

Unit Valuation Insights

ESTIMATING A COMPANY-SPECIFIC RISK PREMIUM IN THE COST OF CAPITAL FOR AD VALOREM TAX VALUATION PURPOSES

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The company-specific risk premium should be considered in all unit valuation analyses performed for ad valorem tax purposes. This is because an investment in the subject taxpayer corporation operating assets is typically more risky than an investment in a diversified portfolio of marketable securities—that is, the benchmark that is typically used to estimate the taxpayer corporation cost of equity capital. While the estimation of a company-specific risk premium is ultimately based on the valuation analyst’s professional judgment, this discussion presents (1) various factors that may be considered by the valuation analyst and (2) several procedures that may be used by the valuation analyst to estimate the company-specific risk premium in an ad valorem tax unit valuation.

INTRODUCTION

Most states and some local jurisdictions centrally assess utility, transportation, communications, and similar companies for ad valorem tax purposes. These industrial and commercial taxpayer corporations are typically assessed based on the use of unit (or business enterprise) valuation methods, as opposed to the use of summation (or property build-up) valuation methods.

When tax assessors (and taxpayer corporation valuation analysts) perform a unit valuation, they use the three generally accepted property valuation approaches—that is, the cost approach, the sales comparison approach, and the income approach. The most common income approach valuation methods are yield capitalization method and the direct capitalization method.

To estimate the value of the subject taxpayer corporation unit of operating assets, the yield capitalization method uses a present value discount rate, and the direct capitalization method uses a direct capitalization rate. Both the discount rate and the direct capitalization rate reflect required rates of return on investment, given the risk associated with the subject taxpayer corporation property.

The relationship between risk and expected return is one of the fundamental cost of capital issues related to the unit valuation for ad valorem tax purposes. Valuation analysts use generally accepted procedures for measuring expected

investment rates of return. These measures include net present value, internal rate of return, payback period, profit margin, return on assets, and return on invested capital. Valuation analysts also use generally accepted procedures for measuring the taxpayer corporation property investment risk. These procedures include measures of the general equity risk premium, the industry adjustment risk premium, and the size adjustment risk premium.

However, valuation analysts do not have generally accepted procedures for measuring company-specific risk. This statement is correct in spite of the fact that the concept of a company-specific risk adjustment in measuring the taxpayer corporation cost of capital is generally accepted. Mostly due to empirical data constraints, the analytical mechanics for quantifying the company-specific risk premiums are not as rigorous as the analytical mechanics used to quantify the other cost of capital components.

Accordingly, the topics addressed in this discussion are twofold: (1) identifying company-specific investment risk and (2) measuring the company-specific risk premium (CSRP). This discussion reviews several sets of factors that valuation analysts typically consider when selecting the appropriate CSRP in an ad valorem tax unit valuation.

This discussion also summarizes the procedures that valuation analysts typically use to select a specific CSRP measurement based on the valuation analyst’s assessment of the relevant CSRP factors.

COMPANY-SPECIFIC RISK PREMIUM TERMINOLOGY

In the current academic literature related to investment analysis and portfolio management, “company-specific risk” is interchangeably referred to as: “investment-specific risk,” “property-specific risk,” “nonsystematic risk,” “unsystematic risk,” “nondiversifiable risk,” and “idiosyncratic risk.” With regard to the ad valorem unit valuation of taxpayer corporation operating assets, while the term “investment-specific risk” seems most appropriate, the term “company-specific risk” appears to be most commonly used.

This latter terminology is appropriate for purposes of this discussion. This is because most of the risk factors that are specific to the subject unit of operating assets also affect the taxpayer corporation that is the owner/operator of the subject taxable assets.

Regardless of the terminology used to name this type of risk, the CSRP is typically the last component applied when quantifying the taxpayer corporation’s total investment risk. It is the component of risk that makes an investment in the subject taxable property (1) unique and (2) different from any benchmark investments that are used to measure capitalization rates, valuation pricing multiples, and other valuation metrics.

In many (but not all) types of property transactions, investors expect to be compensated for the assumption of company-specific risk. However, investors generally do not expect to be compensated for the CSRP in those types of security sale transactions in which the company-specific risk can be diversified away.

