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May 18, 2001

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

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

Dear Ms. Bayo:

Please find enclosed for filing an original and fifteen copies of the Direct Testimonies of Gregory D. Jacobson, Larry Richter, Allen E. Sovereign, Bert I. Steele, Dennis B. Trimble and David G. Tucek on behalf of Verizon Florida Inc. in the above matter. Please note that Exhibit DBT-3 to Mr. Trimble's testimony is confidential. The information contained in this exhibit is included in the Proprietary and Confidential cost study CDs which are being filed under separate cover today together with a Notice of Intent to Seek Confidential Classification. Mr. Trimble's confidential exhibit is covered by that Notice.

Service has been made as indicated on the Certificate of Service. If there are any questions regarding this filing, please contact me at (813) 483-2617.

Sincerely,

Kimberly Caswell

KC:tas
Enclosures

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CERTIFICATE OF SERVICE

I HEREBY CERTIFY that copies of the Direct Testimonies of Gregory D. Jacobson, Larry Richter, Allen E. Sovereign, Bert I. Steele, Dennis B. Trimble and David G. Tucek on behalf of Verizon Florida Inc. in Docket No. 990649-TP were sent via U.S. mail on May 18, 2001 to the parties on the attached list.

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BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

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

DIRECT TESTIMONY OF

GREGORY D. JACOBSON

On Behalf of

VERIZON FLORIDA INC.

SUBJECT: COST OF CAPITAL

May 18, 2001

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS.

A. My name is Gregory D. Jacobson and I am Treasurer of Verizon Florida Inc. (Verizon Florida). My business address is 600 Hidden Ridge, Irving, Texas.

Q. WOULD YOU PLEASE DESCRIBE YOUR PROFESSIONAL QUALIFICATIONS, INCLUDING YOUR EDUCATIONAL BACKGROUND?

A. I graduated from the University of Washington with a Bachelor of Arts in Business Administration degree in 1974 and a Master of Business Administration degree in 1975. Subsequent to completing my studies at the University of Washington, I have been employed by GTE, now Verizon, companies in a variety of management positions in accounting, financial management and marketing prior to being elected to my current position in 1994.

My responsibilities as Treasurer of Verizon Florida include oversight of all Treasury functions, including administration of capital structure policy and dividend policy and evaluating various financing alternatives for Verizon Florida. As Treasurer, I prepare and present testimony related to cost of capital and capitalization issues in regulatory proceedings. I also have responsibility for managing company relations and contacts with external

investors and debt rating agencies.

I am a Certified Public Accountant (CPA) in the state of Washington and a Certified Management Accountant (CMA). I have also been awarded the professional designation of Certified Rate of Return Analyst (CRRA) by the Society of Utility and Regulatory Financial Analysts (SURFA). I hold memberships in SURFA, the American Institute of Certified Public Accountants, the Washington State Society of Certified Public Accountants, and the Financial Executives Institute. I have taught classes in accounting and finance at City University in Seattle, Washington.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE PUBLIC UTILITY REGULATORY COMMISSIONS?

A. Yes. I have testified in proceedings related to capital structure and cost of capital in Alabama, California, Idaho, Indiana, Kentucky, Michigan, North Carolina, Ohio, Oklahoma, Oregon, South Carolina, Texas, and Virginia.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. I am responding to issue 7c as to the appropriate assumptions and inputs for the weighted average cost of capital (WACC) to be used by Verizon Florida in the forward-looking recurring UNE cost studies being submitted in this proceeding. The WACC reflects market-based costs consistent

with prevailing economic theory and market conditions and is based on a market-valued capital structure and prevailing interest and cost of equity rates.

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. Part II describes the fundamental economic principles that must be applied when determining the WACC to be used in a forward-looking cost study. Part III describes the group of companies on which I have based my recommended WACC for Verizon Florida. Parts IV, V and VI describe my determination of Verizon Florida's cost of debt, cost of equity and capital structure, respectively. Part VII summarizes my conclusions.

Q. HAVE YOU PROVIDED EXHIBITS TO SUPPORT YOUR TESTIMONY?

A. Yes. I have provided the following exhibits:

Exhibit GDJ-1 develops Verizon Florida's market-based WACC recommendation.

Exhibit GDJ-2 presents the Discounted Cash Flow (DCF) model results of the Standard & Poor's Industrials.

Exhibit GDJ-3 provides the average capital structure of the Standard & Poor's Industrials for the period 1995 to 1999.

Exhibit GDJ-4 shows the capitalization of various telecommunications companies.

Exhibit GDJ-5 explains the process in which Verizon Florida's Standard & Poor's (S&P) Industrials proxy group was selected.

Exhibit GDJ-6 is a paper by Dr. James H. Vander Weide, Research Professor of Finance and Economics at the Fuqua School of Business at Duke University, that explains the theory and technical aspects of the DCF model used in developing Verizon Florida's return on equity estimate.

Q. PLEASE SUMMARIZE THE MAIN POINTS OF YOUR TESTIMONY.

A. Traditional methods of setting an authorized rate of return are inappropriate for determining Verizon Florida's cost of capital for use in a forward-looking model to determine the costs of providing unbundled network elements. A forward-looking, market-based approach must be used for all facets of a cost of capital determination: cost of debt, cost of equity and capital structure. Using such a methodology produces an overall 12.78% WACC for Verizon Florida, reflecting a 7.60% cost of debt and a 14.50% cost of equity, and based on a capital structure containing 25.00% debt and 75.00% equity, as shown on Exhibit GDJ-1.

II. FUNDAMENTAL ECONOMIC PRINCIPLES

Q. WHAT IS ICM'S FUNDAMENTAL ASSUMPTION ABOUT THE COST OF PROVIDING SERVICE?

A. As Verizon Florida witness Tucek explains in his testimony, in order for

Verizon Florida's TELRIC estimates to reflect the costs the Company expects to incur, they must be based on a forward-looking cost of capital. The market-based WACC used by Verizon Florida in the model recognizes this fundamental assumption.

Q. DOES USE OF THE MARKET-BASED COST OF CAPITAL HAVE ANY IMPLICATIONS FOR COMPETITIVE ENTRY AND FOR THE PROVISIONING OF INNOVATIVE TELECOMMUNICATION SERVICES?

A. Yes. Facilities-based local exchange competition will be encouraged only if new entrants can build their own networks at a cost that is lower than facilities can be leased from incumbent local exchange companies. Consequently, the cost of capital input to Verizon Florida's forward-looking cost studies must be based on forward-looking economic principles and must be at least as large as the return those potential facilities-based competitors can earn on other investments of similar risk. If this is not the case, it would make more economic sense for competitors to lease undervalued unbundled network elements from Verizon Florida than to build their own facilities. To provide correct incentives for entry into local exchange markets, the Commission must measure Verizon Florida's cost of capital in the same way that potential competitors measure their own costs of capital.

The Commission must likewise use a forward-looking economic definition of the cost of capital if it wishes to promote investment and innovation in

telecommunications services. In competitive markets, investment in new technologies, products, and services will occur only if the potential rate of return exceeds that which can be earned on investments of the same risk.

Q. DOES THE MARKET-BASED ECONOMIC COST OF CAPITAL DIFFER FROM THE COST OF CAPITAL AS DEFINED IN TRADITIONAL REGULATORY PROCEEDINGS?

A. Yes. The cost of capital used as an input to ICM is based on an economic definition of the cost of capital. This definition utilizes current costs of debt and equity, which reflect the expected future risk faced by investors in a company, and the market value percentages of debt and equity in a company's capital structure. This differs from the "traditional" -- and now outmoded -- regulatory view, which defines the cost of capital using the embedded cost of debt, the book values of debt and equity in a company's capital structure, and the historical risk faced by investors in a company. The economic cost of capital method is also consistent with how competitive firms calculate the cost of capital to determine the required rate of return on their investments.

This market-based approach to determining the cost of capital was embraced by the Federal Communications Commission (FCC) in its 1996 Interconnection Order. There, the FCC made clear that the market-based costs of capital (debt and equity) needed to support investments required to produce a given element shall be included in the market-

based direct cost of that element. (Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, 11 FCC Rcd 15499, at para. 691 (1996).)

Q. WHAT HAS OCCURRED IN THE TELECOMMUNICATIONS INDUSTRY TO INCREASE THE RISKINESS OF INVESTMENTS AND CHANGE THE TRADITIONAL REGULATORY MODEL?

A. Since 1994, investors have increased their expected return on equity for telecommunications companies. In addition, the amount of leverage utilized (leverage refers to the utilization of debt funding) by telecommunications companies, as well as companies in other industries, has decreased sharply. (For example, GTE's common equity ratio was 63.7% at December 31, 1994, as compared with 78.0% at December 31, 1999.) The reduction in leverage utilization is also in line with investor expectations. These changes in expectations are due to significant increases in the business risk of telecommunications companies.

To this end, passage of the Telecommunications Act of 1996 (Act) has transformed the "traditional" regulatory model. The removal of entry barriers to the local exchange market, as well as rapid advances in telecommunications technologies, have promoted competition for local exchange services, particularly in lucrative business markets. The likelihood of stranded investment for incumbent local exchange companies has increased substantially due to facilities-based competition and innovations in providing telecommunications services. The resulting

increase in business risk has caused investors to demand a higher risk premium for telecommunications investments, an effect recognized by the FCC:

> "Incumbent LECs face potential competition as a result of the Act that they did not face previously. This potential competition could increase the risks facing the incumbent LECs, and thus increase their cost of capital."
>
> (In the Matter of Access Reform, Third R&0 and NOI, FCC 96-488, at para. 228 (Dec. 24, 1996).)

