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**TO:** Steven Ingram, Director of Tax  
AT&T, Inc.

**FROM:** Doug Roehm, Unit Manager  
Centrally Assessed Property

**DATE:** April 28, 2023

**SUBJECT:** Response to Comments on the 2023 Capitalization Rate Study,  
Large Telecommunications

Dear Mr. Ingram:

The department would like to thank you for taking the time to review our study and for providing additional information for us to consider. We received your submission email on April 4, 2023.

The comments received are posted along with these responses on our website at:  
<https://mtrevenue.gov/dor-publications/cap-rate-studies/>

In summary, the comments primarily focused on concerns with the Capital Asset Pricing Model, a preference for the Build-up Model, the current spread between equity rates and debt rates, and weighting of the various cost of equity estimates when selecting an equity rate.

Based on the comments, and our analysis discussed below, we moved 10% weight from the Capital Asset Pricing Model to the Dividend Discount Model and we incorporated additional cost of debt information from the Kroll study and made a correction for an error in the Dividend Discount Model. The resulting cost of equity for Large Telecommunications was determined to be 10.15% initially 10.13% and the corresponding Weighted Average Cost of Capital was determined to be 7.60% initially 7.55%.

A more detailed discussion on how we arrived at these conclusions follows.

## Cost of Equity

### Beta and Market Risk

The Capital Asset Pricing Model (CAPM) continues to be one of the most widely used models for estimating the cost of equity capital. We do recognize that it has some limitations and is not

without its criticism. One of the primary criticisms of CAPM is related to beta, yet the concerns as they relate to beta are greatly minimized in the context of determining the cost of equity for large publicly traded companies.

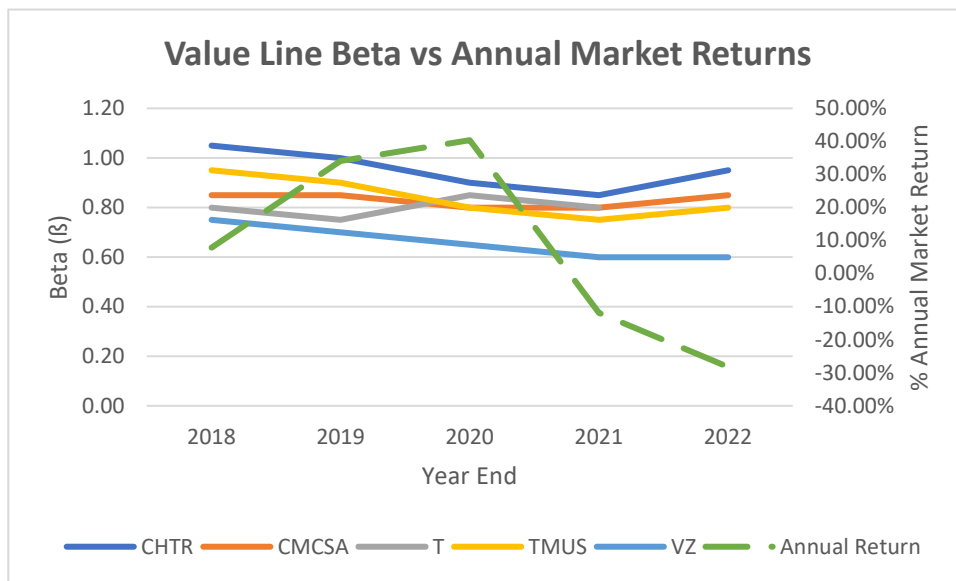
The text, *Cost of Capital Applications and Examples* by Pratt and Grabowski, provides a good description of the difficulty in selecting betas for some companies.

if a company is not publicly traded the selection of a beta generally requires identification of public companies from which to develop a proxy beta. For some industries, especially those characterized by many small companies, relevant public companies on which to base an estimate of beta simply do not exist.<sup>1</sup>

These concerns primarily relate to small companies in industries with limited publicly traded companies. This is not the case with large telecommunications companies.

An argument was also being made that the beta is not adequately capturing company risk. However, it is the equity risk premium that is intended to capture changing market risk. The beta is intended to capture the change in price of a particular company or industry as compared to the general market.

For example, the chart below was put together to demonstrate that betas for large telecommunications guideline companies have remained relatively consistent over the past 5 years, despite large changes in market returns.