This risk diversification process is a conceptual cornerstone of modern corporate finance principles. However, the following discussion explains why this risk diversification process is typically not applicable in the unit valuation of taxpayer corporation operating assets.

Regardless of what name is assigned to this particular type of taxpayer investment risk component, company-specific risk is difficult to (1) identify, (2) measure, and (3) correlate with the appropriate incremental rate of return.

“Regardless of the terminology used to name this type of risk, the CSRP is typically the last component applied when quantifying the taxpayer corporation’s total investment risk.”

“For investments that lack the risk mitigation influences of liquidity, diversification, and limited liability, company-specific risk cannot be diversified away. . . .”

HOW TO CONSIDER COMPANY-SPECIFIC RISK IN THE UNIT VALUATION OF TAXPAYER CORPORATION OPERATING ASSETS

Company-specific risk should be considered in every ad valorem tax unit valuation where the taxpayer corporation operating assets are:

1. not perfectly liquid,
2. not perfectly diversified, or
3. not subject to limited liability.

For investments that lack the risk mitigation influences of liquidity, diversification, and limited liability, company-specific risk cannot be diversified away. For investments that benefit from these particular risk mitigation influences, company-specific risk can be diversified away (in part or in total).

The CSRP is used directly in the income approach when the valuation analyst estimates the cost of equity capital for purposes of:

1. an income valuation analysis of an equity security;
2. the cost of equity component of the weighted average cost of capital (WACC) for use in an income valuation analysis of invested capital;
3. a yield capitalization method using the discounted cash flow valuation procedure; or
4. a direct capitalization method using the “Gordon growth model” procedure. The Gordon growth model (also called the constant growth model) is a direct capitalization procedure that determines the value of a stock based on an assumption that the stock pays a dividend that grows at a constant rate each year.

An analysis of the CSRP should be considered indirectly in the application of both the sales comparison approach and the cost approach when:

1. selecting guideline publicly traded companies and guideline unit sale transactions,

2. extracting subject-specific pricing multiples from guideline publicly traded companies/unit sale transactions,
3. quantifying the entrepreneurial incentive cost approach component of a replacement (or reproduction) cost new less depreciation method, and
4. quantifying the economic obsolescence cost approach component of the total obsolescence adjustment in any cost approach method.

Significantly, the magnitude of the same taxpayer corporation's company-specific risk may vary based on the nature of the valuation analyst's assignment. That is, an individual taxpayer corporation company-specific risk may vary based on:

1. the statutory or other standard of value selected in the valuation assignment (e.g., fair market value versus fair value versus investment value versus owner value);
2. the statutory or other level of value selected in the subject valuation assignment; and
3. the statutory or other premise of value appropriate for the subject valuation assignment.

"There are five generally accepted cost of equity capital models that are commonly used in the unit valuation of industrial or commercial taxpayer operating assets."

it was originally developed? These inexperienced valuation analysts effectively ask: why do we need to modify the CAPM (or any other generally accepted cost of equity model) for consideration of company-specific risk?

The answer is that the CAPM (and each other cost of equity model) is perfectly suited for the purpose for which it was developed. The purpose for which the CAPM was developed, however, is not the purpose to which ad valorem tax valuation analysts generally apply this cost of equity model.

The CAPM was developed for, and is used by, money managers, investment managers, and fund managers who invest in publicly traded securities as part of a well-diversified portfolio of publicly traded securities. The CAPM (and each other cost of equity model) is well-suited to estimate the required return on investment for this valuation purpose.

Ad valorem tax valuation analysts, however, need to estimate the cost of equity capital for the purpose of a valuation of non-publicly-traded taxpayer corporation operating assets. Accordingly, the CAPM has to be modified to achieve this fundamentally different valuation purpose.

COST OF EQUITY CAPITAL MEASUREMENT MODELS

There are five generally accepted cost of equity capital models that are commonly used in the unit valuation of industrial or commercial taxpayer operating assets. The current valuation and corporate finance literature employs various names for these five models.

For purposes of this discussion, these five generally accepted cost of equity capital measurement models are called:

1. the modified capital asset pricing model,
2. the build-up model,
3. the dividend yield plus capital gain yield model,
4. Duff & Phelps Corporate Value Consulting risk premium model, and
5. the arbitrage pricing theory model.

