Value Highlights™

Electronic Newsletter for Company Principals and Trusted Business Advisors

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The Specific Company Risk Premium
A New Approach

The business appraisal process involves a great deal of science in arriving at an indication of value, but also requires some art on the part of the appraiser. The science of business appraisals involves the approaches and methodologies used in arriving at a value conclusion. The market approach using the direct market data method requires statistics from actual transactions in the market in order to apply an appropriate multiple to the subject company's selected earnings, revenues, or other income stream. The single period capitalization method and the multi-period discounted earnings method under the income approach require calculated inputs for the appropriate earnings. In addition, data directly observed in the market place such as the risk free rate and the equity risk premium (obtained from Ibbotson Associates) are required to build up the company's appropriate cost of equity and discount rate.

Though many of the required inputs for company valuation are available from third parties, there are certain elements in the valuation process for which the appraiser must rely on experience and subjective judgment. Though various studies have quantified marketability discounts and discounts for lack of control, the appraiser must utilize experience in conjunction with the empirical data to determine the appropriate marketability discount for a specific company. The most obvious example of the art involved in business appraisal centers on the specific company risk premium. Given that errors in the specific company risk premium may have a significant impact upon the value indication, it is crucial that business appraisers be keenly aware of the ramifications their selection of this risk premium may have upon the valuation process. The lack of empirical data regarding the specific company risk premium necessitates the development of a model or factor analysis to estimate the appropriate premium and to better justify the appraiser's selection of this premium.

Recall that the total risk associated with an investment is comprised of unsystematic risk and systematic risk. Systematic risk, such as that associated with the market, macroeconomic factors, or equity investments, is the risk that is unavoidable and impacts all investments to varying degrees. This risk cannot be reduced through diversification of a portfolio. In the business appraisal process, this risk is represented

by the equity risk premium and the small company size premium that are added to the risk-free rate in building the appropriate discount rate. Unsystematic risk, on the other hand, is the risk associated with a particular investment which can usually be reduced or virtually eliminated by holding a diversified portfolio. However, given that the owner of a privately-held business likely does not achieve the same degree of diversification as an owner of a portfolio of publicly-traded stocks, the unsystematic risk associated with the privately-held company is usually not eliminated. For valuation purposes, the firm-specific risk or unsystematic risk associated with a privately-owned company is represented in large part by the specific company risk premium. Once estimated by the appraiser, the specific company risk premium is added to the risk-free rate and the estimate of systematic risk to yield the company's required return or cost of equity. The following table illustrates the build-up of the cost of equity for a privately-held business for valuation purposes.

Cost of Equity
Risk-Free Rate
Systematic Risk + Equity Risk Premium
Systematic Risk + Small Company Size Premium
Unsystematic Risk + Specific Company Risk Premium

The risk-free rate along with the equity risk premium and the small company size premium are readily obtained from Ibbotson Associates which publishes its annual valuation edition of Stocks, Bonds, Bills & Inflation statistics. Based on the 2003 edition, the estimates of these figures are as presented in the following table.

Cost of Equity	
Risk-Free Rate	4.8%
+ Equity Risk Premium	7.0%
+ Small Company Size Premium	9.2%
+ Specific Company Risk Premium	??
Cost of Equity Estimate	21.0%

However, there is no empirical data or observable data regarding the specific company risk premium to assist the appraiser in analyzing the appropriate increment to the discount rate to account for firm-specific risk. In *Valuing a Business: The Analysis and Appraisal of Closely Held Companies*, Fourth Edition, Shannon Pratt, Robert Reilly, and Robert Schweihs state the following with respect to the investment specific risk:

…the unsystematic risk specific to the subject business or business interest still remains largely a matter of the analyst's judgment, without a commonly accepted set of empirical support evidence. The analyst will base this judgment on factors…such as financial statement and comparative ratio analysis and the qualitative matters to be considered during the site visit and management interviews. However, after carefully analyzing these elements of investment-specific risk, there is no specific model for quantifying the exact effect of these factors of the discount rate. The analyst must depend on

experience and judgment in this final element of the discount rate development, but should explicitly describe the factors that impact this final element.

It should be apparent that the lack of any guidelines to estimate the specific company risk premium presents significant challenges to the appraiser in conducting the valuation. Though an appraiser may have performed hundreds of valuations, the specific company risk premium for one company (in the textile industry for example) is not necessarily representative of the appropriate specific company risk premium applicable to another firm (in the shipping industry for example). Therefore, experience is not necessarily enough for an appraiser to rely upon in estimating the specific company risk premium, unless the appraiser has performed a number of valuations on other privately-held companies in the exact same line of business. As a result, the estimation of the specific company risk premium is nothing more than the appraiser's educated, best guess of an appropriate premium.