Q. IS THERE DATA TO SUPPORT YOUR CONCLUSION ABOUT INCREASED COMPETITION IN LOCAL EXCHANGE MARKETS?

A. Increased competition in the local exchange markets is well documented. The FCC's Common Carrier Bureau reports tremendous growth in local exchange services provided by Competitive Local Exchange Companies (CLECs, Note that the for consistency CLEC is utilized synonymously for the terms Competitive Local Exchange Companies and Alternative Local Exchange Companies throughout my testimony). As evidenced in Table 1, annual growth in Local Service Revenues for CLECs has exceeded 50% every year since 1995. These revenues represented a 5.8% market share during 1999.

TABLE 1

CLEC LOCAL SERVICE REVENUES AND END-USER LINES

AS REPORTED TO THE FCC

	December 31,							June 30,
	1993	1994	1995	1996	1997	1998	1999	2000
National CLECs	20	30	57	193	256	547	537	
National Local Service Revenue (Millions of Dollars)								
Amount	$220	$301	$651	$1008	$2161	$3530	$6347	
Annual Growth Rate		36.8%	116.3%	54.8%	114.4%	63.4%	79.8%	
Market Share	0.3%	0.4%	0.7%	1.0%	2.3%	3.5%	5.8%	
National Total End-User Lines Served (Thousands of Lines):								
Resale					1,876	3,099	5,471	8,443
Facilities-Based							2,847	4,304
Total Lines							8,318	12,747
Annual Growth Rate								106.5%
Market Share							4.4%	6.7%
Florida End-User Lines Served (Thousands of Lines):								
Total Lines							681	983
Annual Growth Rate								88.7%
Market Share							5.8%	8.1%

Source: FCC, "Local Competition at the New Millennium" (August 2000) and "Local Competition: Status as of June 30, 2000 (December 2000).

The Association for Local Telecommunications Services (ALTS) not only corroborates the FCC's report, but offers "substantial evidence that the

Act is working" in its 2001 annual report. The report states "In 2000, CLECs are expected to report $39.1 billion in revenue, up from $2.2 billion in 1996. While this represents a marked increase over 1999, 2000 will mark the first time in the industry's history that CLECs did not double revenues over the previous year. Analysts predict, however, that as consolidation takes hold and the local market matures, revenues will continue to grow at a rapid, albeit somewhat reduced rate." (ALTS, "The State of Local Competition 2001", Feb. 2001, p. 26) The report shows similar trends regarding switched local access revenue growth, as can be seen on Table 2. The table also shows that the CLEC share of the switched local access services market has steadily increased every year since 1996 and is now over 8% in terms of both revenues and access lines. CLECs have invested $56 billion in new networks since passage of the Act and are now investing over $2 billion every month in their networks. In addition, the report shows that venture capitalists invested almost $5 billion in the CLEC sector during 1999 and 2000. This excludes the capital raised by companies such as AT&T, WorldCom, and Level 3 Communications, which do not operate primarily as CLECs. Market capitalization for publicly traded CLECs was $32.1 billion as of February 20, 2001.

TABLE 2

THE STATE OF LOCAL COMPETITION AS REPORTED BY ALTS

	1996	1997	1998	1999	2000*	2001	2002	2003
CLEC Total Revenues (Billions of Dollars):								
Amount	$2.2	$4.5	$10.6	$29.2	$39.1	$54.2	$67.1	$81.4
Annual Growth Rate		104.5%	135.6%	175.5%	33.9%	38.6%	23.8%	21.3%
CLEC Switched Access Revenues (Billions of Dollars):								
Amount	$0.8	$1.8	$3.5	$7.0	$7.5	$10.5	$12.0	$13.5
Annual Growth Rate		125.0%	94.4%	100.0%	7.1%	40.0%	14.3%	12.5%
Market Share	0.8%	1.7%	3.5%	7.0%	8.3%			
CLEC Access Lines Served (Millions of Lines):								
Number	1.000	1.847	5.619	11.463	16.162			
Annual Growth Rate		84.7%	204.2%	104.0%	41.0%			
Market Share				5.6%	8.2%			
CLEC Facilities (Billions of Dollars):								
Capital Expenditures		$5.0	$9.2	$16.8	$24.9	$23.5		
Voice Switches Installed	139	334	579	897	991			
Voice Switches Planned	130	207	250	318	204			
Data Switches Installed		331	874	1,565	2,071			
Data Switches Planned		70	343	521	380			
Network Route-Miles		78,506	108,229	191,872	218,445			

*2000 revenue and capital expenditures data is actual through the 3rd quarter 2000 and projected for the 4th quarter 2000. 2000 statistical data is through the end of the 3rd quarter 2000.

Source: Association for Local Telecommunications Services (ALTS), The State of Local Competition 2001, February 2001.

Q. IS THERE EVIDENCE THAT THIS COMPETITION EXISTS WITHIN THE STATE OF FLORIDA?

A. Yes. With its expanding economy, Florida has been a particularly attractive target for competitive entry. The trend toward increased competition can be expected to accelerate as telecommunications markets further expand. As of April 18, 2001, there were 442 CLECs authorized to do business on a statewide basis. Verizon Florida has completed 606 projects with these CLECs for which collocation requirements have been satisfied and equipment has been placed in service. The Company has an additional 85 projects in progress for which applications have been accepted and engineering and/or construction is in progress. Total in-service UNE loops in Verizon's territory have multiplied over 12 times during the last year and a quarter, from 797 in December 1999 to 9,729 in March 2001.

CLECs started to be certificated in Florida as early as 1995, even before the January 1996 opening of the local exchange market under Florida law. Intermedia Communications Inc. (ICI), the largest facilities-based CLEC in the country, is headquartered in Verizon's Tampa Bay area and began local exchange operations in 1996. Today, CLECs own and operate at least 83 switches in Verizon's service area. Facilities-based competitors to Verizon include, among others, 2nd Century, AT&T, Intermedia, ITC Deltacom, KMC, MCI WorldCom, Network Telephone, Sprint, Teligent, and Time Warner.

The Commission's own statistics show that CLECs have made substantial gains, particularly in the lucrative business access line market. The Commission's annual reports on Competition in Telecommunications Markets in Florida shows that CLECs tripled their share of the business access line market from 1998 to 1999 and had a 12.3% gain from 1999 to 2000, as summarized in Table 3. CLEC market share stood at 14.2% of the business access line market as of June 30, 2000. CLECs are also beginning to penetrate the residential access line market. Access lines served have quadrupled since 1998. CLEC market share stood at 2.7% of the residential access line market as of June 30, 2000.

TABLE 3

CLEC ACCESS LINES SERVED

AS REPORTED BY THE FLORIDA PUBLIC SERVICE COMMISSION

	June 30,				
	1996	1997	1998	1999	2000
Number of CLECs	39	86	191	265	362
CLECs Providing Local Service	6	22	51	80	91
Total Access Lines Served (Thousands of Lines):					
Business	0.6	42	141	439	493
Residential	0.0	14	50	97	218
Total Lines	0.6	56	194	536	711
Annual Growth Rate – Business Lines	-	6900.0%	242.9%	204.9%	12.3%
Annual Growth Rate – Residential Lines	-	-	257.1%	94.0%	124.7%
Annual Growth Rate – Total	-	9233.3%	246.4%	176.3%	32.6%
Market Share – Business Lines	-	1.4%	4.3%	12.2%	14.2%
Market Share – Residential Lines	-	0.2%	0.7%	1.3%	2.7%
Market Share – Total	-	0.5%	1.8%	5.0%	6.1%

Source: Florida Public Service Commission, "Competition in Telecommunications Markets in Florida (December 1996 through December 2000).

The December 2000 report shows many exchanges in the state where CLECs have captured significant shares of the lucrative business access

line market—for example, 40-45% in Winter Garden (CLECs also have captured 10-15% of the residential market); 25-30% in Boynton Beach, Orlando, Pensacola, and St. Johns; 20-25% in Ft. Lauderdale, Jacksonville (also 5-10% of the residential market), Tampa, and West Kissimmee; 15-20% in Destin, Miami, and Wildwood; 10-15% in Celebration, Crestview, Gulf Breeze, Kissimme, Melbourne, Sanford, and Santa Rosa Beach; 5-10% in 35 exchanges including Clearwater. Tampa and Clearwater are Verizon Florida exchanges. CLECs have also captured 5-10% of the residential market in the Verizon Florida exchanges of Lake Wales, Lakeland, Mulberry, Plant City, St. Petersburg, and Tampa.

The December 2000 Report also raises the "question of whether wireless may ultimately provide direct competition with traditional wireline phones. Insufficient data exist to support substantive conclusions about the extent to which wireless service exists as a replacement for traditional wireline versus an adjunct to traditional wireline service. Anecdotal evidence in the form of industry literature and occasional press accounts suggests that within certain urban areas. some consumers have gone exclusively to wireless service. Examples exist of wireless service providing competition for wireline services in rural areas and actually driving down the price of telecommunications service provided by the ILEC." The report goes on to conclude "As the wireless footprint continues to expand along with its customer base and decreases in price to the consumer, the potential for mobile telephone service to compete directly with wireline

service cannot be discounted."

This conclusion is substantiated in a January 10, 2000 Business Week report entitled Telecommunications – Industry Outlook. The report states 'The boundaries between the wired and wireless sectors will begin to blur this year. As technology improves and wireless prices plummet, customers increasingly will view cellular service as a viable substitute for traditional phone service. "I think we will start to see people shutting off their home phones because they have enough minutes on their wireless plans. They won't need both," Klugman says. Yankee Group Research Inc. estimates that 2% of wireless phone users no longer have wireline phones at home, and that this number will reach 6% in two years." There are currently 11 wireless switches of competitors in Verizon Florida's service territory, including switches of Alltel Mobile, AT&T Wireless, Metrocall, and Nextel, among others.

Q. WHAT ROLE DOES THE COST OF CAPITAL PLAY IN DETERMINING THE COSTS OF PROVIDING SERVICE?

A. The economic cost of providing service includes both capital costs and expenses. The rate of return, or cost of capital, required by investors is a key element of consideration in a company's decision to invest in construction of facilities to provide future service.

