# WHAT LEGAL COUNSEL NEED TO KNOW ABOUT COST OF CAPITAL CALCULATIONS IN VALUATION AND DAMAGES DISPUTES

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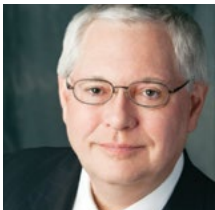
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Legal counsel often retain specialized analysts to perform valuation, damages, or transfer price analyses. These analyses may relate to disputes involving taxation, shareholder rights, condemnation and eminent domain, bankruptcy, breach of contract, and torts. Legal counsel may retain these analysts as either consulting experts or testifying experts.

In these dispute-related valuation, damages, or transfer price analyses, the analyst typically performs some type of income-related analysis that typically involves a discount rate or a capitalization rate. This article summarizes what legal counsel need to know about the analyst's discount rate/capitalization rate measurement process.

Estimating the discount rate/capitalization rate is one component of just about every dispute-related private company valuation, damages, or transfer price analysis. This measurement can have a material impact on the analyst's valuation, damages measurement, or transfer price determination opinion.

PROXIES FOR THE COMPANY-SPECIFIC RISK PREMIUM

The final company-specific risk premium (CSRP) estimate is supported by the analyst's professional judgment. Such professional judgment is based on consideration of the qualitative factors that may affect the company-specific risk of the litigant company and any market-derived empirical data that may provide a benchmark or approximation of a supportable CSRP.

There are various data sources that the analyst may consider to provide guidance as a proxy or benchmark in developing the CSRP estimate. Unlike the empirical data sources that the analyst may consider to measure the size-related equity risk premium (S_p) component of the cost of equity capital (K_e), these proxy data sources do not directly measure the CSRP.

Rather, these data sources may be considered by the analyst to estimate the CSRP and represent proxies—or substitutes—for the CSRP estimate. They

are not databases or formulas that provide specific empirical evidence directly to measure the CSRP.

Ultimately, the CSRP estimate is supported by the analyst's professional judgment and by the analyst's functional analysis of the subject company. The data sources described below provide an empirically based quantitative test of the reasonableness of the analyst's CSRP estimate.

The following discussion summarizes what counsel need to know about four empirically based quantitative proxy data sources that the analyst may consider to provide guidance to estimate the CSRP. These proxy data source analyses are as follows:

1. Quantum of risk in the modified capital asset pricing model (MCAPM) and the build-up model (BUM);

2. Quartile analysis of Duff & Phelps/Ibbotson 10th size decile;

3. Analysis of relative corporate bond ratings and yields; and

4. Analysis of illiquidity studies (i.e., pre-initial public offering and restricted stock studies).

Quantum of risk in the MCAPM

The analyst may consider the different levels (or components) of risk within a K_e measurement model such as the MCAPM or BUM to develop the CSRP estimate. That is, each component of the MCAPM (i.e., risk-free rate of return [R_f], beta-adjusted equity risk premium [ERP], and S_p) represent a quantifiable level—or quantum—of risk applicable to the subject company. These risk levels may be described as follows:

- The R_f is the rate of return that an investor would expect on an investment with no risk. Typically, the R_f sets the minimum rate of return that an investor will expect on any investment. The R_f measures the first quantum of risk in the K_e measurement model.

- The beta-adjusted ERP (in the MCAPM) or the combination of the ERP and the industry-related risk premium (IRP) (in the BUM) measure a

second quantum of the expected rate of return on an investment in the business ownership interest. Typically, this second risk level is the quantum of expected return that motivates investors to forgo the riskless investment.

- The S_p is the expected rate of return that an investor expects for investing in small-capitalized companies. For many reasons (in addition to size), small-capitalized companies tend to be riskier investments than large-capitalized companies. The S_p provides the third quantum of the risk levels related to the subject company.

The analyst now has to estimate the quantum for the fourth level of risk—the CSRP—associated with the subject investment. The analyst has empirically based quantifiable evidence for the first three quanta of risk associated with an investment in the subject company. The analyst can consider that empirically based quantitative evidence in developing the CSRP estimate.

Presented in Table 1 is a hypothetical K_e measurement. This illustrative K_e measurement considers the first three empirically based measurable quanta of risk levels in the estimation of the fourth judgment-based quantum of risk level (i.e., the CSRP).

The guideline quanta of risk levels presented in Table 1 are based on illustrative data as of December 31, 2018. Specifically:

1. The R_f is based on the 20-year Treasury bond available as of December 31, 2018;

2. The ERP is the "ex post" ERP provided by the Duff & Phelps Cost of Capital Navigator;

3. The industry beta is based on hypothetical guideline publicly traded companies' betas as reported by Bloomberg;

4. The IRP is provided by the Duff & Phelps Cost of Capital Navigator for general contractors—nonresidential buildings (presented solely as an illustrative industry group); and

5. The S_p is provided by the Duff & Phelps Cost of Capital Navigator for size decile 10.

TABLE 1 (Part 1)

Illustrative private litigant company valuation analysis documentation of analyst's CSRP assessment judgments

Example of qualitative factor analysis

	Plus/Minus Documentation Procedure	Numerical Documentation Procedure	Listing Documentation Procedure
Analysis of litigant company negative risk factors:			
Operating history, volatility of revenue and earnings	+++	3.0	X
Lack of service line diversification	++	1.0	X
Obsolete information technology systems	+	0.5	X
Key employee dependence	++	1.0	X
Analysis of litigant company positive risk factors:			
Long-term contracts with established customers	– –	-1.0	X
Ownership/license of proprietary patents, copyrights, trademarks, and trade secrets	–	-0.5	
Indicated litigant company CSRP (%)	4.0	4.0	4.0
Analyst's CSRP estimate (%)			**4.0**

TABLE 1 (Part 2)

The quantum of risk measurement procedure based on a proxy risk measurement for analyst guidance

Consideration of the quanta of measurable risk levels

Application of the modified capital asset pricing model (ex post equity risk premium)

Quanta of risk in the cost of equity capital	Guideline quantum of the expected rate of return per risk level
Risk-free rate of return	2.87%	3%
General equity risk premium	6.91%	
Multiplied by: industry beta	0.90	
Industry-adjusted risk premium	6.22%	6%
Size-related risk premium	5.22%	5%
Analyst's estimated company-specific risk premium —based on an assessment of the previous levels of risk	4%	3%–6%
Indicated subject company cost of equity capital	18.31%	
Selected cost of equity capital (rounded)	**18%**	

TABLE 1 (Part 2) *(continued)*

Application of the build-up model

Quanta of risk in the cost of equity capital		Guideline quantum of the expected rate of return per risk level
Risk-free rate of return	2.87%	3%
General equity risk premium	6.91%	
Industry equity risk premium	0.14%	
Industry-adjusted risk premium	7.05%	7%
Size-related risk premium	5.22%	5%
Analyst's estimated company-specific risk premium —based on an assessment of the previous levels of risk	4%	3%–7%
Indicated subject company cost of equity capital	19.14%	
Selected cost of equity capital (rounded)	**19%**	

Based on the empirically based quantum of risk data for each of the first three levels of investment risk included in Table 1, an analyst may conclude that four percent is a supportable CSRP estimate (i.e., the fourth quantum of risk of the K_e). That conclusion is based on the consideration that the four percent CSRP estimate falls within the range of the other empirically based quantum of risk indications.