Inexperienced valuation analysts sometimes ask: why not use the CAPM (or any other cost of equity model) as

HOW THE CSRP MODIFIES THE COST OF EQUITY CAPITAL MEASUREMENT MODELS

". . . because of the nature of the subject taxpayer operating property investment, the company-specific investment risk cannot be eliminated through the process of public company investment portfolio diversification."

The purpose of the CSRP is to compensate investors for the type of investment risk that cannot be diversified away. In other words, the CSRP adjusts the cost of equity in order to derive a required rate of return commensurate with the total level of investment risk associated with the subject investment. Furthermore, because of the nature of the subject taxpayer operating

property investment, the company-specific investment risk cannot be eliminated through the process of public company investment portfolio diversification.

The CAPM (and every other cost of equity model) assumes that nonsystematic investment risk (i.e., nonbeta risk) can be diversified away. Taxpayer corporation owner/operators of operating property, however, actually face the investment risks that are assumed away by CAPM (and by other cost of equity models). To a taxpayer corporation (unlike a diversified investment portfolio manager), these nonsystematic risks cannot be diversified away.

Moreover, these particular types of investment risk are intrinsic to these types of taxable operating property investments. Because of the very nature of these taxable operating property investments, these types of risks cannot be diversified away—and should not be assumed away—by the valuation analyst.

Accordingly, company-specific risk cannot be diversified away for these types of (1) taxpayer operating asset investments and (2) taxpayer owner/operator investors. Therefore, such investors require an investment rate of return that is commensurate with such investment risk. The CSRPs adjust the CAPM (and the other cost of equity models) so as to produce such a risk-adjusted required rate of return.

METHODS TO QUANTIFY THE CSRPs

For all of the generally accepted cost of equity models, there are recognized data sources available to allow the ad valorem tax valuation analyst to measure (1) the risk-free rate of return, (2) the general equity risk premium, (3) the industry equity risk premium, and (4) the size adjustment equity risk premium.

These generally accepted data sources are used by the valuation analyst to create a baseline or a benchmark required rate of return—based on a baseline or benchmark investment.

The valuation analyst then compares the risk attributes of this benchmark investment to the risk attributes of actual subject investment. Based on this comparison, the valuation analyst has to decide how much (if any) additional risk is associated with the subject taxpayer property investment—compared with the benchmark investment. Based on this comparison, the valuation analyst will decide if a CSRPs is appropriate.

There is, however, no generally accepted model, formula, equation, or method available for the valuation analyst to quantitatively measure the CSRPs. The only “model” available to measure the CSRPs is the valuation analyst’s informed professional judgment, based on the valuation analyst’s studied consideration of various generally recognized factors. Over the years, several valuation analysts have suggested various sets of factors that should be considered with regard to the CSRPs selection process.

This discussion considers the following three sets of recognized CSRPs factors that have been assembled by three sets of valuation analysts.

1. the Black/Green factors
2. the Warren Miller factors
3. the Gary Trugman factors

The Black/Green Factors

Parnell Black and Robert Green (of Black/Green & Company in Salt Lake City, Utah) have suggested a set of CSRPs factors for the valuation analyst’s consideration. These factors are described in various publications and training materials of the National Association of Certified Valuation Analysts.

The various Black/Green CSRPs factors are summarized in the following six categories:

1. competition
2. financial strength
3. management ability and depth
4. profitability and stability of earnings
5. national economic effects
6. local economic effects

Black and Green suggest individual quantitative and qualitative assessments within each of the first four categories of CSRPs factors. In order to conclude an appropriate CSRPs, the valuation analyst assigns a specific point value (ranging from one point for low risk to ten points for high risk) to each individual factor assessment. The assigned point value is based on the valuation analyst’s assessment and opinion of that particular risk factor.

For each of the last two economic factor categories, the valuation analyst assigns a point value of “minus one” for a strong economy, “plus one” for a weak economy, and “zero” for a neutral economy. Again, the assigned point value is based on the valuation analyst’s assessment and opinion of these economic factors.

The sum of (1) all of the point values in the first four categories (weighted by the number of individual factors in each category) and (2) all of the point values in the last two categories, provides an indication of the appropriate CSRPs.