Q. HOW HAVE YOU DEFINED THE REQUIRED RATE OF RETURN, OR COST OF CAPITAL, ASSOCIATED WITH INVESTMENT DECISIONS?

A. Verizon Florida has adopted the economic definition of the required rate of return, which is the return investors forego as a result of their investment choice relative to other available investments of equal risk.

Q. DOES THE REQUIRED RATE OF RETURN ON INVESTMENT AFFECT INVESTORS' WILLINGNESS TO INVEST IN A COMPANY?

A. Yes. The expected return on an investment opportunity determines whether a rational investor is willing to make an investment. The cost of capital is a measure of the return that investors would expect on an investment with certain risk characteristics.

Q. HOW DOES THE RELATIVE RISK OF AN INVESTMENT AFFECT THE EXPECTED RATE OF RETURN?

A. Investors, in general, are averse to risk. Therefore, they require a higher rate of return for investments that have greater risk relative to other investments in order to compensate for that increased risk.

Q. WHAT ARE THE RELEVANT FACTORS THAT AN INVESTOR CONSIDERS WHEN EVALUATING THE RISK ASSOCIATED WITH AN INVESTMENT?

A. Risk stems from a number of factors, the most prominent of which are financial leverage, operating leverage, and business risk.

Financial leverage reflects the capital structure of the firm and decisions related to the relative mix of debt and equity capital. Increased levels of

debt relative to the assets pledged to secure that debt increases the risk that a company will not have sufficient assets to satisfy claims of debt holders in the event a company must be liquidated.

Operating leverage refers to the relative levels of fixed costs in relation to variable costs within a firm. A relatively high level of fixed costs causes a company's cash flows to be highly sensitive to changes in sales volume. This situation exists within Verizon Florida due to a large investment in central office, transport and loop assets to provide facilities based services.

Business risk is the uncertainty of projected revenue streams based upon external factors such as competitor actions, changes in technology, and in the case of the telecommunications industry, the regulatory environment.

Q. HOW WOULD YOU CHARACTERIZE THE RISK FOR AN INVESTOR CONSIDERING AN INVESTMENT IN VERIZON FLORIDA?

A. Investors base investment decisions primarily on expected future returns and the risk, or uncertainty, surrounding those returns. One of the key determinants of uncertainty of future returns is the expected level of competition facing a firm in the industry in which it operates. The clearly stated objective of legislative and regulatory bodies at both the state and federal level is to transition to full market competition in the telecommunications industry. This has significantly changed the risk

profile for Verizon Florida. Investors have reason to believe that this stated objective will be accomplished in the near future and that Verizon Florida operates in an environment that is open to full competition. Investors have incorporated this into their expected risk-adjusted costs of capital for companies in the telecommunications industry.

Verizon Florida's carrier of last resort status introduces additional uncertainty as the industry migrates to a fully competitive local exchange market. As an incumbent LEC, Verizon retains the obligation to furnish telecommunications services to all customers, even where the economic cost of providing such service is greater than the prices charged to customers.

Rapid technological changes also characterize the telecommunications industry, with breakthroughs in switch capabilities, fiber optic and wireless technologies, as well as the convergence of the video, computer and telecommunications markets and technologies. These changes may render Verizon Florida's plant obsolete prior to economic recovery of the investment, and may also reduce the cost of entry for future competitors. Verizon witness Sovereign provides additional insight into how the escalating competitive environment and rapid technological changes are increasing the risk to Verizon Florida's debt and equity investors.

Given all of the factors I discuss above, an investor would consider Verizon Florida to face the same level of risk as any company operating

in a competitive marketplace. Therefore, investors require a rate of return on investment that is commensurate with that for an investment in the stock of the average competitive firm, as can be represented by the S&P Industrials.

III. PROXY GROUP

Q. WHAT ARE THE GENERALLY ACCEPTED MODELS TO DETERMINE THE COST OF EQUITY FOR A COMPANY?

A. The DCF model, Capital Asset Pricing Model (CAPM), and risk premium model are the most prevalent models used to determine a company's cost of equity. The DCF model is the most widely used of these models and is the one Verizon Florida used to determine its recommended cost of equity in this proceeding.

Q. CAN COMMONLY ACCEPTED COST OF EQUITY MODELS BE APPLIED DIRECTLY TO DATA FOR VERIZON FLORIDA?

A. No. The DCF model requires market data, such as the stock price and forecasted growth rates, specific to the company being measured. These market variables are not available for Verizon Florida, since its common stock is not publicly traded. Therefore, a group of companies comparable in terms of business and financial risk to Verizon Florida, as perceived by the capital markets, is required as a proxy to determine the cost of equity using the DCF model. The market-based cost of capital estimates used as an input to ICM should be based on the assumption of a competitive

telecommunications market. If the competitive market assumption is used to value Verizon Florida's investment in network facilities on a going-forward basis, then the same assumption must also be used to measure the market-based cost of capital associated with these facilities. Thus, the basic competitive market assumption of the ICM costing principles provides support for the use of competitive firms such as the S&P Industrials to measure the cost of capital component of the long-run incremental cost of providing service.

Q. WHAT PROXY GROUP HAS VERIZON FLORIDA USED IN ITS DCF MODEL TO ESTIMATE ITS COST OF EQUITY?

A. Verizon Florida used the S&P Industrials in the DCF model as the proxy group to determine its cost of equity. The S&P Industrials is a widely published list of 376 large competitive firms excluding utilities, transportation firms, and financial firms. The S&P Industrials is a large enough group of companies so that issues affecting a single member of the group, or an industry within the group, will not significantly bias the DCF model results.

Q. WOULD A GROUP OF TELECOMMUNICATIONS HOLDING COMPANIES REPRESENT AN APPROPRIATE RISK PROXY FOR VERIZON FLORIDA?

A. No. At this time, there are two reasons why local exchange carrier holding companies (LECHCs) are not an appropriate risk proxy for estimating the recommended return on equity for Verizon Florida. First,

the business risk of the LECHCs is not identical with that of Verizon Florida. Second, and more importantly, market conditions are such that the DCF model currently does not provide accurate estimates of the cost of equity for the LECHCs.

Q. HOW IS THE BUSINESS RISK OF THE LECHCs DIFFERENT FROM THAT OF VERIZON FLORIDA?

A. Although Verizon Florida's parent company, Verizon Communications, has substantial overall market value, Verizon Florida competes in Florida markets still dominated by BellSouth. The market dominance and concentration of the local exchange businesses of BellSouth and the other Regional Bell Holding Companies (RBHCs) differentiate them from Verizon Florida. The RBHCs also may provide wireless and internet services, while Verizon Florida does not. Each of these businesses is different in risk from the local exchange business. Many of the LECHCs, including Verizon Communications, also have significant international businesses, which have much greater business risk than a local exchange company such as Verizon Florida.

Q. WHY DOES THE DCF MODEL FAIL TO PROVIDE ACCURATE ESTIMATES OF THE COST OF EQUITY FOR THE LECHCs?

A. The DCF model relies on stock price and dividend growth forecasts that must be in sync to produce accurate results. However, investor reactions to the radical restructuring that is occurring among the LECHCs has caused disproportionate movements in the stock prices relative to

expected earnings.

The LECHCs are part of an industry that is experiencing radical restructuring fomented by profound regulatory and technological changes. For example, SBC Communications merged with Pacific Telesis in April 1997 and Ameritech in October 1999. US West spun off its cable TV business during June 1998 and merged with Qwest Communications in June 2000. GTE Corporation acquired BBN Corporation in August 1997. Bell Atlantic merged with NYNEX in August 1997 and with GTE Corporation in June 2000 and renamed itself Verizon Communications. Prior to its merger with Bell Atlantic, GTE Corporation spun off certain data operations into a publicly traded company called Genuity Inc. Verizon Communications has also formed a partnership with Vodafone AirTouch PLC that combines the U.S. wireless businesses of both companies.

Although the financial community expects these companies to achieve significant earnings growth as a result of their merger and restructuring activities, the projected earnings growth associated with the prospective merger and restructuring activities had not yet been reflected in the analysts' earnings growth forecasts as of the date of the WACC study. As a practice, analysts do not update forecasts for mergers and restructuring activities until after completion. However, the expected earnings growth associated with the prospective merger and restructuring activities is necessarily included in the companies' stock prices.

Therefore, a DCF model that includes only LECHCs within the telecommunications industry will currently produce a downwardly-biased estimate of the cost of equity.

This is true for rumored, as well as actual, merger and restructuring activities. In general, if it is believed that two companies are merger candidates, investors will bid up the stock price for the company being acquired and bid down the stock price for the surviving company in anticipation of merger-related revenue and cost saving opportunities. There currently are rumors in the marketplace about corporate reorganizations involving other telecommunications companies including BellSouth, Sprint, and WorldCom.

In addition, the sample size of publicly traded LECHCs that are predominantly local exchange in nature; namely BellSouth, Qwest, SBC, and Verizon; has become so small that it can not be relied upon to provide statistically valid results. Over the last decade, even these companies, as discussed previously, have greatly diversified their business operations into such areas as wireless, internet, long-distance, and international communications.

IV. COST OF DEBT

Q. HOW HAS THE MARKET-BASED COST OF DEBT BEEN DEFINED IN VERIZON FLORIDA'S STUDY?

A. The market-based cost of debt has been defined as the current market interest rate that a firm would have to pay on newly issued debt obligations. This is consistent with the economic definition of the cost of debt, and thus is market-based. The expected cost of debt for the S&P Industrials is approximately 7.60%, which is evidenced by the average for newly issued "A" rated Industrial Bond yields of 7.70% in January 2001 and 7.64% in February 2001 as reported by Moody's. The rating of "A" was chosen because it is the most prevalent rating of the S&P Industrials.

Q. IN DOCKET NO. 990649-TP THE STAFF RECOMMENDED THAT SHORT-TERM DEBT BE CONSIDERED IN DETERMINING THE COST OF DEBT FOR BELLSOUTH. DO YOU AGREE WITH THAT RECOMMENDATION FOR VERIZON FLORIDA?