The average quantum of risk in the Table 1 MCAPM cost of capital analysis (before consideration of the CSRP quantum of risk) is 4.8 percent. The average quantum of risk in the Table 1 BUM cost of capital analysis (before consideration of the CSRP quantum of risk) is five percent. An analyst may consider the average size of the quantum of risk measured in each of the first three K_e model components in order to indicate a supportable quantum of the CSRP risk level.

The above CSRP quantum of risk level estimate may not be constant over time. Like all components of the K_e, the CSRP is subject to the prevailing economic conditions. Such prevailing economic conditions may upwardly or downwardly affect the various quanta of risk related to the various risk factors.

For example, if the R_f decreased from 2.9 percent in December 2018 to 1.9 percent in December 2019, it is likely that corresponding ERPs would decrease (all else being equal). If the expected return on a risk-free investment decreases, then the relative expected return needed to encourage an investor to forgo the risk-free investment may also decrease.

The investor would not expect as much of a rate of return premium for investing in generally risky equity investments. This is because the alternative investment (i.e., a risk-free 20-year Treasury bond) now provides a lower rate of return. Therefore, the quantum of a CSRP risk level indication based (at least in part) on the R_f and the general ERP components of the K_e may be correspondingly decreased.

QUARTILE ANALYSIS OF THE CRSP DECILES SIZE PREMIA STUDIES 10TH DECILE

The analyst may consider the University of Chicago Center for Research in Security Prices (CRSP) Deciles Size Premia Studies 10th decile data (now presented in the Cost of Capital Navigator) to provide some empirical guidance as to a supportable CSRP estimate. While the CRSP Deciles Size Premia Studies data are typically relied on to quantify S_p, these data

may also provide some guidance with regard to estimating the CSRP.

The following discussion summarizes the background on the CRSP Deciles Size Premia Studies data and how the CRSP Deciles Size Premia Studies data may be considered in developing the CSRP estimate.

Background of the CRSP Deciles Size Premia Studies data

The first comprehensive study of the so-called size effect (i.e., the relationship of the size of a public company and the rate of return that investors expect on an investment in that company's stock) was performed by Rolf Banz in 1981. Banz examined and compared the returns of small capitalized New York Stock Exchange (NYSE) companies to the returns of large capitalized NYSE companies. The study was performed over the time horizon of 1926 to 1975.

In this study, Banz segmented all NYSE publicly traded companies into 10 deciles—the 1st decile being the largest capitalized public companies and the 10th decile being the smallest capitalized public companies.

Banz concluded that there was an observable negative relationship between the size of a public company and the historical equity investment returns.[1] That is, the Banz study concluded that as the public company size decreases, historical equity investment returns tend to increase—and vice versa. The size effect, however, was not linear. Rather, the size effect was most pronounced in the smallest capitalized public companies.

Furthermore, as the investment holding period increased, the small-capitalized public companies tended to outperform the large-capitalized public companies, in terms of providing a higher rate of return to their investors.

Many of the risk attributes that generally define small-capitalized public companies provide possible explanations for this empirically based relationship between company size and the equity rate of return. In general, small-capitalized public company stocks are less liquid, harder to diversify, and tend to have less available investor information (due to limited security analyst coverage). Small-capitalized companies have fewer financial resources, operational resources, human resources, and strategic resources. These limited resources (compared to larger public companies) limit the smaller public company's ability to prevent larger companies from entering its market and taking its market share.

Due to having better access to capital, large-capitalized public companies tend to have greater ability to hire better quality employees, to spend more on advertising and on research and development, and to endure economic downturns. Additionally, when compared to small public companies, large public companies have a relatively high volume of customers, decreasing their reliance on a few key customers.

The functional and operational differences listed above (and this is not a comprehensive list) increase the risk associated with investing in a small public company compared with investing in a large company. Therefore, investors expect smaller public companies to provide a higher return on equity investment relative to larger public companies. This explanation is because investors expect to be compensated for assuming the greater level of investment risk in a smaller public company, compared to the level of investment risk in a larger public company.

The S_p quantifies the increased rate of return that investors expect in order to compensate them for assuming the risk associated with small company investments.

Although a significant relationship between size of a company and historical equity rates of return was observed, the Banz study concluded that it is not clear whether that relationship is due to company size itself or to other unknown variables correlated with company size.

That is, small company size may not cause risk—or cause the increased expected investment returns. Rather, the financial and operational disadvantages associated with small company size may be causing

the risk—and causing investors to expect higher rates of return on their equity investment.

This conclusion of the Banz study is summarized in the following statement: "It is not known whether size [as measured by market capitalization] per se is responsible for the effect or whether size is just a proxy for one or more true unknown factors correlated with size."[2]

As a result of the Banz study, investment professionals began performing their own size-effect studies. Applying the data produced by the CRSP, Roger Ibbotson and Rex Sinquefield performed a series of size-effect studies that were published in the Morningstar/Ibbotson annual Stocks, Bonds, Bills, and Inflation (SBBI) Valuation Yearbook. Those studies were called the CRSP Deciles Size Premia Studies, and they were summarized annually in the SBBI Valuation Yearbook from 1999 to 2016.

The CRSP Deciles Size Premia Studies continue to segment the NYSE stock returns into deciles by size (as measured by the market capitalization of the publicly traded companies). Based on the NYSE decile breakpoints, the study now includes the entire universe of NYSE/NYSE MKT/Nasdaq-listed securities—rather than just the NYSE listed securities. CRSP deciles are now calculated from 1926 to the present year.

The CRSP deciles data include all publicly traded companies. That is, the CRSP Deciles Size Premia Studies data do not exclude financial services companies (companies in finance, insurance, or real estate) or high financial-risk companies.

Duff & Phelps calculates the CRSP deciles size premiums as follows: "Size premia represent the difference between historical (observed) excess return and the excess return predicted by the capital asset pricing model (CAPM).… Excess returns are defined here as portfolio returns over and above the risk-free asset's returns."[3]

In this study, the CAPM-predicted return is calculated as the product of the beta (β) for the subject portfolio (i.e., the subject decile) of public stocks and the expected return on the market portfolio of stocks in excess of the R_f times the ERP. The observed difference after the β adjustment demonstrates that the β of smaller companies does not fully explain the perceived risk associated with smaller companies. Therefore, the actual rate of equity return offered by smaller companies is not fully explained by the unadjusted CAPM alone. In other words, the β of small companies is underestimated. Accordingly, the unadjusted CAPM underestimates the K_e of smaller companies.