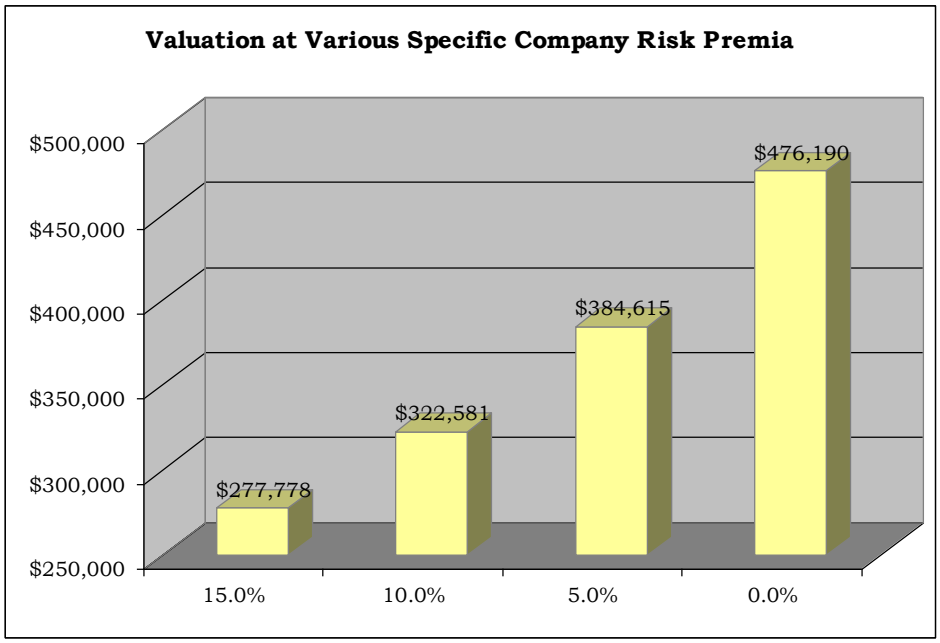
While the estimation of the specific company risk premium may seem a relatively minor issue, errors in estimating the appropriate risk premium may have a significant impact upon the valuation estimate. As a result, this may result in an inflated value estimate for a business which may lead the client to overpay taxes, or vice versa. For example, assume that the company being valued is expected to generate free cash flow to equity of $100,000 per year in perpetuity with zero growth. Based on the risk premium data from Ibbotson Associates previously discussed, the cost of equity or the discount rate with no specific company risk premium is 21%, which results in a capitalization multiple of 4.8. Based on this, the company is valued at roughly $476,000. The following table provides various value estimates based on an incremental specific company risk premium.

Change in Value for Various Specific Company Risk Premium

Specific Company Risk Premium	Base Discount Rate	Incremental Discount Rate	Capitalization Muliple	Value Estimate
0%	21%	21%	4.8	$ 476,000
1%	21%	22%	4.5	$ 455,000
2%	21%	23%	4.3	$ 435,000
3%	21%	24%	4.2	$ 417,000
4%	21%	25%	4.0	$ 400,000
5%	21%	26%	3.8	$ 385,000
6%	21%	27%	3.7	$ 370,000
7%	21%	28%	3.6	$ 357,000
8%	21%	29%	3.4	$ 345,000
9%	21%	30%	3.3	$ 333,000
10%	21%	31%	3.2	$ 323,000
11%	21%	32%	3.1	$ 313,000
12%	21%	33%	3.0	$ 303,000
13%	21%	34%	2.9	$ 294,000
14%	21%	35%	2.9	$ 286,000
15%	21%	36%	2.8	$ 278,000

Though the change in value resulting from a 1% increase or decrease in the specific company risk premium may not be significant, the difference resulting from a 5% change in the risk premium is more noticeable. The following chart illustrates the change in the value of the firm resulting from incremental 5% changes in the specific

company risk premium, recalling that there is an inverse relationship between the discount rate and the value estimate of the firm.



As illustrated, the valuation with a 5% specific company risk premium as compared to no risk premium is roughly 19% lower. As the specific company risk premium increases from 5% to 10% and from 10% to 15%, the value estimates decrease by 16% and 14%, respectively. These dramatic changes in value resulting from inaccuracies in the estimation of the specific company risk premium further strengthen the case for a model to support the appraiser's selection of an appropriate firm-specific risk premium. The case is further supported by the overriding need for the factors used by an appraiser to be credible – for example, in an expert witness or fairness opinion situation. With little or no support for the appraiser's estimation of the specific company risk premium, a skilled attorney could relatively easily discredit the appraiser and the valuation. It would, therefore, be prudent for business appraisers to have empirical data, a model, or a factor analysis in order to reinforce the estimate of the company specific risk premium.

