



# Business Valuation Update

## **Business Valuation Update™ June 2018, Vol. 24, No. 6**

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# BUSINESS VALUATION UPDATE

TIMELY NEWS, ANALYSIS, AND RESOURCES FOR DEFENSIBLE VALUATIONS

## The Use of Financial Projections in Solvency Opinions

By Craig Jacobson, GlassRatner  
(New York, N.Y., USA)

The issue of solvency continues to be a hot topic in the world of valuation and litigation. Whether a company was or would be solvent under certain circumstances can have a significant impact on corporate transaction and litigation strategies. For example, a solvency opinion issued at the time of a planned transaction can help guide management and also may reduce the risk of future litigation over an alleged fraudulent conveyance.

Solvency is traditionally assessed by reference to three tests: the balance sheet test, the cash flow test, and the capital adequacy test. For the balance sheet test and the cash flow test, financial

*continued on page 7...*

## Using Jensen's Alpha to Separate Active and Passive Appreciation

By Mark G. Filler, Filler & Associates,  
P.A. (Portland, Maine, USA)

The May 2018 issue of *BVU* included my letter to the editor that was responding to a previous article by Dr. Ashok Abbott regarding the segregation of passive from active increases in the value of a marital asset.<sup>1</sup> In an exchange of emails with Dr. Abbott while I was developing that letter, he mentioned the idea that Jensen's alpha might be worth investigating as another approach to the problem. I decided to take his suggestion and run with it, using the same 48 months of sales data used previously with the addition of two columns

1 "A Quantitative Model Evolves for Determining Passive Appreciation," *Business Valuation Update*, May 2016, Vol. 22 No. 5.

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## USING JENSEN'S ALPHA TO SEPARATE ACTIVE AND PASSIVE APPRECIATION

### BUSINESS VALUATION UPDATE

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showing month-to-month sales growth for both the individual dealer and the other 135 Maine auto dealers. The data are shown in Exhibit 1.

In investment-speak, Jensen's alpha is a risk-adjusted performance benchmark that indicates by how much the percentage returns of an actively managed portfolio are above or below market. A positive alpha value means that a portfolio has beaten the market. The equation for Jensen's alpha is:

$$\alpha = r_s - [r_f + \beta(r_b - r_f)]$$

where  $r_s$  is the expected portfolio return,  $r_f$  is the risk-free rate,  $\beta$  is the portfolio beta, and  $r_b$  is the market return. Beta can be calculated with this equation:

$$\beta = \text{covariance}(r_s, r_b) / \text{variance}(r_b)$$

As can be seen from the above equation, the Jensen's alpha formula requires a risk-free rate, i.e., a hurdle rate that sets a minimum required return. This hurdle rate requirement prevents us from using the formula to produce alpha directly using the auto dealer data, as we do not know what the minimum required growth rate is. However, alpha can also be calculated by regressing a portfolio or company's percentage returns against percentage market returns, using the same regression model that produces a portfolio, or a company's beta. We all know what beta is, but, for the purposes of this article, I will not be discussing it. Alpha, of course, is the regression model's intercept, or constant.

As the typical inputs into a Jensen's alpha regression model are percentage returns, I thought that, since monthly growth rates, or monthly changes in sales, are also stated as percentages, the underlying theory of Jensen's alpha might also apply in this instant case. Therefore, I proceeded to regress the 47 months of the single dealer's monthly percentage changes in sales against the 47 months of the other 135 auto dealers' monthly percentage changes.