Empirical evidence indicates that the unadjusted CAPM as a measure for the expected returns for smaller companies is imperfect. As a result, it is a generally accepted procedure for analysts to consider a S_p in the K_e calculation. This S_p consideration is especially relevant for so-called microcap companies (i.e., the public companies with equity capitalization in the 9th and 10th deciles), where the S_p is more pronounced. The CRSP deciles size premiums data can be used in the application of the MCAPM and the BUM to estimate a K_e for a smaller size business ownership interest.

The CRSP Deciles Size Premia Study provides the size premiums data and other valuation data previously published in the SBBI Valuation Yearbook and the Duff & Phelps Valuation Handbook–U.S. Guide to Cost of Capital.

All size premiums provided by Duff & Phelps are beta adjusted. This means that the size premiums are adjusted to remove the portion of the excess return (above the unadjusted CAPM estimate) that is attributable to beta alone. That is, the concluded size premium data by Duff & Phelps measure only the size effect's contribution to the excess return (above the unadjusted CAPM estimate).

In the application of the MCAPM and the BUM, the analyst often applies the CRSP data to estimate the specific S_p for a subject ownership interest. In consideration of a supportable S_p, analysts may first estimate the subject ownership interest equity value by applying a market approach or an asset-based

approach valuation method and then select the applicable Duff & Phelps decile and S_p indication.

When applying the S_p and the IRP provided by Duff & Phelps, adding both an S_p and an IRP to the BUM analysis is not considered to be "double-counting" these risk premiums. This is because the S_p is beta-adjusted and the IRP is the measurement of the beta risk. In other words, these two different risk premiums were designed to account for two different types of risk.[4]

Considering the CRSP Deciles Size Premia Studies data as a proxy for CSRP

The analyst may consider an analysis of the CRSP Deciles Size Premia Study 10th decile as an empirically based proxy (or benchmark) in developing the CSRP estimate. The 10th decile is comprised of the smallest-capitalized public companies included in the CRSP Deciles Size Premia Study.

The public companies that comprise the 10th decile may be disaggregated into subcategories 10a and 10b, as presented below.

The public companies that comprise the 10a subdecile include companies with market capitalizations between $185.4 million and $321.6 million, and the

reported size premium is 3.71 percent (as of December 31, 2018).

The public companies that comprise the 10b subdecile include companies with market capitalizations between $2.5 million and $184.8 million, and the reported size premium is 8.25 percent (as of December 31, 2018).

Within each of the 10a subdecile and 10b subdecile categories of the 10th decile, Duff & Phelps presents two additional subcategories. The 10a subdecile is disaggregated into 10w and 10x subdeciles, while the subdecile 10b is disaggregated into 10y and 10z subdeciles.

Companies that are classified in the 10th decile vary considerably in market capitalization and in the applicable S_p. The empirically derived S_p measurements range from 2.89 percent to 11.14 percent, a spread of 8.25 percent, or 825 basis points.

Table 2 presents an analysis of the CRSP Deciles Size Premia Study data for the 10th decile. The Table 2 empirical data were sourced from the Duff & Phelps Cost of Capital Navigator as of December 31, 2018. These empirical data present the disaggregation of the 10th decile, as of that date.

TABLE 2

CSRP Deciles Size Premia Studies Data Analysis of the 10th Decile as of December 31, 2018

Disaggregation of the CRSP 10th Decile	Market Capitalization of the Smallest Public Company ($million)	Market Capitalization of the Largest Public Company ($million)	S_p – Size Premium (Actual Return in Excess of the Return Predicted by CAPM)
10a	185.418	321.578	3.71%
10w	250.270	321.578	2.89%
10x	185.418	250.248	4.68%
10b	2.455	184.785	8.25%
10y	109.462	184.785	6.85%
10z	2.455	109.406	11.14%

The 10th decile disaggregation presented in Table 2 provides an indication that investment risk examined in the Duff & Phelps and Ibbotson data that may be related to more than just the S. For example, subdecile 10y and subdecile 10z are populated by many large (but highly leveraged) public companies with small equity capitalizations. Such large (in terms of revenue and/or assets) public companies with small equity capitalization probably do not match the characteristics of financially healthy but smaller public companies.

As presented in Table 2, as the size of public companies increases, the corresponding S_p decreases. That is why it is important for the analyst to correctly interpret and apply the S_p expected return component of the MCAPM (and BUM) measurement of the K_e.

Also, according to Duff & Phelps, "as of December 31, 2018, the reported size premium for the smallest five percent of companies by market capitalization as represented by CRSP subdecile 10b is 8.25 percent, and the size premium for the next smallest 5 percent of companies (as represented by CRSP subdecile 10a) is 3.71 percent, a difference of 4.54 percent."[5]

According to Duff & Phelps "[t]he CRSP Deciles Size Premia include all companies with no exclusion of speculative (e.g., start-up) or distressed companies whose market capitalization may be small because they are speculative or distressed."[6]

The distressed company issue may be considered through an analysis of the 10th decile subcategories of 10y and 10z, as presented in Table 3 and Table 4.

As presented in Table 3, the subdecile 10y public companies report five-year net income ranging from negative $44.5 million to a positive $14.7 million. The subdecile 10y public companies significantly smaller than other public companies in the CRSP Deciles Size Premia Study. In addition, more than half of these subdecile 10y companies are unprofitable.

As presented in Table 4, subdecile 10z includes public companies in the 5th percentile that report five-year average earnings before interest, taxes, depreciation, and amortization (EBITDA) of negative $19.3 million. The public companies classified in subdecile 10z at or below the 50th percentile (i.e., the lower quartile) reported negative EBITDA.

Collectively, the data in Tables 3 and 4 support the conclusion that the CRSP Deciles Size Premia Study 10th decile is comprised of financially troubled and financially distressed companies. Duff & Phelps presents the following conclusion with regard to subdecile 10y and subdecile 10z: "Subdecile 10y and subdecile 10z are populated by many large (but highly leveraged) companies with small market capitalizations that probably do not match the characteristics of financially healthy but small companies (see 'Total Assets,' 95th percentile measures)."[7]

According to an article authored by James Hitchner in the journal, Financial Valuation and Litigation Expert, "It's important to note that 80 percent of the companies in decile category 10b are from 10z. As such, let's focus on 10z. At the 50th percentile of 10z the operating margin is -1.11 percent. Yes, on average, these companies are losing money. At the 25th percentile the operating margin is -21.27 percent. Furthermore, 62 percent of the companies in 10z are from only three industry sectors: financial services, technology, and healthcare."[8]

The analyst may consider the S_p data associated with CRSP size categories 10w, 10x, 10y, and 10z to provide guidance for developing the CSRP estimate. These data are presented in the far right column of Table 2 (as of December 31, 2018).

