,431	$ 11,872	$ 161,556
Investments in unconsolidated businesses	64	288	4	4,555	4,911
Capital expenditures	6,820	4,590	84	358	11,852

(dollars in millions)

2002	Domestic Telecom	Domestic Wireless	Information Services	International	Total Segments
External revenues	$ 40,260	$ 19,424	$ 4,287	$ 2,191	$ 66,162
Intersegment revenues	579	49	–	28	656
Total operating revenues	40,839	19,473	4,287	2,219	66,818
Cost of services and sales	13,390	5,456	688	586	20,120
Selling, general & administrative expense	9,048	7,084	1,411	610	18,153
Depreciation & amortization expense	9,456	3,293	74	376	13,199
Total operating expenses	31,894	15,833	2,173	1,572	51,472
Operating income	8,945	3,640	2,114	647	15,346
Equity in earnings of unconsolidated businesses	–	13	1	644	658
Income from other unconsolidated businesses	–	–	–	218	218
Other income and (expense), net	84	28	11	61	184

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Interest expense	(1,745)	(626)	(35)	(238)	(2,644)
Minority interest	–	(1,349)	(16)	(102)	(1,467)
Provision for income taxes	(2,920)	(740)	(794)	(78)	(4,532)
Segment income	$ 4,364	$ 966	$ 1,281	$ 1,152	$ 7,763
Assets	$ 82,257	$ 63,470	$ 4,319	$ 11,955	$ 162,001
Investments in unconsolidated businesses	70	289	9	3,603	3,971
Capital expenditures	8,004	4,414	167	421	13,006