A. No. Verizon Florida uses short-term debt to finance its working capital and on-going business operations and long-term debt to finance its long-term investments in telecommunications plant. In this proceeding, the cost of capital is utilized to determine an appropriate return on its investments in telecommunications plant. Therefore, including short-term debt as a component of the weighted average cost of capital would be inconsistent.

V. COST OF EQUITY

Q. HOW WAS THE MARKET-BASED COST OF EQUITY DETERMINED IN VERIZON FLORIDA'S DCF MODEL?

A. The market-based cost of equity was based on the average quarterly DCF model results applied to the S&P Industrials.

Q. WHAT WERE THE RESULTS OF VERIZON FLORIDA'S DCF MODEL?

A. Verizon Florida's DCF model resulted in a cost of equity of approximately 14.50%, as shown on Exhibit GDJ-2.

VI. CAPITAL STRUCTURE

Q. HOW WERE THE PERCENTAGES OF DEBT AND EQUITY DEFINED IN VERIZON FLORIDA'S CAPITAL STRUCTURE?

A. The percentages of debt and equity in the capital structure presented are aligned with those used by economists. (See, for example, Bradford Cornell, Corporate Valuation, chapter 7 (1993); Aswath Damodaran, Damodaran on Valuation, chapter 3 (1994); and Eugene F. Brigham, Fundamentals of Financial Management, 5th edition, chapter 7 (1992).) The calculations were based on the market values of the debt and equity for the S&P Industrials.

Q. WHY WAS THE CAPITAL STRUCTURE MEASURED IN TERMS OF THE MARKET VALUES OF ITS DEBT AND EQUITY?

A. Economists measure a firm's capital structure in terms of the market values of its debt and equity because that is the best measure of the amounts of debt and equity that have been invested in a company on a going-forward basis. Measuring a firm's capital structure in terms of

market value allows its managers to choose a financing strategy that maximizes the value of the firm, where the value of the firm is the sum of the market value of the firm's debt and equity.

Q. HOW DOES THE MARKET-BASED COST OF DEBT DIFFER FROM A COMPANY'S EMBEDDED COST OF DEBT?

A. The market-based cost of debt is the rate of interest a company would have to pay if it issued debt under today's market conditions. The embedded cost of debt is a company's total interest expense divided by the total book value of its debt. Thus, the embedded cost of debt is an average of the interest rates a company has paid in the past to issue debt securities. This calculation of the embedded cost of debt, however, provides no basis for measuring the market-based cost of debt.

Q. HOW DOES THE MARKET VALUE DIFFER FROM THE BOOK VALUE OF A COMPANY'S DEBT?

A. The market value of a company's debt represents the current price in the capital markets of a company's debt obligations. The book value of a company's debt is the historical face value of its debt adjusted for the accounting amortization of premiums and discounts. The market value of a company's debt is approximately equal to the book value of its debt when current interest rates are approximately equal to the average interest rate of a company's previous debt issuances.

Q. HOW DOES THE MARKET VALUE DIFFER FROM THE BOOK VALUE

OF A COMPANY'S EQUITY?

A. The market value of a company's equity reflects the market price of a company's stock times the number of shares outstanding. Market value measures the current market value of investors' equity position in a company. The book value of equity represents the sum of paid-in capital and retained earnings, where paid-in capital represents the amount of capital a firm has historically obtained from stock issuances, and retained earnings represent the cumulative earnings over the life of a company that have not been paid out as dividends. In addition, the book value of a company's equity is adjusted periodically for accounting events such as changes in accounting rules and regulations, write-offs, and extraordinary events.

Q. WHAT RATIONALE DID REGULATORS USE IN THE PAST TO JUSTIFY THE USE OF THE BOOK VALUE OF A COMPANY'S EQUITY IN THE DETERMINATION OF THE WEIGHTED AVERAGE COST OF CAPITAL?

A. The utilization of a book-based capital structure by regulators is based on the assumption that the market value and book value of common equity are approximately the same. This assumption was developed on market conditions that historically held true through the early to late 1980s, but that are no longer valid. The use of a book-based capital structure in determining a company's weighted average cost of capital thus has no basis in economic or financial theory.

Q. WHY IS THIS ASSUMPTION UNDERLYING USE OF A BOOK-BASED CAPITAL STRUCTURE NO LONGER VALID?

A. During 1984, when the RBHCs were spun off from AT&T, the market to book ratio of the RBHCs and other LECHCs was approximately 1.0. This means the market and the book value of common equity were virtually the same. At that time, the percentage of common equity in the capital structures of the LECs and the LECHCs was also approximately the same. For example, Verizon's (i.e. the combination of Bell Atlantic, GTE, and NYNEX) capital structure was comprised of 56.8% and 52.8% common equity on a market value and book value basis, respectively, as of December 31, 1984. (See the Bell Atlantic, GTE, and NYNEX 1984 Annual Report to Shareholders.) In the late 1980s and 1990s, however, this relationship changed dramatically. By the end of 1999, the market to book ratio was 6.4; (i.e. the market value was 6.4 times the book value of the LECHCs' common equity based on 1984 to 1999 annual data in the Compustat and Bloomberg databases, compiled from companies' 10K filings with the Securities and Exchange Commission). Verizon's capital structure was comprised of 78.0% common equity on a market value basis and 35.7% common equity on a book value basis, respectively, as of December 31, 1999. Consequently, the weighted average cost of capital and returns anticipated by investors of the LECHCs is substantially understated when using a book-based capital structure in the calculation. Thus, it is now necessary to deviate from the prior regulatory paradigm by adopting a market-based approach in measuring the weighted average cost of capital. Only in this manner will

LECs be provided a reasonable rate of return.

For the 5-year period from 1995 to 1999 (Ibid.), the average LECHC, interexchange carrier, and Standard & Poor's Industrials company had an average market capital structure comprised of equity equal to 80.9%, 85.2%, and 85.2% of total capital, respectively, as shown on Exhibit GDJ-4.

Q. IS A BOOK-VALUE CAPITAL STRUCTURE FORWARD LOOKING IN NATURE?

A. No. A book-value based capital structure by definition is based on the historical transactions of a company and does not reflect the mix of debt and equity that it would use to finance its operations on a forward-looking basis. Consequently, it would be inappropriate to utilize a capital structure based on book values to determine the cost of capital in this forward-looking proceeding. As the Massachusetts Commission succinctly concluded, "it would be inconsistent to use forward-looking competitive assumptions in the investment and expense components of a TELRIC study, but historical accounting-based capital structures in the cost of capital component" (Order dated December 4, 1996 in Docket Nos. DPU 96-73/74, 96-75, 96-80-81, 96-83, 96-94, at 53.).

Q. WHAT METHODOLOGY WAS USED FOR MEASURING THE MARKET-BASED PERCENTAGES OF DEBT AND EQUITY IN THE CAPITAL STRUCTURE?

A. I have utilized a conservative market capital structure comprised of 25% debt and 75% equity, as shown on Exhibit GDJ-1, in determining the weighted average cost of capital in this proceeding. As noted above, the amount of equity included in this capital structure is conservative when compared with that for the LECHCs, interexchange carriers, and the S&P Industrials.

VII. CONCLUSION

Q. WHAT ARE YOUR CONCLUSIONS REGARDING THE APPROPRIATE COST OF CAPITAL TO BE USED FOR VERIZON FLORIDA IN THIS PROCEEDING?

A. The traditional methods of setting an authorized regulatory rate of return cannot be used to determine a forward-looking cost of capital. The appropriate forward-looking WACC to be used for Verizon Florida in this proceeding is 12.78%, reflecting a 7.60% cost of debt and a 14.50% cost of equity, and based on a capital structure containing 25.00% debt and 75.00% equity.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

WEIGHTED AVERAGE COST OF CAPITAL

	Percent	Cost Rate	Weighted Cost Rate
Debt	25.00%	7.60%	1.90%
Equity	75.00%	14.50%	10.88%
Total	100.00%		12.78%