In particular, the analyst may consider the difference between the 10x and the 10w size premiums (e.g., 4.68 percent–2.89 percent) and the difference between the 10z and the 10y size premiums (e.g., 11.14 percent–6.85 percent).

These size premiums differences (of approximately two percent to four percent) may provide an empirically based proxy or benchmark for a supportable CSRP estimate.

Such consideration of the CRSP Deciles Size Premia Study 10th decile may provide a reasonableness test

TABLES 3 & 4

CRSP Deciles Size Premia Studies data analysis of the 10y Subdecile and 10z Subdecile as of September 30, 2018

Decile 10y Percentiles	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
Market Value of Equity ($MM)	180.567	164.136	145.135	124.566	109.977
Book Value of Equity ($MM)	206.05	120.009	73.664	32.859	0.014
Five-Year Average Net Income ($MM)	14.66	6.538	(2.419)	(19.152)	(44.51)
Market Value of Invested Capital ($MM)	596.811	222.403	177.823	142.236	115.058
Total Assets ($MM)	1,480.151	794.153	163.197	65.786	23.418
Five-Year Average EBITDA ($MM)	90.734	18.455	-	(12.043)	(27.018)
Revenue ($MM)	936.174	159.984	49.969	21.92	0.48
Return on Book Value of Equity (%)	34.2	8.0	(0.4)	(54.7)	(144.8)

Decile 10z Percentiles	95th Percentile	75th Percentile	50th Percentile	25th Percentile	5th Percentile
Market Value of Equity ($MM)	94.613	68.696	41.957	19.913	8.086
Book Value of Equity ($MM)	115.874	48.302	21.530	8.221	(0.573)
Five-Year Average Net Income ($MM)	5.684	0.515	(4.484)	(13.786)	(25.807)
Market Value of Invested Capital ($MM)	225.088	92.630	56.026	25.737	9.623
Total Assets ($MM)	668.823	114.147	42.808	17.667	5.589
Five-Year Average EBITDA ($MM)	23.478	3.654	(1.188)	(8.672)	(19.331)
Revenue ($MM)	336.341	67.537	20.507	2.466	-
Return on Book Value of Equity (%)	22.6	3.3	(14.1)	(89.7)	(181.1)

Note: The data presented above are sourced as of September, but Duff & Phelps relies on these data for its size decile data as of December. Source: Duff & Phelps 2019 Cost of Capital: Annual U.S. Guidance and Examples, Cost of Capital Navigator.

for the analyst's judgment-based CSRP estimation with regard to the particular unsystematic risk profile of the subject company.

As indicated by the Hitchner article, based on dated information that is still relevant, not only does the CRSP Deciles Size Premia Study 10th decile include financially troubled companies, it is also skewed by its industry concentration.

As presented above, the actual returns earned in excess of the returns predicted by the CAPM was 6.85 percent for subdecile 10y and 11.14 percent for subdecile 10z (or a difference of 429 basis points) as of December 31, 2018. This 4.29 percent return premium difference may (in part or in whole) be an indication of the quantum of return that is correlated with various types of financial and operational risk—and not just with the size of the subject company. That is, the delta between subdecile 10y and subdecile 10z or subdecile 10a and subdecile 10b may provide an indication for the investment return premiums related to the types of risks that are more often associated with the CSRP than with the S_p.

Analysis of relative bond ratings and bond yields

The lack of diversification of the business operations of some private companies suggests that the relevant risk measure for investors may be "total risk." Total risk includes unsystematic risk (i.e., the total risk associated with a private company investment includes company-specific risk). That is, for an undiversified equity investment in a private company, some form of unsystematic risk likely exists—and should be considered when measuring the K_e.

Quantifying the company-specific risk is a challenging process. In part, this is because most of the data typically considered to measure the K_e are based on public company information—and investors in public companies tend to be well diversified. Such diversification tends to reduce or eliminate the company-specific risk component of the K_e.

Another procedure that the analyst may consider as an empirically based proxy (or benchmark) to provide guidance in developing the CSRP estimate is an analysis of the high-yield bond spread. A high-yield bond is a bond with a credit rating below investment-grade corporate bonds.

High-yield bonds pay a higher yield than investment-grade bonds. This high yield is typically because of some high-risk factors or because the issuing debtor company is financially distressed.

The yield on a typical corporate bond is comprised of the following components:

- Real rate of return and a return premium for expected inflation. These two rate of return components are included in a government bond yield, also known as the risk-free rate—or the R_f; and

- Default risk premium. The default risk premium is measured as the required rate of return in the market in order to compensate investors for the risk of default on a corporate bond. Typically, the default risk premium is measured as the spread between the yields on risky corporate bonds and the yield on a U.S. Treasury bond (the yield that is also known as the R_f).

The risk of default is one component of investment risk that is likely to be minimized (or diversified away) in a diversified portfolio of debt investments. For example, let's assume that an investor's portfolio is made up of a well-diversified portfolio of, say, 100 different corporate bond holdings. The risk that a default of one—or a few—of those debt instrument investments having a significant negative impact on the investor's portfolio return will be low.

The default risk premium in a high-yield bond is significantly higher than the default risk premium for an investment-grade bond. Such a default risk premium reflects the additional risk of a high-yield bond holder being unable to realize the expected cash flow from the issuing debtor company. In this way, the risk profile of the high-yield debt investor in a distressed debtor company is similar to the risk profile of an equity investor in a non-distressed company.

Because a high-yield bond is a bond with a credit rating below an investment-grade corporate bond, a high-yield bond typically pays a higher yield than an investment-grade bond. Of course, investors expect this higher yield because of the high-risk factors associated with the debtor company. The level of risk between the observed investment-grade corporate bonds and the high-yield "junk bonds" may provide a proxy to assist the analyst in developing the CSRP estimate.

As presented in Table 5, the yields on various forms of bonds (and bond indices) vary based on the subject bond—or the subject bond index—risk profile.

TABLE 5

Bond yields and bond index yields as of December 31, 2018

Investment Instrument	Yield
6-Month U.S. Treasury bill	2.5%
10-Year U.S. Treasury note	2.7%
Moody's Aaa Corporate Bond Index	4.0%
Moody's Aa Corporate Bond Index	4.2%
Moody's A Corporate Bond Index	4.3%
Moody's Baa Corporate Bond Index	5.1%
ICE BofAML BB U.S. High Yield Index	6.3%
ICE BofAML B U.S. High Yield Index	8.4%
ICE BofAML CCC & Below U.S. High Yield Index	13.7%

The first debt security presented in Table 5 is a six-month Treasury bill. Treasury bills (or T-bills), are sold with maturities ranging from a few days to 52 weeks. T-bills are typically sold at a price discount from the stated par amount (also called the face value). Rarely, T-bills have sold at a price equal to the par amount. Such a sale effectively results in a zero percent yield to the investor. When a T-bill matures, the security holder is paid the par amount. If the T-bill's par amount is greater than the T-bill's purchase price, then the difference is the interest (or the yield) earned by the investor.