## USING JENSEN'S ALPHA TO SEPARATE ACTIVE AND PASSIVE APPRECIATION

**Exhibit 1. Monthly Sales and Sales Growth: Subject Auto Dealer vs. All Auto Dealers**

Monthly Taxable Sales					Percentage Growth				
Date	All Dealers	Subject Dealer	All Dealers	Subject Dealer	Date	All Dealers	Subject Dealer	All Dealers	Subject Dealer
2012-01	166,301,520	1,567,853			2014-01	195,458,782	2,331,977	-5.1%	-7.6%
2012-02	203,914,080	2,424,666	22.6%	54.6%	2014-02	201,808,218	2,538,249	3.2%	8.8%
2012-03	231,884,340	2,385,750	13.7%	-1.6%	2014-03	247,344,218	2,830,659	22.6%	11.5%
2012-04	219,607,280	2,082,690	-5.3%	-12.7%	2014-04	270,159,527	3,452,058	9.2%	22.0%
2012-05	235,036,920	2,429,569	7.0%	16.7%	2014-05	277,868,182	3,344,469	2.9%	-3.1%
2012-06	242,337,760	3,014,073	3.1%	24.1%	2014-06	269,988,545	2,964,895	-2.8%	-11.3%
2012-07	219,922,620	2,370,681	-9.2%	-21.3%	2014-07	272,275,764	3,058,648	0.8%	3.2%
2012-08	251,785,300	2,683,746	14.5%	13.2%	2014-08	296,737,218	4,188,274	9.0%	36.9%
2012-09	228,815,780	2,969,574	-9.1%	10.7%	2014-09	274,696,509	3,797,085	-7.4%	-9.3%
2012-10	215,920,500	2,330,929	-5.6%	-21.5%	2014-10	260,074,236	3,242,868	-5.3%	-14.6%
2012-11	200,836,740	2,988,500	-7.0%	28.2%	2014-11	222,055,273	2,936,493	-14.6%	-9.4%
2012-12	196,418,640	2,802,206	-2.2%	-6.2%	2014-12	252,858,236	3,544,975	13.9%	20.7%
2013-01	184,857,800	2,514,345	-5.9%	-10.3%	2015-01	188,985,527	2,753,190	-25.3%	-22.3%
2013-02	196,697,120	2,498,605	6.4%	-0.6%	2015-02	220,220,018	3,361,755	16.5%	22.1%
2013-03	240,247,080	3,146,606	22.1%	25.9%	2015-03	261,690,545	3,946,725	18.8%	17.4%
2013-04	249,201,180	2,280,784	3.7%	-27.5%	2015-04	289,215,545	4,663,143	10.5%	18.2%
2013-05	267,538,460	3,068,804	7.4%	34.6%	2015-05	297,840,836	4,768,389	3.0%	2.3%
2013-06	253,181,500	2,535,180	-5.4%	-17.4%	2015-06	320,027,127	3,444,988	7.4%	-27.8%
2013-07	267,202,600	2,574,952	5.5%	1.6%	2015-07	301,884,673	4,160,141	-5.7%	20.8%
2013-08	275,673,980	3,659,431	3.2%	42.1%	2015-08	309,864,655	4,591,129	2.6%	10.4%
2013-09	261,966,100	2,489,763	-5.0%	-32.0%	2015-09	298,271,709	4,513,471	-3.7%	-1.7%
2013-10	235,664,255	2,947,747	-10.0%	18.4%	2015-10	296,260,927	3,933,215	-0.7%	-12.9%
2013-11	210,173,564	2,449,565	-10.8%	-16.9%	2015-11	252,789,673	4,089,600	-14.7%	4.0%
2013-12	205,857,473	2,522,617	-2.1%	3.0%	2015-12	266,578,109	4,646,079	5.5%	13.6%
							Mean	1.54%	4.18%
							Delta-Excess Return		2.64%

The regression results are shown in Exhibit 2 and indicate that the monthly alpha is 2.59%. But we have a problem: Notice that the P-value of the intercept, or alpha, is 0.3008, indicating that there is a 30.08% probability that an alpha of 2.59% happened merely by chance. Since the benchmark P-value is 5% or less, our alpha is not statistically significant and is, therefore, an unreliable yardstick for performance measurement. What to do?

I did not attribute the low P-value to an inadequate sample size as N = 47 is sufficiently large and both the independent and dependent variable are normally distributed. However, a Durbin-Watson test

of the regression residuals indicated first-order correlation (2.90 when 2.0 means no correlation), and a lagged correlation test indicated that the serial correlation is negative as well as statistically significant (P-value of 0.0004). With negative serial correlation, the coefficient estimates are accurate, but the ordinary least squares (OLS) estimates of the standard errors will be larger than the true standard errors. This will lead to the conclusion that the standard error estimates are less precise than they really are. Thus, there will be a tendency to accept the null hypothesis of no significance when it should be rejected. In other words, we will be committing a Type 2 error, i.e., we would be falsely inferring the absence of something that

## USING JENSEN'S ALPHA TO SEPARATE ACTIVE AND PASSIVE APPRECIATION

exists. One way to deal with this issue is to invoke the Newey-West procedure.