STANDARD & POOR'S INDUSTRIALS
QUARTERLY DISCOUNTED CASH FLOW MODEL

Ticker	Comparable Firm	Average Stock Price Feb 2001	Current Quarterly Dividend	Mean IBES Annual Long-Term Growth Forecasts	Cost of Equity	Market Weight	Weighted Cost of Equity
ABT	ABBOTT LABORATORIES	$47 585	$0.190	12 400%	14.30%	2.6900%	0.38%
AET	AETNA INC	$37 665	$0.200	12.600%	15.14%	0.1869%	0.03%
APD	AIR PRODUCTS & CHEMICALS INC	$38.855	$0.190	11.200%	13.51%	0 3090%	0.04%
ABS	ALBERTSONS INC	$28.725	$0.190	11 400%	14.54%	0.4220%	0.06%
AHP	AMERICAN HOME PRODUCTS CORP	$59.575	$0.230	13.600%	15.46%	2.8690%	0.44%
ADM	ARCHER-DANIELS-MIDLAND CO	$15.220	$0.050	12.200%	13.76%	0.3388%	0.05%
AVY	AVERY DENNISON CORP	$53 300	$0.300	12.800%	15.50%	0.1835%	0.03%
AVP	AVON PRODUCTS	$40 975	$0.185	12.600%	14.76%	0.3588%	0.05%
BCR	BARD (C R) INC	$45 185	$0.210	12.200%	14.41%	0.0801%	0.01%
BAX	BAXTER INTERNATIONAL INC	$89 350	$0.291	13.300%	14.86%	0.9608%	0.14%
BDX	BECTON DICKINSON & CO	$36.700	$0.095	12.300%	13.53%	0.3278%	0.04%
BLS	BELLSOUTH CORP	$42.065	$0.190	11.300%	13.43%	2.7899%	0.37%
BMS	BEMIS CO	$33.845	$0.240	11.400%	14.76%	0.0636%	0.01%
BMET	BIOMET INC	$36.250	$0.027	14 900%	15.26%	0.2463%	0.04%
BDK	BLACK & DECKER CORP	$44.100	$0.120	14.500%	15.82%	0.1185%	0.02%
BMY	BRISTOL MYERS SQUIBB	$63 250	$0.245	12.200%	14.04%	4.4110%	0.62%
BC	BRUNSWICK CORP	$20.500	$0.125	12.900%	15.83%	0 0660%	0.01%
CCL	CARNIVAL CORP	$31.875	$0.105	14.100%	15.69%	0.6921%	0.11%
CAT	CATERPILLAR INC	$42.375	$0.340	9.700%	13.45%	0.5079%	0.07%
CTL	CENTURYTEL INC	$30.175	$0.048	13.700%	14.46%	0.1440%	0.02%
CLX	CLOROX CO/DE	$35.575	$0.210	11.900%	14.71%	0.3018%	0.04%
KO	COCA-COLA CO	$56.200	$0.170	13.100%	14.55%	4.6700%	0.68%
CL	COLGATE-PALMOLIVE CO	$58.780	$0.158	12.500%	13.78%	1.2002%	0.17%
CA	COMPUTER ASSOCIATES INTL INC	$34.200	$0.020	15.700%	15.99%	0.6384%	0.10%
CAG	CONAGRA FOODS INC	$21.870	$0.225	10.400%	15.26%	0.3748%	0.06%
CBE	COOPER INDUSTRIES INC	$45.145	$0.350	11.000%	14.67%	0.1425%	0.02%
CTB	COOPER TIRE & RUBBER	$13.275	$0.105	10.000%	13.71%	0.0344%	0.00%
DRI	DARDEN RESTAURANTS INC	$21.175	$0.020	14.600%	15.06%	0.0927%	0.01%
DLX	DELUXE CORP	$22.840	$0.370	6.700%	14.17%	0.0627%	0.01%
DIS	DISNEY (WALT) COMPANY	$31.290	$0.053	15.000%	15.82%	2.3129%	0.37%
DOW	DOW CHEMICAL	$31 940	$0.290	9.000%	13.23%	0.7906%	0.10%
DD	DU PONT (E I) DE NEMOURS	$43.080	$0.350	9 300%	13.09%	1.6114%	0.21%
EK	EASTMAN KODAK CO	$44.330	$0.440	8.800%	13.42%	0.4798%	0.06%
ETN	EATON CORP	$71.125	$0.440	10.500%	13.41%	0.1769%	0.02%
ECL	ECOLAB INC	$42.260	$0.130	14.300%	15.79%	0.1893%	0.03%
EMR	EMERSON ELECTRIC CO	$70.470	$0.383	12.400%	14.99%	1.0195%	0.15%
EC	ENGELHARD CORP	$23.205	$0.100	12.800%	14.86%	0.1076%	0.02%
FDC	FIRST DATA CORP	$61.195	$0.020	14.000%	14.16%	0.8687%	0.12%
FO	FORTUNE BRANDS INC	$33.205	$0.240	11 300%	14.73%	0.1842%	0.03%
GCI	GANNETT CO	$65.750	$0.220	11.800%	13.38%	0.6195%	0.08%
GIS	GENERAL MILLS INC	$43.380	$0.275	10.600%	13.58%	0 4521%	0.06%
G	GILLETTE CO	$33.420	$0.163	11.600%	13.91%	1.2159%	0.17%
GR	GOODRICH (B F) CO	$39.200	$0.275	11.800%	15.14%	0.1470%	0.02%
GT	GOODYEAR TIRE & RUBBER CO	$25.035	$0.300	8.800%	14.39%	0.1427%	0.02%
GWW	GRAINGER (W W) INC	$35.455	$0.170	12.300%	14.58%	0.1168%	0.02%
GAP	GREAT ATLANTIC & PAC TEA CO	$10.700	$0.100	10.400%	14.81%	0.0130%	0.00%
HCA	HCA-HEALTHCARE CO	$39.100	$0.020	14.800%	15.05%	0.7637%	0.11%
HNZ	HEINZ (H J) CO	$43.515	$0.393	9.500%	13.72%	0.5259%	0.07%
HON	HONEYWELL INTERNATIONAL INC	$47.845	$0.188	14.100%	16.00%	1.3236%	0.21%

STANDARD & POOR'S INDUSTRIALS
QUARTERLY DISCOUNTED CASH FLOW MODEL

Ticker	Comparable Firm	Average Stock Price Feb 2001	Current Quarterly Dividend	Mean IBES Annual Long-Term Growth Forecasts	Cost of Equity	Market Weight	Weighted Cost of Equity
ITW	ILLINOIS TOOL WORKS	$63.540	$0.200	13.200%	14 71%	0.6497%	0.10%
IR	INGERSOLL-RAND CO	$44.025	$0.170	11.700%	13.53%	0.2471%	0.03%
IPG	INTERPUBLIC GROUP OF COS	$39.650	$0.095	14.700%	15.86%	0.4106%	0.07%
IBM	INTL BUSINESS MACHINES CORP	$108.870	$0.130	13 800%	14.37%	6.2959%	0.90%
ITT	ITT INDUSTRIES INC	$41.625	$0.150	13.900%	15.64%	0.1266%	0.02%
JNJ	JOHNSON & JOHNSON	$95.690	$0.320	12.900%	14.50%	4.8064%	0.70%
JCI	JOHNSON CONTROLS INC	$66.550	$0.310	13.600%	15.84%	0 2033%	0.03%
KMB	KIMBERLY-CLARK CORP	$68.335	$0.270	11.300%	13.16%	1 3546%	0.18%
LEG	LEGGETT & PLATT INC	$19 905	$0 110	12.700%	15.35%	0.1347%	0.02%
LLY	LILLY (ELI) & CO	$78 225	$0.260	13.400%	15.00%	3.1815%	0.48%
LIZ	LIZ CLAIBORNE INC	$48.155	$0.113	12.600%	13.72%	0.0918%	0.01%
LMT	LOCKHEED MARTIN CORP	$36.375	$0.110	11.900%	13.33%	0.5721%	0.08%
MAT	MATTEL INC	$16.185	$0.090	12.000%	14.65%	0.2556%	0.04%
MAY	MAY DEPARTMENT STORES CO	$37.375	$0.233	10.600%	13.53%	0.4187%	0.06%
MYG	MAYTAG CORP	$33.990	$0.180	13.300%	15.85%	0 0915%	0.01%
MHP	MCGRAW-HILL COMPANIES	$60.995	$0.235	12.900%	14.74%	0.4092%	0.06%
MRK	MERCK & CO	$80.975	$0.340	12.000%	13.99%	6.5452%	0.92%
MDP	MEREDITH CORP	$36.075	$0.080	12.400%	13 45%	0.0638%	0.01%
MMM	MINNESOTA MINING & MFG CO	$111.500	$0.580	11.200%	13.66%	1.5862%	0.22%
NYT	NEW YORK TIMES CO -CL A	$42.675	$0.115	12.400%	13.68%	0.2549%	0.03%
JWN	NORDSTROM INC	$19.580	$0.090	13.300%	15.51%	0.0878%	0.01%
NUE	NUCOR CORP	$42.820	$0.150	12.300%	13.97%	0.1222%	0.02%
OXY	OCCIDENTAL PETROLEUM CORP	$23.345	$0.250	8.700%	13.68%	0.3147%	0.04%
PH	PARKER-HANNIFIN CORP	$42.545	$0.170	11.800%	13.69%	0.1780%	0.02%
PEP	PEPSICO INC	$45.770	$0.140	13.100%	14.56%	2.3633%	0.34%
P	PHILLIPS PETROLEUM CO	$55.203	$0.340	10.800%	13.70%	0 5362%	0.07%
PX	PRAXAIR INC	$44.105	$0.155	11.700%	13.36%	0.2512%	0.03%
PG	PROCTER & GAMBLE CO	$73.500	$0.350	11.300%	13.55%	3.2550%	0.44%
RTN B	RAYTHEON CO -CL B	$34.705	$0.200	10.900%	13.62%	0 4009%	0.05%
ROH	ROHM & HAAS CO	$35.345	$0.200	11.300%	13.98%	0.2867%	0.04%
SLE	SARA LEE CORP	$21.450	$0.145	10.200%	13.37%	0.6372%	0.09%
SBC	SBC COMMUNICATIONS INC	$48.620	$0.254	13.000%	15.51%	5.7348%	0.89%
SGP	SCHERING-PLOUGH	$45.475	$0.140	14.000%	15.48%	2.1342%	0.33%
SHW	SHERWIN-WILLIAMS CO	$25.350	$0.135	11.000%	13.51%	0.1433%	0.02%
SNA	SNAP-ON INC	$29.250	$0.240	10.100%	13.95%	0.0585%	0.01%
SMI	SPRINGS INDUSTRIES -CL A	$39.500	$0.330	10.000%	13.92%	0.0284%	0.00%
FON	SPRINT FON GROUP	$23.035	$0.125	11.600%	14.17%	0.6330%	0.09%
SWK	STANLEY WORKS	$35.050	$0.230	10.700%	13.79%	0.1062%	0.01%
SYY	SYSCO CORP	$27.155	$0.060	13.800%	14.86%	0.6427%	0.10%
TEK	TEKTRONIX INC	$31.470	$0.060	15.000%	15.93%	0.0831%	0.01%
TJX	TJX COMPANIES INC	$31.115	$0.040	14.800%	15.42%	0.3039%	0.05%
TRB	TRIBUNE CO	$39.755	$0.100	13.200%	14.40%	0.4319%	0.06%
TRW	TRW INC	$38.165	$0.350	9.800%	14.10%	0.1724%	0.02%
UTX	UNITED TECHNOLOGIES CORP	$76.720	$0.225	13.800%	15.21%	1.3014%	0.20%
MRO	USX-MARATHON GROUP	$27.945	$0.230	10.200%	14.07%	0.3062%	0.04%
X	USX-U S STEEL GROUP	$15.500	$0.250	8.100%	15.63%	0.0480%	0.01%
VZ	VERIZON COMMUNICATIONS	$50.940	$0.385	11.600%	15.19%	4.7454%	0.72%
VFC	VF CORP	$35.325	$0.230	10.800%	13.87%	0.1456%	0.02%
VMC	VULCAN MATERIALS CO	$43.625	$0.210	12.600%	14.90%	0.1518%	0.02%