The next debt security presented in Table 5 is a 10-year Treasury note. Treasury notes (or T-notes), earn a fixed rate of interest every six months until maturity. T-notes are issued with typical maturities of two years to 10 years.

In addition, the U.S. Treasury also issues Treasury bonds. Treasury bonds (or T-bonds) pay a fixed rate of interest every six months until they mature. Treasury bonds are issued with typical maturities of 20 years or 30 years.

All T-bills, T-notes, and T-bonds are issued by the U.S. Department of Treasury and all are typically considered to be a risk-free security. As mentioned earlier, for technical data consistency purposes, the 20-year T-bond is typically used as the R_f when the analyst measures the K_e.

The next tranche of debt securities presented in Table 5 is the long-term corporate bond indexes for Aaa, Aa, A, and Baa rated corporate bonds, as rated by Moody's. Moody's is an internationally recognized credit rating agency. These rating categories for corporate and institutional bonds (i.e., Aaa through Baa) are typically considered investment-grade.

According to Moody's, "long-term obligation ratings are opinions of the relative credit risk of fixed-income obligations with an original maturity of one year or more. They address the possibility that a financial obligation will not be honored as promised. Such ratings reflect both the likelihood of default and any financial loss suffered in the event of default."[9]

Aaa-rated corporate debt obligations are considered to be of the highest quality with minimal risk. Aa-rated corporate debt obligations are considered to be of high quality and are subject to very low credit risk. A-rated corporate debt obligations are considered to be upper-medium-grade and are subject to low credit risk. Baa-rated corporate debt obligations are subject to moderate credit risk. Baa-rated corporate bonds are considered medium-grade and, as such, these bonds may possess speculative characteristics.

As presented in Table 5, the highest rated corporate bond index yield equals four percent, or 130 basis points above the 10-year T-note yield of 2.7 percent. That is, the incremental level of return required to attract a debt investor away from a risk-free investment to a risky (albeit low risk) investment is about 1.3 percent.

The third tranche of the debt securities presented in Table 5 is considered to be high-yield or below investment-grade. Such debt instruments are market-capitalization-weighted indices of domestic corporate high-yield bonds. The indices track the performance of high-yield debt securities traded in the U.S. bond market.

The high-yield debt securities are considered to be below investment-grade rating (based on an average rating of the Moody's, S&P, and Fitch credit rating agencies). The debt securities included in these indices have at least 18 months to final maturity at the time of issuance, have at least a one year remaining term to final maturity as of the rebalancing date, have a fixed coupon schedule, and have a minimum amount outstanding of $250 million.

As presented in Table 5, the lowest rated high-yield bond index yield as of the observation date equals 13.7 percent, which is 530 basis points above the BB-rated index yield of 8.4 percent and 860 basis points above the lowest investment-grade index yield of 5.1 percent.

The lowest rated bonds (i.e., CCC and below) are typically referred to as junk bonds. Junk bonds have a high risk of default. Like the companies that comprise the Duff & Phelps subdecile 10y and sub-decile 10z (discussed above), the debtor companies that issue such junk bonds are often financially distressed.

The difference in the level of return on junk bonds and on other below investment-grade bonds may provide guidance to the analyst as a proxy or benchmark for the estimation of the CSRP.

The incremental return between a junk bond index (13.7 percent from Table 5) and the BB-rated bond index (8.4 percent from Table 5) may provide an indication of the incremental return that debt investors expect as compensation for the factors that pertain to company-specific risk—such as financial distress, liquidity risk, and so forth.

In other words, the analyst may consider the yield differentials presented in Table 5 as one source of empirically based evidence to develop a CSRP estimate. The analyst may consider the difference between the B-rated high-yield investments (i.e., 8.4 percent on the observation date) and the CCC and below-rated high-yield investments (i.e., 13.7 percent on the observation date). This differential in high-yield bond returns—of approximately five percent—may provide analysts with an empirically based reasonableness test for a judgment-based CSRP estimate.

While this analysis of high-yield debt instruments does not directly measure the CSRP, it may provide the analyst with a proxy of empirically based data as guidance to develop the CSRP estimate.

Analysis of illiquidity studies (pre-IPO and restricted stock studies)

While typically used to estimate a valuation discount for lack of marketability (DLOM), these studies may also provide a proxy—or benchmark—for a reasonableness test of the analyst's judgment-based CSRP estimate. Relevant illiquidity studies that may provide an empirically based proxy for the analyst's CSRP estimate include the following: (i) pre-initial public offering (IPO) studies such as the Emory Studies and the Valuation Advisor Studies; and (ii) a variety of restricted stock studies.

The variety of so-called restricted stock studies all observe the market prices of public company restricted stock sales and include such actual transactional data dating back to the late 1960s. These restricted stock studies indicate an average price discount (compared to the trading price of the same public company stock without the trading restriction) for public company restricted stock of approximately 35 percent for transactions occurring in the 1968 to 1988 period and approximately 20 percent to

25 percent for transactions occurring after 1990. The decrease in the observed price discounts is typically explained by the more recent shortened investment holding period for restricted stocks under Securities and Exchange Commission Rule 144.

The analyst may consider the DLOM measurements indicated by the restricted stock studies as a proxy to assess the reasonableness of a judgment-based CSRP estimate. As a simplified illustrative example, let's assume that the analyst selects a 20 percent DLOM with regard to the valuation of a subject ownership interest.

The analyst may test the reasonableness of the judgment-based CSRP estimate by reference to this DLOM proxy. Table 6 provides an illustrative example of such a CSRP estimate reasonableness test.

TABLE 6

Consideration of DLOM empirical data as a proxy data source in the reasonableness test for a CSRP estimate

Based on a restricted stock studies analysis

MCAPM or BUM K_e measurement:

Risk-free rate of return	2.9%
Industry-adjusted general risk premium	6.9%
Size-related risk premium	3.4%
Pre-CSRP indicated cost of equity capital	13.2%
Analyst-estimated CSRP	3.0%
Selected risk-adjusted cost of equity capital	**16.2%**

Reasonableness Test of the Analyst-Estimated CSRP:

Pre-CSRP indicated cost of equity capital	13.2%
Divided by: (one minus the 20% DLOM percentage)	80%
Equals: indicated risk-adjusted cost of equity capital	**16.5%**

The pre-CSRP indicated K_e presented in Table 6 illustrates a hypothetical MCAPM or BUM measurement of the subject investment K_e—before consideration of the CSRP. The analyst considers the DLOM adjustment to the pre-CSRP indicated K_e (that may be supportable for a public company). Adjusting the pre-CSRP indicated K_e by the selected DLOM results in a risk-adjusted K_e after consideration of the CSRP (that may be more supportable for a private company ownership interest).