A factor analysis would seem the likely choice in supporting the appraiser's selection of a specific company risk premium for two reasons. First, there is no database from which to draw statistics regarding the specific company risk premium used in various valuations. Second, attempting to create a model would likely require a great deal of historic data for each company in order to perform a regression analysis. Since there is likely not enough historic data for a privately-held company to perform a regression, creating a model may not be possible or appropriate. Therefore, a factor analysis would be the logical choice in assisting the appraiser in developing an appropriate specific company risk premium.

The first step in developing the factor analysis is to determine the appropriate factors that impact the specific company risk premium. Some of the factors that are likely to influence the specific company risk are: Business Risk, Operational Risk, Financial Risk, Market Risk, Economic Risk, Industry Risk, Profitability, Revenue Growth, Management/Corporate Governance, Competition, Customer Concentration, Diversification, and Employee Relations. For simplicity, we believe that only the most influential factors that may be quantified should be included in the factor analysis. Furthermore, we believe that the factors should be equally weighted as there is no method to quantify which factors would have a greater impact or to justify any other weighting scheme. Each factor will then be rated from zero to ten with zero having no impact on the risk premium and ten having the highest impact upon the risk premium. With this approach, though it is unlikely, a firm could theoretically have no specific company risk premium based on the factor analysis indicating a highly stable, low risk profile firm. On the other hand, a firm could have a specific company risk premium of ten, which added to the risk-free rate, the equity risk premium, and the small company size premium may result in a cost of equity or discount rate in excess of 35%. This would likely be indicative of a young, high risk firm that requires a rate of return comparable to a venture capital investment.

Having established the rationale for the factor analysis, the following sections discuss the reasoning behind the seven factors and ratings that we have selected. The factor analysis table is included at the end of this article for reference purposes regarding the ratings used for each factor.

Revenue Growth

Although in some cases, particularly in early-stage companies, revenue growth and risk are positively correlated, there is typically an inverse relationship between revenue growth and the appropriate specific company risk premium. As revenue growth of the firm increases, firm risk typically falls as a result of greater prospects for increased earnings, dividends, etc. Therefore, a rating of ten implies declining revenues with a rating of zero indicating annual revenue growth of 8% and above. We recommend using either the compound annual growth rate over the last three to five years or the forecasted revenue growth rate in determining the appropriate rating.

Financial Risk

There is a direct relationship between the financial risk of a firm and the specific company risk premium. In measuring financial risk, we have selected the total debt ratio of the firm. Increased leverage in a firm's capital structure indicates that the threat of a possible bankruptcy increases as well. In our factor analysis, a firm with no leverage in the capital structure for the most recent fiscal year receives a rating of zero with a firm having a total debt ratio above 90% receiving a rating of ten. We suggest using the most recent fiscal year-end balance sheet for this analysis, unless there is a significant interim or projected change in the firm's capital structure.

Operational Risk

Operating leverage, defined as the ratio of fixed costs to sales, is an indication of a firm's risk of not meeting its fixed costs in the event of a decline in sales. There is a direct relationship between the operating leverage of a firm and the specific company risk premium. As the ratio increases, indicating a higher level of fixed costs to sales, the risk of the firm not being able to meet its fixed cost obligations rises, thus increasing the possibility of bankruptcy. In our analysis, a firm with no fixed costs would receive a weighting of zero with a firm having fixed costs in excess of 90% receiving a rating of ten. In the absence of a major cost cutting initiative to be implemented in the foreseeable future, we recommend using most recent fiscal year data for this calculation.

Profitability

A firm's profitability is a clear indication of the level of risk associated with that firm. More profitable firms clearly have a lower level of risk than unprofitable firms, ceteris paribus. Therefore, firms with a higher net profit margin will receive a lower rating risk in the factor analysis, thus reducing the specific company risk premium. Firms with net losses will receive a rating of ten. For stable firms, we suggest using the most recent fiscal year net profit margin on an adjusted basis for analysis. For firms with erratic earnings or profitability, we suggest using a three or five year average of the net profit margin on an adjusted basis or the projected net profit margin if the erratic behavior of the earnings is anticipated to subside. If the earnings are not adjusted for the previous three to five years, the most recent fiscal year performance is the appropriate figure to use.

Industry Risk

A firm's performance relative to the industry performance is an indication of the industry risk associated with a firm. Industry risk is the risk specific to the industry which would be expected to impact all firms in the industry. However, if one firm outperforms the industry, the impact of this industry risk is likely to be less on the firm than on those firms that do not outperform the industry. Based on this, we believe that a ratio of the firm's performance to the industry performance is an appropriate measure of risk. The Return on Asset ratio measures the ability of the firm to generate revenues with its asset base, ignoring the financing structure of those assets. Dividing the firm ROA by the industry ROA produces a ratio indicative of the firm risk relative to the average industry risk. As this ratio increases, the specific company risk premium will then decrease. A rating of ten is assigned to those firms with a negative ROA while a rating of zero is assigned to those firms with a ratio greater than 1.8.