STANDARD & POOR'S INDUSTRIALS
QUARTERLY DISCOUNTED CASH FLOW MODEL

Ticker	Comparable Firm	Average Stock Price Feb 2001	Current Quarterly Dividend	Mean IBES Annual Long-Term Growth Forecasts	Cost of Equity	Market Weight	Weighted Cost of Equity
WMT	WAL-MART STORES	$52.425	$0.060	14.700%	15.25%	7.9466%	1.21%
WEN	WENDY'S INTERNATIONAL INC	$24.190	$0.060	14.000%	15.20%	0.0997%	0.02%
WHR	WHIRLPOOL CORP	$53.095	$0.340	11.200%	14.23%	0.1250%	0.02%
WLL	WILLAMETTE INDUSTRIES	$46.115	$0.210	12.800%	14.98%	0.1807%	0.03%
	Average			12.11%	14.49%	100.0000%	14.50%

Note: Flotation cost factor is assumed to be 5%. Average stock price is average of high and low closing prices for February 2001.
Source: Research Insight Database - February 28, 2001

STANDARD & POOR'S INDUSTRIALS
CAPITAL STRUCTURE
DECEMBER 31, 1995 - DECEMBER 31, 1999
(Millions of Dollars)

Ticker	Comparable Firm	Average Debt	Average Common Equity Market Value	Debt Ratio	Equity Ratio
ABT	ABBOTT LABORATORIES	$2,370.582	$50,660.431	4.47%	95.53%
AET	AETNA INC	$2,958.000	$9,862.008	23.07%	76.93%
APD	AIR PRODUCTS & CHEMICALS INC	$2,376.760	$7,634.713	23.74%	76.26%
ABS	ALBERTSONS INC	$1,800.120	$11,672.951	13.36%	86.64%
AHP	AMERICAN HOME PRODUCTS CORP	$2,498.340	$15,260.088	14.07%	85.93%
ADM	ARCHER-DANIELS-MIDLAND CO	$440.920	$3,330.325	11.69%	88.31%
AVY	AVERY DENNISON CORP	$2,984.250	$13,040.629	18.62%	81.38%
AVP	AVON PRODUCTS	$5,723.808	$48,573.388	10.54%	89.46%
BCR	BARD (C.R.) INC	$3,210.056	$10,198.578	23.94%	76.06%
BAX	BAXTER INTERNATIONAL INC	$415.086	$19,822.867	2.05%	97.95%
BDX	BECTON DICKINSON & CO	$517.380	$5,137.024	9.15%	90.85%
BLS	BELLSOUTH CORP	$372.220	$8,048.221	4.42%	95.58%
BMS	BEMIS CO	$330.140	$2,091.149	13.63%	86.37%
BMET	BIOMET INC	$928.834	$2,740.278	25.31%	74.69%
BDK	BLACK & DECKER CORP	$2,726.800	$13,869.362	16.43%	83.57%
BMY	BRISTOL MYERS SQUIBB	$998.536	$6,736.416	12.91%	87.09%
BC	BRUNSWICK CORP	$12,220.800	$64,928.138	15.84%	84.16%
CCL	CARNIVAL CORP	$298.942	$1,882.958	13.70%	86.30%
CAT	CATERPILLAR INC	$12.786	$3,134.713	0.41%	99.59%
CTL	CENTURYTEL INC	$1,704.820	$3,810.477	30.91%	69.09%
CLX	CLOROX CO/DE	$6,132.400	$39,662.624	13.39%	86.61%
KO	COCA-COLA CO	$1,626.200	$90,421.696	1.77%	98.23%
CL	COLGATE-PALMOLIVE CO	$635.480	$2,408.995	20.87%	79.13%
CA	COMPUTER ASSOCIATES INTL INC	$1,277.022	$18,240.907	6.54%	93.46%
CAG	CONAGRA FOODS INC	$9,736.200	$15,330.313	38.84%	61.16%
CBE	COOPER INDUSTRIES INC	$1,742.894	$3,918.833	30.78%	69.22%
CTB	COOPER TIRE & RUBBER	$956.490	$8,509.748	10.10%	89.90%
DRI	DARDEN RESTAURANTS INC	$4,765.600	$139,492.896	3.30%	96.70%
DLX	DELUXE CORP	$2,905.380	$22,069.084	11.63%	88.37%
DIS	DISNEY (WALT) COMPANY	$210.600	$38,925.202	0.54%	99.46%
DOW	DOW CHEMICAL	$1,614.126	$24,250.968	6.24%	93.76%
DD	DU PONT (E I) DE NEMOURS	$3,088.720	$12,899.136	19.32%	80.68%
EK	EASTMAN KODAK CO	$1,485.340	$4,541.427	24.65%	75.35%
ETN	EATON CORP	$328.828	$1,665.987	16.48%	83.52%
ECL	ECOLAB INC	$890.180	$11,804.755	7.01%	92.99%
EMR	EMERSON ELECTRIC CO	$319.444	$4,684.966	6.38%	93.62%
EC	ENGELHARD CORP	$371.584	$2,024.848	15.51%	84.49%
FDC	FIRST DATA CORP	$142.988	$2,560.055	5.29%	94.71%
FO	FORTUNE BRANDS INC	$9,954.460	$53,074.253	15.79%	84.21%
GCI	GANNETT CO	$1,300.040	$5,027.680	20.55%	79.45%
GIS	GENERAL MILLS INC	$813.858	$7,036.457	10.37%	89.63%
G	GILLETTE CO	$1,533.600	$22,635.535	6.35%	93.65%
GR	GOODRICH (B F) CO	$1,602.200	$5,329.709	23.11%	76.89%
GT	GOODYEAR TIRE & RUBBER CO	$244.340	$3,541.464	6.45%	93.55%

STANDARD & POOR'S INDUSTRIALS
CAPITAL STRUCTURE
DECEMBER 31, 1995 - DECEMBER 31, 1999
(Millions of Dollars)

Ticker	Comparable Firm	Average Debt	Average Common Equity Market Value	Debt Ratio	Equity Ratio
GWW	GRAINGER (W W) INC	$2,079.980	$24,758.678	7.75%	92.25%
GAP	GREAT ATLANTIC & PAC TEA CO	$2,240.580	$23,242.589	8.79%	91.21%
HCA	HCA-HEALTHCARE CO	$680.378	$2,712.707	20.05%	79.95%
HNZ	HEINZ (H J) CO	$1,636.760	$15,769.254	9.40%	90.60%
HON	HONEYWELL INTERNATIONAL INC	$1,744.160	$5,676.453	23.50%	76.50%
ITW	ILLINOIS TOOL WORKS	$153,285.600	$272,826.808	35.97%	64.03%
IR	INGERSOLL-RAND CO	$1,858.820	$10,718.328	14.78%	85.22%
IPG	INTERPUBLIC GROUP OF COS	$2,776.640	$45,001.497	5.81%	94.19%
IBM	INTL BUSINESS MACHINES CORP	$1,166.700	$2,916.462	28.57%	71.43%
ITT	ITT INDUSTRIES INC	$1,960.540	$7,439.755	20.86%	79.14%
JNJ	JOHNSON & JOHNSON	$212.592	$4,144.983	4.88%	95.12%
JCI	JOHNSON CONTROLS INC	$986.372	$1,086.684	47.58%	52.42%
KMB	KIMBERLY-CLARK CORP	$1,159.876	$2,941.347	28.28%	71.72%
LEG	LEGGETT & PLATT INC	$7,393.400	$19,498.574	27.49%	72.51%
LLY	LILLY (ELI) & CO	$3,339.332	$15,763.760	17.48%	82.52%
LIZ	LIZ CLAIBORNE INC	$4,228.400	$68,447.570	5.82%	94.18%
LMT	LOCKHEED MARTIN CORP	$3,256.000	$27,032.677	10.75%	89.25%
MAT	MATTEL INC	$1,340.842	$13,918.150	8.79%	91.21%
MAY	MAY DEPARTMENT STORES CO	$2,266.360	$6,429.315	26.06%	73.94%
MYG	MAYTAG CORP	$694.356	$8,383.611	7.65%	92.35%
MHP	MCGRAW-HILL COMPANIES	$25,830.200	$117,718.979	17.99%	82.01%
MRK	MERCK & CO	$1,410.760	$3,236.398	30.36%	69.64%
MDP	MEREDITH CORP	$3,057.600	$91,278.215	3.24%	96.76%
MMM	MINNESOTA MINING & MFG CO	$1,501.100	$4,026.971	27.15%	72.85%
NYT	NEW YORK TIMES CO -CL A	$1,350.400	$3,684.375	26.82%	73.18%
JWN	NORDSTROM INC	$520.860	$3,589.434	12.67%	87.33%
NUE	NUCOR CORP	$3,241.020	$63,719.988	4.84%	95.16%
OXY	OCCIDENTAL PETROLEUM CORP	$23.638	$2,337.089	1.00%	99.00%
PH	PARKER-HANNIFIN CORP	$938.264	$8,069.826	10.42%	89.58%
PEP	PEPSICO INC	$3,656.400	$19,598.711	15.72%	84.28%
P	PHILLIPS PETROLEUM CO	$630.876	$3,423.754	15.56%	84.44%
PX	PRAXAIR INC	$591.700	$7,802.432	7.05%	92.95%
PG	PROCTER & GAMBLE CO	$3,130.960	$126,762.757	2.41%	97.59%
RTN.B	RAYTHEON CO -CL B	$181.224	$1,722.494	9.52%	90.48%
ROH	ROHM & HAAS CO	$2,444.600	$32,432.767	7.01%	92.99%
SLE	SARA LEE CORP	$678.184	$5,566.458	10.86%	89.14%
SBC	SBC COMMUNICATIONS INC	$684.068	$12,823.347	5.06%	94.94%
SGP	SCHERING-PLOUGH	$661.956	$4,008.626	14.17%	85.83%
SHW	SHERWIN-WILLIAMS CO	$206.890	$4,449.236	4.44%	95.56%
SNA	SNAP-ON INC	$5,216.000	$7,666.280	40.49%	59.51%
SMI	SPRINGS INDUSTRIES -CL A	$602.908	$3,973.871	13.17%	86.83%
FON	SPRINT FON GROUP	$6,665.800	$49,572.470	11.85%	88.15%
SWK	STANLEY WORKS	$3,565.800	$11,204.387	24.14%	75.86%
SYY	SYSCO CORP	$3,148.040	$11,675.176	21.24%	78.76%