The 3.3 percent delta between the pre-CSRP indicated K_e (of 13.2 percent) and the risk-adjusted K_e (of 16.5 percent) provides an indication of the illiquidity component of the company-specific risk (expressed as a DLOM) in the K_e. That is, all else being equal, the difference between the public company K_e and the private company K_e (in this illustration, the 3.3 percent delta) may be explained as consideration of illiquidity issues that private companies experience (and that public companies do not experience).

This consideration of these illiquidity issues may not capture the total quantum of the CSRP for a private litigant company. However, this consideration of the DLOM may provide the analyst with an empirically

based proxy for the reasonableness test of a judgment-based CSRP estimate.

The following discussion considers: (i) a functional analysis of the subject company; (ii) an analysis of quantitative data related to a CSRP of a subject company; and (iii) the analyst's CSRP estimate for a subject company.

THE COMPANY-SPECIFIC RISK PREMIUM AND A FUNCTIONAL ANALYSIS

Typically, in the process of identifying and estimating any CSRP component of a K_e, analysts perform a functional analysis of the subject company. This functional analysis is discussed next.

Description of a functional analysis

A functional analysis is one component of the CSRP identification and estimation process.

A functional analysis is often applied for purposes of assessing the comparability of the subject company to selected guideline or benchmark entities. These selected guideline or benchmark entities could be comparable companies, securities, or properties (including tangible property and intangible property). The development of a functional analysis is relevant in that context.

As will be described, the regulations related to Internal Revenue Code (Code) section 482 explain the application of a functional analysis for purposes of determining reliability within the context of a transfer price analysis. The Organisation for Economic Cooperation and Development (OECD) regulations describe the application of a functional analysis within the context of an intercompany transfer of tangible property, intangible property, or services between two OECD countries.

A functional analysis is certainly relevant to such an intercompany transfer price determination made for purposes of Code section 482 compliance (or of OECD regulations compliance). In addition to applicability to a transfer price analysis, a functional analysis is also relevant within the context of a discount rate or capitalization rate development as part of any dispute-related valuation, damages, or transfer price analysis.

Counsel may initially think of a functional analysis within the context of an intercompany transfer price determination between the controlled entities of a taxpayer (often a multinational taxpayer) for Code section 482 (or for OECD) compliance purposes. While there are broader applications of a functional analysis, the Code section 482 (and the corresponding OECD) regulations do provide a definition of a functional analysis that is generally applicable for this discount rate and capitalization rate development discussion.

Treasury Regulation section 1.482-1(d)(3)(i) relates to comparability issues related to the allocation of income and deductions among taxpayers. Specifically, this regulation section deals with the factors for determining comparability of transactions and companies. This regulation section describes a functional analysis as follows:

(i) Functional analysis. Determining the degree of comparability between controlled and uncontrolled transactions requires a comparison of the functions performed, and associated resources employed, by the taxpayers in each transaction. This comparison is based on a functional analysis that identifies and compares the economically significant activities undertaken, or to be undertaken, by the taxpayers in both controlled and uncontrolled transactions. A functional analysis should also include consideration of the resources that are employed, or to be employed, in conjunction with the activities undertaken, including consideration of the type of assets used, such as plant and equipment, or the use of valuable intangibles. A functional analysis is not a pricing method and does not itself determine the arm's length result for the controlled transaction under review. Functions that may need to be accounted for in determining the comparability of two transactions include –

(A) Research and development;

(B) Product design and engineering;

(C) Manufacturing, production, and process engineering;

(D) Product fabrication, extraction, and assembly;

(E) Purchasing and materials management;

(F) Marketing and distribution functions, including inventory management, warranty administration, and advertising activities;

(G) Transportation and warehousing; and

(H) Managerial, legal, accounting and finance, credit and collection, training and personal management services.

While this regulation section lists eight functions, it does not imply that the eight-item list is exhaustive. Rather, the regulation section indicates that the factors to consider "include" the eight listed functions. In addition, the regulation does not imply that the eight listed factors cannot be disaggregated or rearranged.

Within the context of developing the CSRP estimate for a litigant company, a functional analysis may consider the following risk and expected return topics:

- What products and services are offered to customers or clients (and how those products and services are designed or developed);

- What is the source of supply of the materials, labor, and overhead that is needed to produce those products and services (including sourcing dependence and sourcing logistics issues);

- How the products and services are manufactured or otherwise produced;

- How the products and services are differentiated, promoted, priced, and sold (including advertising and branding issues);

- How the inventory of products and services (including raw materials, work in process, and

finished goods/services) are created, packaged, and stored;

- How the products and services are delivered (including shipping, transportation, and other delivery logistics issues);

- What assets are utilized to perform the functions within the business entity (including working capital assets, tangible assets, and intangible assets);

- How profits are earned in the business entity (including the cost/volume/profit relationships with regard to both production/service creation cost of sales and production/service delivery revenue recognition);

- How the accounting, finance, human resources, management information, marketing, sales, and other administrative activities operate within the subject company; and

- How the subject entity is organized, managed, and capitalized (legally and administratively), including both the relationship between the company owners and the company operators/managers and the relationship between the company and its sources of capital.

There are various financial, competitive, and operational analyses that are components of the functional analysis.

Components of the functional analysis

Table 7 lists the typical considerations in the analyst's development of a functional analysis. This table serves as a checklist of considerations for any analyst who is estimating the CSRP component of a discount rate or capitalization rate for purposes of a dispute-related valuation, damages, or transfer price analysis.

TABLE 7

**Functional analysis considerations
Application to the CSRP estimate in the discount
rate or capitalization rate development**

I. ORGANIZATION CONSIDERATIONS

A. Type of subject entity

1. Description of whether the subject is a business entity or other type of business ownership interest

2. Description and documentation of ownership of the subject entity

3. Description of legal structure of the subject entity

4. Description of tax structure of the subject entity

5. Description of any ownership relationships with related parties, applicable parties, or other common ownership

6. Description of corporate governance (e.g., board of directors)

7. Description of operational executive or management structure (e.g., management organization chart)

8. Description of operational functions structure (e.g., departmental organization chart)

9. Description and locations of owned tangible property

10. Description and locations of leased tangible property

11. Description of owned or licensed patents

12. Description of owned or licensed trademarks

13. Description of owned or licensed copyrights

14. Description of owned or licensed trade secrets

15. Description of owned or licensed other types of intangible property

16. Description of owned or licensed intangible value in the nature of goodwill

B. Owner/operator entity documents

1. Organization documents (e.g., articles of the corporation)

2. Operational documents (e.g., partnership agreements, member agreements)

3. Entity ownership documents (e.g., shareholder agreements, buy/sell agreements)

4. Asset ownership documents (e.g., deeds, legal descriptions, licenses, leases)

5. Entity transferability documents (e.g., franchise agreement restrictions, regulated industry considerations)

6. Ownership interest transferability considerations (e.g., security puts and calls)

7. Recent board of directors or executive/management committee minutes

8. Copies of any business or operating permits or certificates

9. Copies of any inbound or outbound intellectual property licenses

10. Copies of any joint venture, joint development, joint commercialization, etc., agreements

11. List of registrations of all intellectual property, including domestic and international patents, copyrights, and trademarks