The Warren Miller Factors

Warren Miller (of Beckmill Research, in Lexington, Virginia) has suggested a competitive advantage/strategic analysis structure for estimating the appropriate CSRPs. In a series of articles published between 1999 and 2002 in the American Institute of Certified Public Accountant quarterly newsletter, *CPA Expert*, Miller groups into three categories the CSRPs factors to be considered in a strengths, weaknesses, opportunities, and threats (SWOT) analysis.¹ These three categories of SWOT-related factors are based on the ground-breaking strategic planning and analysis work of Michael E. Porter.

“The only ‘model’ available to measure the CSRPs is the valuation analyst’s informed professional judgment. . . .”

Miller's three categories of individual CSR factors are as follows:

1. macroenvironmental
2. industry
3. company

Miller suggests a subgroup of factors to consider within each of the three general categories of factors. Miller also suggests a rigorous application of the Porter "five forces" competitive analysis as part of the valuation analyst's process of judgmentally selecting the appropriate CSR.

The Gary Trugman Factors

In *Understanding Business Valuation*, Gary Trugman (of Trugman Valuation Associates in Ft. Lauderdale, Florida) presents a comprehensive discussion of the factors that valuation analysts may consider in selecting the CSR.²

Trugman presents categories of individual CSR factors. Valuation analysts may consider each of these quantitative and qualitative factors in judgmentally selecting the appropriate CSR.

One of the Trugman categories of CSR considerations relates to the following taxpayer corporation risk factors:

1. economy risk
2. operating risk
3. asset risk
4. market risk
5. regulatory risk
6. business risk
7. financial risk
8. product risk
9. technological risk
10. legal risk

Trugman presents another category of CSR considerations relating to the following taxpayer corporation non-financial factors:

1. economic conditions
2. location of business
3. depth of management
4. barriers to entry into market

5. industry conditions
6. competition
7. quality of management
8. the bottom line

A company-specific assessment of all of these factors is relevant to the CSR selection process. Further, as with all of the lists of CSR factors, the ad valorem tax valuation analyst has to ultimately rely on informed judgment and professional experience to select a specific CSR measurement.

PROCEDURES FOR THE VALUATION ANALYST TO EXPLAIN THE SELECTED CSR

There are three common procedures for (1) selecting the specific CSR based on the analysis of the taxpayer company-specific risk factors, and (2) explaining the ultimate selection of the CSR to the reader of the unit valuation report.

These three CSR measurement procedures are often called:

1. the plus/minus procedure,
2. the number procedure, or
3. the listing procedure

All three of these procedures start with a listing of the relevant CSR factors selected by the valuation analyst.

The Plus/Minus Procedure

In the plus/minus (or +/-) procedure, the valuation analyst indicates either a "+" notation or a "-" notation next to each selected factor. The plus notation indicates that the factor increases the appropriate CSR; the minus notation indicates that the factor decreases the appropriate CSR. A blank notation indicates that the factor has a neutral impact on the appropriate CSR.

Double or triple notations (e.g., ++ or ---) indicate that the individual factor has a particularly positive or a particularly negative impact on the ultimate selection of the CSR. Each plus/minus notation, however, does not represent one percentage point.

Ultimately, the selection of the CSR is based on the valuation analyst's professional judgment. The measurement of the CSR is not the mathematical sum of "plus" and "minus" indications.

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The Numeric Procedure

Using the numeric procedure, the valuation analyst assigns a specific percentage number to each indicated CSRPs factor.

If the analyst assigns “2.0” to a particular factor, that indicates that the analyst will add two percentage points to the ultimate selection of the CSRPs factor. If the analyst assigned “(1.0)” to a particular factor, that means that the analyst will subtract one percentage point from the ultimate selection of the CSRPs. And, if the analyst assigns “0” to a particular factor, that factor has no impact on the final CSRPs.

In contrast to the previously described “plus/minus” procedure, in the numeric procedure the selected CSRPs is the actual numeric summation of all of the individually assigned numeric values for each selected factor.

The Listing Procedure

Using the listing procedure, the valuation analyst lists all of the negative and all of the positive company-specific risk factors. The valuation analyst does not assign a numeric value to either the negative factors or the positive factors. And, the valuation analyst does not indicate the relative importance of any of the factors.