<sup>1</sup> Pg 191

As discussed above, changes in risk or market return are captured in the selection of risk premium. For example, in development of CAPM for tax year 2023, we assumed a ~200 basis points increase in market risk compared to tax year 2022, which also carried forward to the selected cost of equity.

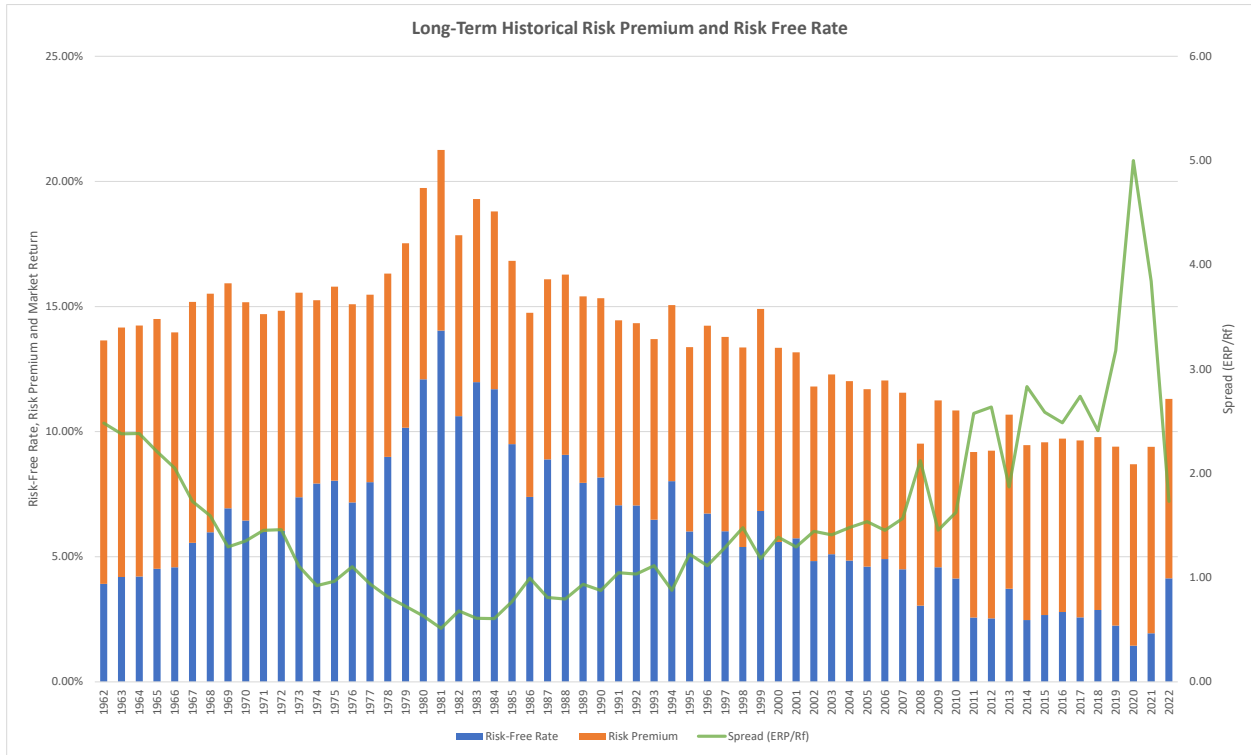
	CAPM Ex Post			CAPM Ex Ante		
	TY 2023	TY 2022	Increase	TY 2023	TY 2022	Increase
Market Rate of Return	11.31%	9.40%	1.91%	9.82%	7.85%	1.97%
Selected Cost of Equity	9.88%	7.91%	1.97%	8.68%	6.67%	2.01%

We continue to believe that CAPM is a reliable indicator for large telecommunications companies and that our equity rate selection incorporates the increased market risk for tax year 2023 compared to 2022. However, to address these concerns as well as other concerns commented on, we did move 10% of the weight initially assigned to CAPM to the Dividend Growth Model (DGM).

Spread Between Debt and Equity Rates

We agree that the cost of equity should be higher than the cost of debt as an equity investor has greater risk than a debt holder. We also recognize that the spread between debt and equity has contracted this year compared to the prior year. However, the spread between debt and equity is not constant. One way to demonstrate this is to compare the equity risk premium vs the risk-free rate over time.

The chart below was developed from the long-term historical risk premium and risk-free rate data to show how the spread between the equity risk premium and the risk-free rate varies over time. The spread between the risk premium and risk-free rate is demonstrated by the green line and shows that the spread is not constant and primarily changes along with the risk-free rate.