12. Copies of documents that illustrate the entity's use of domestic and international patents, copyrights, trademarks, and trade names

13. Copies of documents that illustrate the entity's use of other types of intangible property

14. Copies of documents that illustrate the entity's use of intangible value in the nature of goodwill

II. OPERATIONS CONSIDERATIONS

A. Operational functions

1. Description of products produced and services provided

2. Description of how products and services are designed, developed, or engineered

3. Description of raw materials inputs (sources, costs, and logistics of supply and supply chain risks)

4. Description of labor inputs (sources, costs, and logistics of supply and supply chain risks)

5. Description of overhead (operating expense inputs) (sources, costs, and logistics of supply and supply chain risks)

6. Description of product manufacturing or services production process

7. Description of production scheduling and quality control procedures

8. Description of product warehousing and in-process services storage

9. Description of product warranty and product return risk elements

10. Description of products and services shipping and delivery logistics

11. Description of how intellectual property (patents, copyrights, trademarks, and trade secrets) are developed, documented, and registered

12. Description of how intellectual property (patents, copyrights, trademarks, and trade secrets) are commercialized and protected

13. Description of how other types of intangible property are commercialized and protected

14. Description of how intangible value in the nature of goodwill is commercialized and protected

B. Administrative functions

1. Description of accounting functions

2. Description of receivables/cash collection function and payables/cash disbursement functions

3. Description of treasury (cash management and banking relationship) function

4. Description of capitalization, capital structure, and financing functions

5. Description of products/services design and engineering function

6. Description of production engineering/services delivery efficiency function

7. Description of advertising and market research function

8. Description of packaging and branding function

9. Description of human resources, recruiting, training, and benefits function

10. Description of general counsel function

11. Description of information technology, management information, and data processing function

12. Description of regulatory compliance and other compliance functions

C. Competition and competitive position functions

1. Listing and description of principal competitors

2. Approximate size of principal competitors

3. Ranking of principal competitors by market share and by relative market share

4. Products/services features differentiation with competitors

5. Products/services pricing differentiation with competitors

6. Products/services distribution differentiation with competitors

7. Products/services intellectual property differentiation with competitors

8. Description of total market size

9. Description of total market growth rate

10. Description of how customers use the subject entity's products/services

D. Risk/expected return considerations

1. Description of materials source of supply risk

2. Description of labor source and supply risk

3. Description of operating leverage (fixed costs coverage) risk

4. Description of financing leverage (debt service coverage) risk

5. Description of tangible property risk

6. Description of environmental risk

7. Description of litigation risk

8. Description of intellectual property risk

9. Description of customer concentration risk

10. Description of executive concentration risk

11. Description of regulatory change risk

12. Description of products/services liability risk

III. FINANCIAL CONSIDERATIONS

A. Accounting principles and financial statements

1. Descriptions of current accounting principles applied

2. Comparison of owner/operator entity accounting principles to competitor accounting principles

3. Description of recent changes in accounting principles applied

4. Discussion of revenue recognition principles

5. Discussion of expense recognition principles

6. Discussion of taxation accrual and deferred tax principles

7. Discussion of tangible asset capitalization and depreciation principles

8. Discussion of intangible asset recognition principles

9. Discussion of liability recognition principles

10. Discussion of any adjustments to capital accounts

11. Discussion of cash flow statement working capital adjustments

12. Discussion of cash flow statement noncash revenue and expense account

13. Discussion of cash flow statement investment adjustments

14. Discussion of cash flow statement financing adjustments

B. Financial statement projection considerations

1. Description of the term (time period) of any financial projections

2. Description of the level of detail included in any financial projections

3. Description of financial projections internal development procedures

4. Description of financial projections internal review procedures

5. Comparison of financial projections to historical financial statements

6. Comparison of financial projections to guideline company financial projections

7. Comparison of financial projections to industry financial projections

8. Comparison of historical financial projections to historical financial statements for prior projection periods

9. Copies of any strategic plans or competitive analyses

10. Copies of any debt service payment projections (including any considerations of liquidity or solvency)

C. Valuation considerations

1. Description of the process for selecting guideline public companies

2. Procedures for assessing the subject entity's comparability to selected guideline public companies

3. Procedures for adjusting the financial data of guideline public companies

4. Description of the process for selecting guideline M&A transactions

5. Procedures for assessing the subject entity's comparability to selected guideline M&A transactions

6. Procedures for adjusting the financial data of selected guideline M&A transactions

7. Description of any recent offers to buy the subject entity or the entity's securities

8. Description of any recent sales (or other exchanges) of the subject entity or the entity's securities

9. Descriptions of any value indications (including historical development costs) of tangible real property and tangible personal property

10. Descriptions of any value indications (including historical development costs) of intellectual property or associated intangible property

IV. ASSETS EMPLOYED AND SWOT/ RISKS ASSUMED CONSIDERATIONS

A. Assets employed

1. Description of—and use of—cash and marketable securities

2. Description of—and use of—accounts receivable

3. Description of—and use of—prepaid expenses

4. Description of—and use of—inventory accounts

5. Description of—and use of—other current asset accounts

6. Description of—and use of—land and buildings

7. Description of—and use of—tangible personal property

8. Description of—and use of—other tangible assets

9. Description of—and use of—intellectual property assets

10. Description of—and use of—other identifiable intangible assets

11. Description of—and use of—intangible value in the nature of goodwill

12. Description of—and use of—non-operating or investment assets

13. Description of—and use of—current liabilities

14. Description of—and use of—long-term interest-bearing debt

15. Description of—and use of—other long-term liabilities

16. Description of—and use of—contingent liabilities

B. SWOT and risks assumed considerations

1. List of the principal competitive strengths

2. Description of how competitive strengths affect the subject entity's operating results

3. Description of how competitive strengths affect the subject entity's risks

4. List of the principal competitive weaknesses

5. Description of how competitive weaknesses affect the subject entity's operating results

6. Description of how competitive weaknesses affect the subject entity's risks

7. List of the principal competitive opportunities

8. Description of how competitive opportunities affect the subject entity's operating results

9. Description of how competitive opportunities affect the subject entity's risks

10. List of the principal competitive threats

11. Description of how the principal competitive threats affect the subject entity's operating results

12. Description of how the principal competitive threats affect the subject entity's risks

The functional analysis considerations listed in Table 7 may be used to develop an understanding of the subject litigant company. The analyst may apply this understanding in developing the CSRP estimate component of the discount rate or capitalization rate.