STANDARD & POOR'S INDUSTRIALS
CAPITAL STRUCTURE
DECEMBER 31, 1995 - DECEMBER 31, 1999
(Millions of Dollars)

Ticker	Comparable Firm	Average Debt	Average Common Equity Market Value	Debt Ratio	Equity Ratio
TEK	TEKTRONIX INC	$770.800	$4,283.275	15.25%	84.75%
TJX	TJX COMPANIES INC	$6,867.200	$101,060.191	6.36%	93.64%
TRB	TRIBUNE CO	$7,050.636	$12,317.932	36.40%	63.60%
TRW	TRW INC	$1,328.600	$5,848.184	18.51%	81.49%
UTX	UNITED TECHNOLOGIES CORP	$16,879.200	$103,984.682	13.97%	86.03%
MRO	USX-MARATHON GROUP	$749.380	$46,567.805	1.58%	98.42%
X	USX-U S STEEL GROUP	$586.912	$4,316.538	11.97%	88.03%
VZ	VERIZON COMMUNICATIONS	$297.520	$2,047.896	12.69%	87.31%
VFC	VF CORP	$272.432	$836.301	24.57%	75.43%
VMC	VULCAN MATERIALS CO	$4,542.520	$27,356.719	14.24%	85.76%
WMT	WAL-MART STORES	$454.660	$2,802.712	13.96%	86.04%
WEN	WENDY'S INTERNATIONAL INC	$1,630.258	$2,539.469	39.10%	60.90%
WHR	WHIRLPOOL CORP	$784.476	$8,384.059	8.56%	91.44%
WLL	WILLAMETTE INDUSTRIES	$4,857.000	$16,948.423	22.27%	77.73%
	Weighted Average	$409,885.684	$2,360,839.681	14.79%	85.21%
	Simple Average			15.16%	84.84%

Source: Research Insight Database - February 28, 2001

CAPITAL STRUCTURE COMPARISON
INCUMBENT LOCAL EXCHANGE CARRIERS
VERSUS
STANDARD & POOR'S INDUSTRIALS AND
COMPETIVE LOCAL EXCHANGE CARRIERS
DECEMBER 31, 1995 - DECEMBER 31, 1999

(Millions of Dollars)

Ticker	Comparable Firm	Average Debt	Average Common Equity Market Value	Debt Ratio	Equity Ratio
Incumbent Local Exhange Carriers:					
BLS	BELLSOUTH CORP	$12,220.800	$64,928.138	15.84%	84.16%
Q	QWEST COMUNICATION INTL INC	$8,391.400	$24,638.754	25.41%	74.59%
SBC	SBC COMMUNICATIONS INC	$16,879.200	$103,984.682	13.97%	86.03%
VZ	VERIZON COMMUNICATIONS	$36,459.520	$119,469.970	23.38%	76.62%
	Total Incumbent Local Exchange Carriers	$73,950.920	$313,021.544	19.11%	80.89%
Standard & Poor's Industrials		$409,885.684	$2,360,839.681	14.79%	85.21%
Competitive Local Exhange Carriers:					
AT	ALLTEL CORP	$2,984.250	$13,040.629	18.62%	81.38%
T	A T & T CORP	$23,892.200	$131,593.420	15.37%	84.63%
GX	GLOBAL CROSSING LTD	$1,284.228	$11,113.472	10.36%	89.64%
FON	SPRINT CORP (FON GROUP)	$4,542.520	$27,356.719	14.24%	85.76%
WCOM	WORLDCOM INC	$10,821.148	$68,146.869	13.70%	86.30%
	Total Interexchange Carriers	$43,524.346	$251,251.109	14.77%	85.23%
	Total Telecommunications Companies	$117,475.266	$564,272.653	17.23%	82.77%

Source: Research Insight Database - February 28, 2001

STANDARD & POOR'S INDUSTRIAL PROXY GROUP DEVELOPMENT

The Standard & Poor's ("S&P") Industrials is a widely published list of 376 large competitive firms excluding utilities, transportation firms, and financial firms. The group does include GTE Corporation and the Regional Bell Holding Companies ("RBHCs") as well as AT&T, MCI, Sprint, and other large telecommunications companies. Although the individual firms within the group may not individually be an exact proxy for a local exchange company, the composite risk of the S&P Industrials group is in line with the perceived future risk of the local exchange companies.

Screening of S&P Industrial Firms

In the Company's study certain companies were screened from the original 376 companies included in the S&P Industrials group as follows:

1. 44 firms that did not have information necessary to perform Discounted Cash Flow ("DCF") analysis or develop a 5-year average for market capital structure were eliminated from consideration.
2. 83 firms that pay no dividends were eliminated from consideration. Firms which do not pay regular dividends generally are relatively young, high growth firms and are not similar in risk to local exchange companies. The elimination of these firms from the group yields a more conservative DCF estimate for the cost of equity.

3. 11 firms that had less than 3 analyst earnings growth forecasts.

4. 22 firms that had unreasonable DCF results defined as being greater than or equal to 20% or lower than or equal to the cost of debt of 7.6%.

These three screens left 206 firms in the S&P Industrials group. The final step in selecting the group for the Company's study was to perform and rank DCF calculations for each of the 206 remaining firms from highest to lowest cost of equity estimates. The firms with the highest 25% and lowest 25% of cost of equity estimates were then eliminated from consideration. This screen also yields a more conservative DCF estimate for the cost of equity. After completion of this step, 102 firms with the middle of the range cost of equity estimates remained in the group.

THE QUARTERLY DCF MODEL
By Dr. James H. Vander Weide

The simple DCF Model assumes that a firm pays dividends only at the end of each year. Since firms in fact pay dividends quarterly and investors appreciate the time value of money, the annual version of the DCF Model generally underestimates the value investors are willing to place on the firm's expected future dividend stream. In this appendix, we review two alternative formulations of the DCF Model that allow for the quarterly payment of dividends.

When dividends are assumed to be paid annually, the DCF Model suggests that the current price of the firm's stock is given by the expression:

$$P_0 = \frac{D_1}{(1+k)} + \frac{D_2}{(1+k)^2} + \ldots + \frac{D_n + P_n}{(1+k)^n} \qquad (1)$$

where

P_0	=	current price per share of the firm's stock,
$D_1, D_2, \ldots, D_n$	=	expected annual dividends per share on the firm's stock,
P_n	=	price per share of stock at the time investors expect to sell the stock, and
k	=	return investors expect to earn on alternative investments of the same risk, i.e., the investors' required rate of return.

Unfortunately, expression (1) is rather difficult to analyze, especially for the purpose of estimating k. Thus, most analysts make a number of simplifying assumptions. First, they assume that dividends are expected to grow at the constant rate g into the indefinite future. Second, they assume that the stock price at time n is simply the present value of all dividends expected in periods

subsequent to n. Third, they assume that the investors' required rate of return, k, exceeds the expected dividend growth rate g. Under the above simplifying assumptions, a firm's stock price may be written as the following sum:

$$P_0 = \frac{D_0(1+g)}{(1+k)} + \frac{D_0(1+g)^2}{(1+k)^2} + \frac{D_0(1+g)^3}{(1+k)^3} + \ldots , \qquad \textbf{(2)}$$

where the three dots indicate that the sum continues indefinitely. As we shall demonstrate shortly, this sum may be simplified to:

$$P_0 = \frac{D_0(1+g)}{(k-g)}$$

First, however, we need to review the very useful concept of a geometric progression.

Geometric Progression

Consider the sequence of numbers 3, 6, 12, 24,..., where each number after the first is obtained by multiplying the preceding number by the factor 2. Obviously, this sequence of numbers may also be expressed as the sequence 3, 3 x 2, 3 x 2^2, 3 x 2^3, ... This sequence is an example of a geometric progression.

> Definition: A geometric progression is a sequence in which each term after the first is obtained by multiplying some fixed number, called the common ratio, by the preceding term.