With the listing procedure, the valuation analyst again ultimately selects a specific CSRPs figure based on his or her professional judgment.

A Simplified Illustration

Table 1 depicts the three common CSRPs explanation procedures as applied to an illustrative unit valuation of taxpayer corporation operating assets. In this illustrative example, the valuation analyst identified the strategic, financial, and operational risk factors that most affect the taxpayer corporation unit of operating assets.

Based on a due diligence analysis, the valuation analyst assessed each positive and each negative company-specific risk factor affecting the taxpayer corporation operating assets. The valuation analyst reported three alternative presentations of the same taxpayer corporation company-specific risk analysis in Table 1.

Table 1 illustrates the three alternative presentation formats or procedures (i.e., plus/minus, numeric, and listing) of the analyst-selected CSRPs factors in this hypothetical taxpayer corporation analysis. Significantly, regardless of the presentation procedure selected, the valuation analyst consistently selected 7 percent as the appropriate CSRPs.

Based on this illustrative example, this 7 percent CSRPs is the appropriate cost of equity capital adjustment in the income approach valuation of the taxpayer corporation unit of operating assets.

SUMMARY AND CONCLUSION

In all unit valuation analyses, there is a direct relationship between investment risk and expected investment return. Furthermore, the measurement of expected investment return is involved in virtually every type of valuation assignment that an ad valorem tax valuation analyst performs.

There are generally accepted procedures for measuring expected investment return, and for measuring all of the components of investment risk—except for the company-specific risk.

In addition, there are generally accepted procedures for adjusting the expected investment return for all of the components of risk—except for the company-specific risk. Further, in many cases, company-specific risk may be a material component of the total property investment risk in the taxpayer corporation unit valuation analysis.

There are generally accepted cost of equity capital measurement models, and the CSRPs is a component of each of these models. There are generally accepted empirical data sources for the quantitative measurement of all of the other

cost of equity model components. There are no generally accepted empirical data sources, however, for the quantitative measurement of the CSRPs.

Ultimately, the selection of the CSRPs is based on the ad valorem tax valuation analyst’s informed judgment regarding numerous financial, operational, and strategic factors related to the subject unit of taxpayer operating assets.

The CSRPs analysis should be considered directly in all income approach unit valuation analyses. Also, the CSRPs should be considered indirectly in all sales comparison approach and all cost approach unit valuation analyses.

Notes:

1. Warren D. Miller, “Assessing Unsystematic Risk” (Parts I, II and III), *CPA Expert* (Summer 1999, Winter 2000, and Summer 2000).
2. Gary R. Trugman, *Understanding Business Valuation*, 2d ed. (New York: American Institute of Certified Public Accountants, 2002), pp. 331–334.

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Table 1
Illustrative Taxpayer Corporation
Company-Specific Risk Premium Analysis:
Comparison of the Common Alternative
CSRP Explanation Procedures

	Plus/Minus Procedure	Numeric Procedure	Listing Procedure
<u>The Taxpayer Corporation Unit of Operating Assets:</u>			
<u>Negative Risk Factors</u>			
1. Operating history, volatility of revenues and earnings	+++	3.5	■
2. Lack of product diversification	++	1	■
3. Computer systems obsolescence	+	0.5	■
4. Key technology dependence	++	1	■
5. Inability to affect competitive product pricing	+	0.5	■
6. Lack of customer diversification		0	
7. Lack of competitive marketing resources	+	0.5	■
8. Lack of purchasing power and other economies of scale		0	
9. Lack of product development and R&D resources	+	0.5	
10. Key supplier dependence		0	
11. Distribution system obsolescence	-	0	
12. Financial reporting and internal control systems obsolescence	+	0.5	■
<u>The Taxpayer Corporation Unit of Operating Assets:</u>			
<u>Positive Risk Factors</u>			
1. Long-term product sale contracts with well-established customers		0	
2. Ownership/license of proprietary patents, copyrights, trademarks, and trade secrets	-	(1)	■
<u>Selected CSRP Percent for the Subject Taxpayer Corporation Unit of Operating Assets</u>	<u>7%</u>	<u>7%</u>	<u>7%</u>