The Newey-West procedure adjusts the covariance matrix of the parameters to account for autocorrelation and/or heteroscedasticity. It is typically used in financial applications when estimating the alpha (a parameter in a regression model) of portfolio returns or, in our case, sales growth. I adjusted the standard errors using the Newey-West procedure in order to obtain a better t-statistic to determine whether the subject company's sales growth is significantly better than that of all Maine dealers. The results of the procedure, using a lag time of four months, are shown in Exhibit 3 along with the original OLS statistics. Once again, the intercept, or alpha, is 2.59%, but this time it is statistically significant at the 5% level with a P-value of 0.0476, a decrease of 0.2532, or 84.2% from the OLS P-value of 0.3008.

The lag factor that the procedure requires can be 12 for months, 4 for quarters, etc. In the instant case, an autocorrelation function test indicated that the residuals were significantly correlated with a lag of one month and almost correlated with a lag of 10 months. I felt that the effects of serial correlation would dissipate by the end of a quarter, so I chose a lag factor of 4. The smaller the lag factor, the more precise the model.

Now that we have developed an alpha using a regression model, we can now back-solve for the required monthly hurdle rate in Jensen's formula, which turns out to be 1.57%. Converting the monthly hurdle rate and alpha into annual values gives us 18.81% for the hurdle rate and 35.93% for alpha. We can now say that

### Exhibit 2. Regression Summary Output

Regression Statistics						
Multiple R	0.5463					
R square	0.2984					
Adjusted R square	0.2828					
Standard error	0.1679					
Observations	47					
ANOVA						
	df	SS	MS	F	Significance F	
Regression	1	0.5393	0.5393	19.1412	7.1221E-05	
Residual	45	1.2678	0.0282			
Total	46	1.8071				
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	0.0259	0.0248	1.0468	0.3008	-0.0239	0.0758
All Dealers' Percentage Growth	1.0337	0.2363	4.3751	0.0001	0.5579	1.5096

### Exhibit 3. Newey-West Standard Errors L = 4

OLS Standard Errors				
	Coefficients	Standard Error	t Statistic	P-value
Intercept	0.0259	0.0248	1.0468	0.3008
All dealers' percentage growth	1.0337	0.2363	4.3751	0.0001
Newey-West Standard Errors				
	Coefficients	Standard Error	t Statistic	P-value
Intercept	0.0259	0.0129	2.0077	0.0476
All dealers' percentage growth	1.0337	0.1718	6.0178	0

## USING JENSEN'S ALPHA TO SEPARATE ACTIVE AND PASSIVE APPRECIATION

Exhibit 4. Two Methods of Apportioning Profits			
Method 1		Method 2	
Sales, 2015	\$51,578,438	Sales, 2015	\$51,578,438
Marital effort factor	x 0.6194	Increase in ROS	2.30%
Sales attributable to marital effort	31,946,629	Profits attributable to marital effort	1,186,304
ROS for 2015	x 4.60%	Increase in value during the marriage	9,800,000
Profits attributable to marital effort	1,469,545	Base marital effort factor	61.94%
Increase in value during the marriage	9,800,000	Increase attributable to marital effort	6,069,919
Base marital effort factor	61.94%	Profits divided by increase in value	19.54%
Increase attributable to marital effort	6,069,919	Combined percentage attributable to marital effort	81.48%
Profits divided by increase in value	24.21%		
Combined percentage attributable to marital effort	86.15%		
Facts and Assumptions Concerning the Case – Maine Domestic Auto Dealer			
Value at date of marriage, 12/31/2011	3,500,000	Annual sales, 2011	27,177,350
Value at date of divorce, 12/31/2015	13,300,000	Annual sales, 2015	51,578,438
Appreciation during the marriage	9,800,000	Increase in sales	24,401,088
Profit before taxes, 2011	625,079	Profit before taxes, 2015	2,372,608
ROS	2.3%	ROS	4.6%
Using R2 as Dividing Metric		Using Jensen's Alpha as Dividing Metric	
Proportion of sales increase attributable to marital effort (management)	42.74%	Proportion of sales increase attributable to marital effort (management)	61.94%
Proportion of sales increase attributable to market forces (macroeconomic factors)	57.26%	Proportion of sales increase attributable to market forces (macroeconomic factors)	38.06%
If ROS remained constant at 2.3%, then the increase in value attributable to marital effort would remain at 42.74% or 61.94%, the same as the increase in sales.			
However, ROS doubled during the marriage to 4.6%, so there must be more value assigned to marital effort beyond just the increase in sales.			

the manager of this dealership outperforms the market by 36% a year.