A general notation for geometric progressions is: a, the first term, r, the common ratio, and n, the number of terms. Using this notation, any geometric progression may be represented by the sequence:

$$a, ar, ar^2, ar^3, \ldots, ar^{n-1}.$$

In studying the DCF Model, we will find it useful to have an expression for the sum of n terms of a geometric progression. Call this sum S_n. Then

$$S_n = a + ar + \ldots + ar^{n-1} . \qquad (3)$$

However, this expression can be simplified by multiplying both sides of equation (3) by r and then subtracting the new equation from the old. Thus,

$$rS_n = ar + ar^2 + ar^3 + \ldots + ar^n$$

and

$$S_n - rS_n = a - ar^n ,$$

or

$$(1 - r) S_n = a (1 - r^n) .$$

Solving for S_n, we obtain

$$S_n = \frac{a(1 - r^n)}{(1 - r)} \qquad (4)$$

as a simple expression for the sum of n terms of a geometric progression. Furthermore, if ,r, < 1, then S_n is finite, and as n approaches infinity, S_n approaches a) (1-r). Thus, for a geometric progression with an infinite number of terms and ,r, < 1, equation (4) becomes

$$S = \frac{a}{1 - r} \qquad (5)$$

Application to DCF Model

Comparing equation (2) with equation (3), we see that the firm's stock price (under the DCF assumption) is the sum of an infinite geometric progression with the first term

$$a = \frac{D_0(1+g)}{(1+k)}$$

and common factor

$$r = \frac{(1+g)}{(1+k)}$$

Applying equation (5) for the sum of such a geometric progression, we obtain

$$S = a \bullet \frac{1}{(1-r)} = \frac{D_0(1+g)}{(1+k)} \bullet \frac{1}{1-\frac{1-g}{1-k}} = \frac{D_0(1+g)}{(1+k)} \bullet \frac{1+k}{k-g} = \frac{D_0(1+g)}{k-g}$$

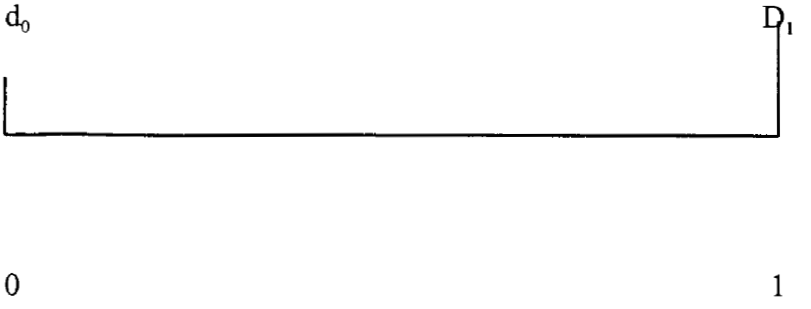
as we suggested earlier.

Quarterly DCF Model

The Annual DCF Model assumes that dividends grow at an annual rate of g% per year (see Figure 1).

Figure 1

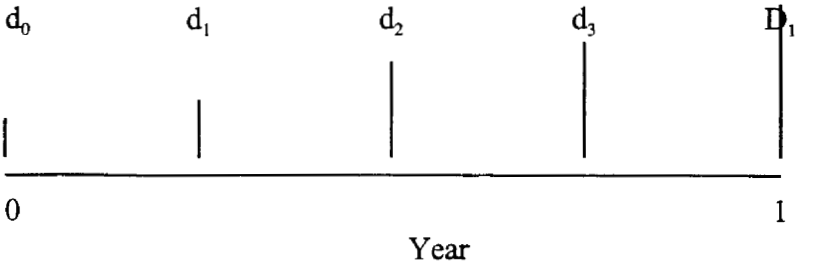
Annual DCF Model



$D_0 = 4d_0$ $D_1 = D_0(1 + g)$

Figure 2

Quarterly DCF Model (Constant Growth Version)



$d_1 = d_0(1+g)^{.25}$ $d_2 = d_0(1+g)^{.50}$

$d_3 = d_0(1+g)^{.75}$ $d_4 = d_0(1+g)$

In the Quarterly DCF Model, it is natural to assume that quarterly dividend payments differ from the preceding quarterly dividend by the factor $(1 + g)^{.25}$, where g is expressed in terms of percent per year and the decimal .25 indicates that the growth has only occurred for one quarter of the year. (See Figure 2.) Using this assumption, along with the assumption of constant growth and $k > g$, we obtain a new expression for the firm's stock price, which takes account of the quarterly payment of dividends. This expression is

$$P_0 = \frac{d_0(1+g)^{\frac{1}{4}}}{(1+k)^{\frac{1}{4}}} + \frac{d_0(1+g)^{\frac{2}{4}}}{(1+k)^{\frac{2}{4}}} + \frac{d_0(1+g)^{\frac{3}{4}}}{(1+k)^{\frac{3}{4}}} + \ldots \quad (6)$$

where d_0 is the last quarterly dividend payment, rather than the last annual dividend payment. (We use a lower case d to remind the reader that this is not the annual dividend.)

Although equation (6) looks formidable at first glance, it too can be greatly simplified using the formula [equation (4)] for the sum of an infinite geometric progression. As the reader can easily verify, equation (6) can be simplified to:

$$P_0 = \frac{d_0(1+g)^{\frac{1}{4}}}{(1+k)^{\frac{1}{4}} - (1+g)^{\frac{1}{4}}} \quad (7)$$

Solving equation (7) for k, we obtain a DCF formula for estimating the cost of equity under the quarterly dividend assumption:

$$k = \left[\frac{d_0(1+g)^{\frac{1}{4}}}{P_0} + (1+g)^{\frac{1}{4}} \right]^4 - 1 \qquad \textbf{(8)}$$

An Alternative Quarterly DCF Model

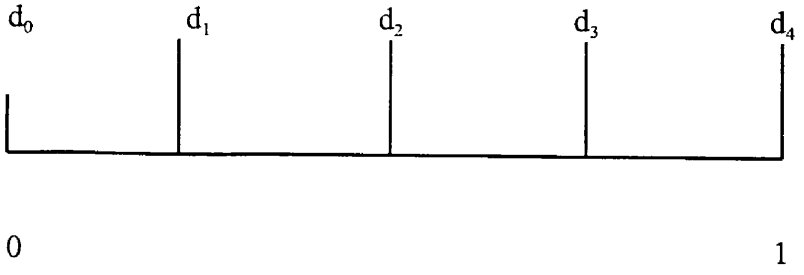
Although the constant growth Quarterly DCF Model [equation (8)] allows for the quarterly timing of dividend payments, it does require the assumption that the firm increases its dividend payments each quarter. Since this assumption is difficult for some analysts to accept, we now discuss a second Quarterly DCF Model that allows for constant quarterly dividend payments within each dividend year.

Assume then that the firm pays dividends quarterly and that each dividend payment is constant for four consecutive quarters. There are four cases to consider, with each case distinguished by varying assumptions about where we are evaluating the firm in relation to the time of its next dividend increase. (See Figure 3.)

Figure 3

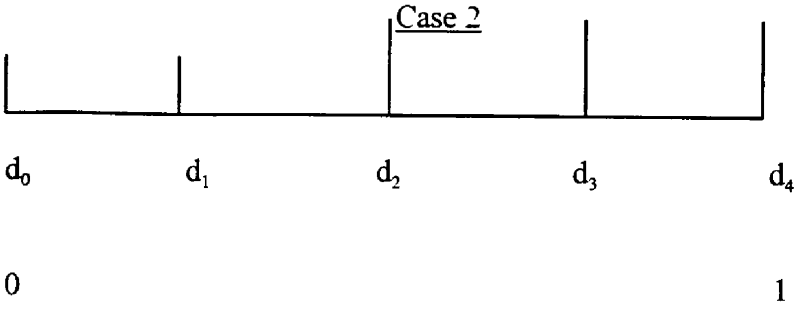
Quarterly DCF Model (Constant Dividend Version)

Case 1



$$d_1 = d_2 = d_3 = d_4 = d_0(1+g)$$

Case 2

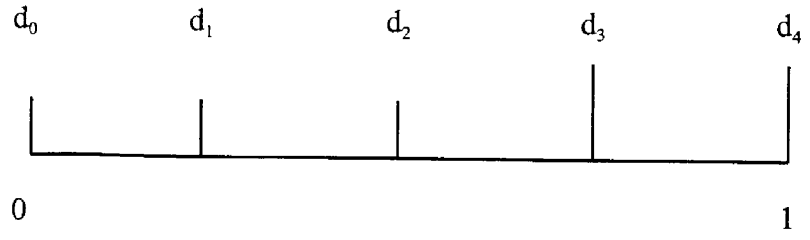


$$d_1 = d_0$$

$$d_2 = d_3 = d_4 = d_0(1+g)$$

Figure 3 (continued)

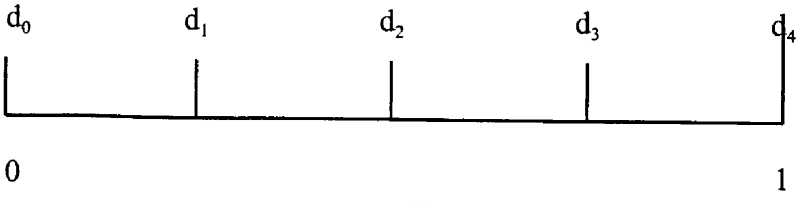
Case 3



$$d_1 = d_2 = d_0$$

$$d_3 = d_4 = d_0(1+g)$$

Case 4



$$d_1 = d_2 = d_3 = d_0$$

$$d_4 = d_0(1-g)$$

If we assume that the investor invests the quarterly dividend in an alternative investment of the same risk, then the amount accumulated by the end of the year will in all cases be given by

$$D_1^* = d_1 (1+k)^{3/4} + d_2 (1+k)^{1/2} + d_3 (1+k)^{1/4} + d_4$$

where d_1, d_2, d_3 and d_4 are the four quarterly dividends. Under these new assumptions, the firm's stock price may be expressed by an Annual DCF Model of the form (2), with the exception that

$$D_1^* = d_1 (1 + k)^{3/4} + d_2 (1 + k)^{1/2} + d_3 (1 + k)^{1/4} + d_4 \qquad \textbf{(9)}$$

is used in place of $D_0(1+g)$. But, we already know that the Annual DCF Model may be reduced to

$$P_0 = \frac{D_0(1+g)}{k-g}$$

Thus, under the assumptions of the second Quarterly DCF Model, the firm's cost of equity is given by

$$k = \frac{D_1^*}{P_0} + g \qquad \textbf{(10)}$$

with D_1^* given by (9).

Although equation (10) looks like the Annual DCF Model, there are at least two very important practical differences. First, since D_1* is always greater than $D_0(1+g)$, the estimates of the cost of equity are always larger (and more accurate) in the Quarterly Model (10) than in the Annual Model. Second, since D_1* depends on k through equation (9), the unknown "k" appears on both sides of (10), and an iterative procedure is required to solve for k.