Economic Risk

Our measure of economic risk is based on the same premise as the measure of industry risk. Instead of the industry average ROA, for this metric we use the most

recent annual GDP figure. This suggests that economic risk for the firm is a function of its ability to generate a return on its asset base relative to the ability of the overall economy to generate a return on its total asset base. The upper limit for the GDP figure is likely to be 6%-8% (nominal) based on estimates of the long-run sustainable growth rate of the U.S. economy. Therefore, if a firm has a low ROA relative to economic growth, the specific company risk premium increases and vice versa.

Customer Concentration

If a firm derives a large percentage of annual sales from a few customers, the risk to the firm increases, as losing a major customer and source of revenues may have a significant adverse impact upon the performance of the company. As the customer concentration (measure by sales of top five customers divided by total sales) increases, the specific company risk premium should increase as well. If the company's top five customers account for more than 90% of total annual sales, a rating of ten is appropriate. A rating of zero is appropriate if the sales of the top five customers account for less than 1% of total annual sales. We suggest using the most recent fiscal year sales figures unless there is an anticipated change for the future (i.e. the loss of one of the top five customers in the next year).

While this factor analysis is not perfect, it represents an attempt to provide the business appraiser with a method of reinforcing the estimation of the specific company risk premium. As previously discussed, the estimation of the specific company risk premium is solely a matter of the appraiser's subjective judgment, and an incorrect estimation of this risk premium may have a significant impact upon the value estimate of the privately-held business. Therefore, there is a need for a quantifiable analysis for the specific company risk premium to further strengthen business valuations and to limit the appraiser's exposure to attacks on credibility and results. The factor analysis present herein, though not perfect, provides a foundation for business appraisers in developing the specific company risk premium.

SPECIFIC COMPANY RISK PREMIUM ANALYSIS			
Factor	**Weighting**	**Rating**	**Weighted Rating**
1 Revenue Growth	14%	5	0.7
0 8%+ 1 7%<x<8% 2 6%<x<7% 3 5%<x<6% 4 4%<x<5% 5 3%<x<4% 6 2%<x<3% 7 1%<x<2% 8 0%<x<1% 9 No Growth/Flat 10 Declining Trend			
2 Financial Risk (as measured by Total Debt Ratio)	14%	4	0.6
0 No Leverage 1 0%<x<10% 2 10%<x<20% 3 20%<x<30% 4 30%<x<40% 5 40%<x<50% 6 50%<x<60% 7 60%<x<70% 8 70%<x<80% 9 80%<x<90% 10 90%+			
3 Operational Risk (Fixed Costs/Sales)	14%	3	0.4
0 No Operational Leverage 1 0%<x<10% 2 10%<x<20% 3 20%<x<30% 4 30%<x<40% 5 40%<x<50% 6 50%<x<60% 7 60%<x<70% 8 70%<x<80% 9 80%<x<90% 10 90%+			

4	**Profitability (as measured by Net Profit Margin)**	14%	7	1.0
	0 17%+ 1 15%<x<17% 2 13%<x<15% 3 11%<x<13% 4 9%<x<11% 5 7%<x<9% 6 5%<x<7% 7 3%<x<5% 8 1%<x<3% 9 <1% 10 Net Losses			
5	**Industry Risk (Firm ROA/Industry ROA)**	14%	4	0.6
	0 1.80+ 1 1.60-1.80 2 1.40-1.60 3 1.20-1.40 4 1.00-1.20 5 .80-1.00 6 .60-.80 7 .40-.60 8 .20-.40 9 0-.20 10 Negative Firm ROA			
6	**Economic Risk (Firm ROA/GDP Change)**	14%	7	1.0
	0 4.50-5.00+ 1 4.00-4.50 2 3.50-4.00 3 3.00-3.50 4 2.50-3.00 5 2.00-2.50 6 1.50-2.00 7 1.00-1.50 8 .50-1.00 9 0.0-.50 10 Negative			

7	**Customer Concentration (Sales of Top 5 Customers/Total Sales)**	14%	8	1.1
	0 Less than 1%			
	1 1%<x<10%			
	2 10%<x<20%			
	3 20%<x<30%			
	4 30%<x<40%			
	5 40%<x<50%			
	6 50%<x<60%			
	7 60%<x<70%			
	8 70%<x<80%			
	9 80%<x<90%			
	10 90%+			
	INDICATED SPECIFIC COMPANY RISK PREMIUM			**5.4**