Risk Considerations in a functional analysis

One reason to conduct a functional analysis is to allow the analyst to identify the risks that are being assumed by the subject litigant company. A significant portion of the return earned by the litigant

company's operations is due to the risks assumed by the subject litigant company.

The functional analysis allows analysts to compare these risks: (i) within the company; (ii) between the company and the selected comparable companies, transactions, and licenses; and (iii) between related party (or associated) entities in a controlled transaction.

The analyst applies these risk considerations in developing the CSRP estimate component of the discount rate and capitalization rate.

The 12 Steps of the functional analysis

In the CSRP estimate, analysts typically group all of the above-listed functional analysis considerations into 12 steps—or categories of analyst procedures and investigations. The analyst performs these 12 steps in the estimate—and documentation—of the CSRP component of the discount rate or capitalization rate.

These 12 steps—or categories or groupings of analyst procedures—are listed below.

The first 10 steps primarily relate to the functions performed at the subject litigant company. Step 11 primarily relates to the assets employed by the litigant company. Step 12 primarily relates to the risks assumed by the litigant company.

Application of the functional analysis to measure the company-specific risk premium of the litigant company

Based on the discussion above, the analyst considers the functional analysis procedures presented. Considering these functional analysis procedures, the analyst considers this functional analysis when developing the CSRP estimate for the discount rate and capitalization rate.

12 steps of the functional analysis considered in the CSRP estimate

1. Gather and review all relevant subject company legal documents. This step includes documents regarding organization structure, legal firm, tax status, and owners—e.g., shareholder, partnership, LLC member—agreements.

2. Gather and review all relevant subject company organization charts. This step includes both personnel reporting charts and functional relationship clients and considers both entity governance procedures and quality, quantity, tenure, and experience of entity/function leaders.

3. Understand and document the products/services design, R&D, and products/services differentiation functions. This step includes the assessment of how the subject company's products or services are developed and how these products or services are intended to address their competition in the relevant marketplace.

4. Understand and document the materials, labor, and overhead procurement function. This step includes consideration of how and when the owner/operator entity procures all of its materials, labor, and overhead inputs—for companies in every type of industry or profession.

5. Understand and document the products/services production function. This step includes the assessment of how the subject company processes all of its material, labor, and overhead components to produce a product or a service—including the quality control of the product or service.

6. Understand and document the inventory and products/services storage function. This step includes both the in-process and finished inventory of goods and the in-process and finished inventory of services.

7. Understand and document the sales and marketing function. This step includes the assessment of the products or services pricing, packaging, advertising, promotional, trademark

development and protection, and other branding—on a stand-alone basis and in response to challenges.

8. Understand and document the shipping and distribution logistics function. This step includes consideration of how the products or services are delivered to the customer or the client—including freight, insurance, returns, warranty and repairs, and other expenses.

9. Understand and document the accounting, finance, information systems, human resources, legal, and other administration functions. This step includes the assessment of how: (i) information is generated and used throughout the organization; (ii) human resources are developed and administered; (iii) financial statements and operational documents are prepared and used; (iv) how cash management and treasury operations are performed; and (v) how the subject company is capitalized with debt and equity capital sources.

10. Assess and document the subject company's strategic position in comparison to competitors in the relevant industry or profession. This step includes: (i) measurement of the company's market share/selective market share, market size, and market growth rate; (ii) evaluation of the company's customer or client needs; and (iii) assessment of the company's competitive strengths, weaknesses, opportunities, and threats.

11. Describe and document the assets used by the subject company to perform the functions. This step includes a listing, description, and assessment of relative importance/contribution of: (i) all working capital accounts; (ii) all tangible property types and accounts—owned and leased; (iii) all general intangible property types and accounts—owned and licensed; and (iv) all intellectual property types and accounts—owned and licensed.

12. Evaluate and document the risks assumed by the subject company to perform the functions. This step includes a listing, description, and assessment of all products/services liability, operating language, financial leverage, environmental, supply dependence, customer dependence, technology dependence, employee dependence, intellectual property dependence, tax litigation, commercial litigation, credit and collection, inventory control, property and casualty, foreign exchange, market/competitor, and other risks.

CONCLUSION

Legal counsel often retain forensic accountants, financial advisors, industry consultants, economists, or other analysts to perform valuation, damages, or transfer price analyses. These analysts may serve the legal counsel as consulting experts or testifying experts. These valuation, damages, or transfer price analyses may relate to taxation, financing, transaction, breach of contract, tort, or other disputes.

Most of these valuation, damages, or transfer price analyses involve some form of income-related analyses; and these income-related analyses typically involve a discount rate or capitalization rate.

Therefore, most of these dispute-related analyses involve the analyst's measurement of the litigant company's cost of capital. This cost of capital becomes the basis for the analyst's development of the applicable discount rate or capitalization rate. For most dispute-related analyses, the discount rate and capitalization rate include the analyst's estimate of a company-specific risk premium. This article has described the procedures to develop the CSRP estimate.

Legal counsel have to work with, rely on, defend, or challenge the analyst's valuation, damages, or transfer price opinions. Therefore, this discussion summarizes what counsel need to know about this important component of the discount rate/capitalization rate measurement process.

The first part of this discussion summarized what counsel need to know about why the CSRP should be included in the various cost of capital measurement models. That part of the discussion also described the qualitative factors that the analyst considers in

developing the judgment-based CSRP estimate. This CSRP estimate is one component of what is often called the "alpha" in the measurement of a company-specific or project-specific cost of capital.

The second part of this discussion summarized what counsel need to know about the market-derived, empirical data sources that the analyst considers as a proxy—or benchmark—in the quantitative CSRP estimate. These empirical data sources do not directly measure the CSRP. That is because the CSRP is unique to each individual company or each individual project or investment. However, these empirical data sources provide general guidance to support the analyst's CSRP estimate. Finally, this second part of the discussion summarized one procedure that impacts both the qualitative and quantitative assessment of the CSRP: the functional analysis of the specific company or the individual project or investment. ✑

Notes

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3 Duff & Phelps 2017 Valuation Handbook—U.S. Guide to Cost of Capital, 8.

4 Id. at 8-1.

5 Duff & Phelps 2019 Cost of Capital: Annual U.S. Guidance and Examples, Cost of Capital Navigator, 12.

6 Id.

7 Id. at 15.

8 Jim Hitchner, How to "Rig" a Valuation: The Discount Rate, Fin. Valuation and Litig. Expert (Feb./Mar. 2013).

9 Moody's, Rating Scale and Definitions.