The equity risk premium as well as the cost of equity compared to the cost of debt is not constant and varies over time.

### Build-Up Method

The Build-up method is an alternative to the Capital Asset Pricing Model. It is still based on the same two major components of a risk-free rate and a risk premium. However, the build-up method breaks the risk premium into three subcomponents, a general equity risk premium, a small-company risk premium, and a company-specific risk premium or alternatively an industry risk premium.

The general formula for the Build-up method is:<sup>2</sup>

$$K_e = R_f + RP_m + RP_s + \text{or} - RP_c$$

$K_e$  = Expected return for the asset being valued

$R_f$  = Rate of return available on a risk-free security as of the valuation date

$RP_m$  = General expected equity risk premium (ERP) for the "market"

$RP_s$  = Risk premium for small size

$RP_c$  = Risk premium attributable to the specific company or to the industry

The primary concern we have with the build-up methods completed by Kroll, for large telecommunications, are that they have not included a company specific risk or industry risk adjustment. Kroll has excluded the build-up methods that include an industry risk premium. For example, the two tables below compare the Build-up 1 as computed by Kroll to the build-up method 2 that would be produced using the same assumptions as the build-up 1 method and by selecting the industry, "GICS 5010 Telecommunications Services" with a corresponding industry risk premium of -2.76%.

<b>Build-up 1 (Levered)</b>							
Size Measure	$K_e$	=	$R_f$	+	$RP_m+s$	+	ERP Adj
Market Value of Common Equity	10.31%	=	4.14%	+	5.76%	+	0.41%
Book Value of Equity	10.41%	=	4.14%	+	5.86%	+	0.41%
5-Year Average Net Income	9.83%	=	4.14%	+	5.28%	+	0.41%
Market Value of Invested Capital	10.39%	=	4.14%	+	5.84%	+	0.41%
Total Assets	10.06%	=	4.14%	+	5.51%	+	0.41%
5-Year Average EBITDA	9.98%	=	4.14%	+	5.43%	+	0.41%
Net Sales	10.79%	=	4.14%	+	6.24%	+	0.41%
Number of Employees	12.05%	=	4.14%	+	7.50%	+	0.41%
Average	10.48%		4.14%		5.93%		0.41%

<b>Build-up 2</b>									
Size Measure	$K_e$	=	$R_f$	+	ERP	+	$RP_i$	+	$RP_s$
Market Value of Common Equity	7.91%	=	4.14%	+	6.00%	+	-2.76%	+	0.53%
Book Value of Equity	8.69%	=	4.14%	+	6.00%	+	-2.76%	+	1.31%
5-Year Average Net Income	8.26%	=	4.14%	+	6.00%	+	-2.76%	+	0.88%
Market Value of Invested Capital	8.13%	=	4.14%	+	6.00%	+	-2.76%	+	0.75%
Total Assets	8.34%	=	4.14%	+	6.00%	+	-2.76%	+	0.96%
5-Year Average EBITDA	8.39%	=	4.14%	+	6.00%	+	-2.76%	+	1.01%
Net Sales	8.63%	=	4.14%	+	6.00%	+	-2.76%	+	1.25%
Number of Employees	8.99%	=	4.14%	+	6.00%	+	-2.76%	+	1.61%
Average	8.42%		4.14%		6.00%		-2.76%		1.04%

This demonstrates the primary difference between the two of about 2% (10.48% vs 8.42%), is attributable to the fact that the telecommunications services industry has less risk than the general market.

<sup>2</sup> Cost of Capital, Pg. 178

Mr. Ingram  
April 28, 2023  
p. 6

It is our conclusion that when industry risk for large telecommunications is properly addressed through an industry risk premium or a company specific risk premium the resulting equity rate is not materially different from the equity rate the department has concluded to.

## **Correction of Error in Initial Dividend Discount Model**

An error was discovered and corrected in the Dividend Discount Model. The 2023 estimated dividends declared per share were pulling from the wrong source. This was corrected and resulted in a downward adjustment to the selected cost of equity using both dividend and earnings growth.

## **Weighting of Indicators**

Comments were also made in response to the weighting of the various indicators. In response to these comments and the comments in general, we did decide to move 10% of the weight from the Capital Asset Pricing Model to the Dividend Discount Model.