The next step is to apportion the 4.18% average return, or growth in sales, for the subject dealer into two parts: management effort and the effect of the market as a whole. The average market returns, or growth in sales for all the dealers, is 1.54%, which becomes 1.59% when multiplied by the regression beta of 1.034%. Subtracting returns for the market as a whole of 1.59% from 4.18% leaves 2.59%, which is alpha and represents managerial knowledge, skills, and abilities. As 1.59%

is 38.06% of 4.18%, then 2.59% is 61.94% of 4.18%, signifying that 62% of sales growth is a result of managerial effort.

As with my previous letter, the next question to be dealt with is: Can increase in value, which is typically a function of cash flow, be apportioned in the same way as growth in sales? That is, does the sales growth apportionment factor trickle down to net income and then to net cash flow? Or is there more management effort involved in controlling costs and expenses than in increasing sales? If so, how do we account for it? I believe we can, and I have attached two worksheets, Methods 1 and

## USING JENSEN'S ALPHA TO SEPARATE ACTIVE AND PASSIVE APPRECIATION

2 (in Exhibit 4) that attempt to deal with the issue by giving credit to management effort if—and only if—return on sales has increased during the relevant period. Management gets no credit for just showing up and maintaining the ROS that was in place at the time of the marriage.

From this analysis of the subject auto dealer, a reasonable inference from Methods 1 and 2 is that 81% to 86% of the value increase represents active appreciation and 14% to 19% represents passive appreciation. ♦

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## Ask the Experts

**Q:** What do you do when you are using the capitalized cash flow method and the guideline public company method and your valuation date is different from the subject company's fiscal year end? Do you use the trailing 12 months ending on the valuation date or the earlier year-end financials?

**A:** We prefer to use the trailing 12 months (TTM) at the valuation date, especially as the valuation date moves further away from the fiscal year-end. However, we often use the calendar year-end as well, particularly if the company makes material year-end adjustments to the financial statements and/or they are audited or reviewed.

Source: James Hitchner, Shannon Pratt, and Jay E. Fishman, *A Consensus View: Q&A Guide to Financial Valuation*; VPS ([bvresources.com/products/a-consensus-view-q-a-guide-to-financial-valuation-2016-edition](http://bvresources.com/products/a-consensus-view-q-a-guide-to-financial-valuation-2016-edition)).

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## Use of Financial Projections

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projections for the subject company are often a key input to the financial models used to assess solvency.<sup>1</sup> Projections management or its professional advisors prepared are sometimes overly optimistic. Therefore, it is important for the valuation analyst preparing a solvency opinion to identify whether projections are reasonable and to assess the level of risk in the projections. This in turn can help form inputs and adjustments to the solvency analysis.

**Are the projections reasonable?** One step in analyzing projections is to perform a financial statement analysis of the subject company. This step is easier if the company has been in operation for several years and has generated revenue, positive earnings, and/or cash flow. Historical financial statement ratios (e.g., analyzing factors such as growth rates, profit margins, and liquidity ratios) can be compared to those of other industry companies or to industry benchmark data. The performance of the subject company can also be analyzed over time, and changes in performance can be compared to other industry companies to determine whether the company is performing better or worse than them.

Another step in analyzing projections is to do research on the subject industry. Industry reports Wall Street firms or independent research firms prepared can present both historical and projected financial information for the industry.

Once the analyst has thoroughly examined the subject company alone as well as by comparison to similar companies and within the context of its industry and markets served, the foundation is laid for a deeper examination of the projections used

in the solvency tests. As discussed above, two of the obvious metrics that should be analyzed are profit margins and growth rates. However, several other metrics can have a significant impact on projected cash flow and value and, therefore, warrant scrutiny. The following is a noncomprehensive list of financial statement metrics that can help assess whether projections are reasonable.

- **Revenue growth rates.** The projected growth in revenue is the starting point for analyzing projections since growth in revenue is a key determinant of whether a company can grow its earnings and cash flow. If projected revenue growth is significantly greater than the company's historical revenue growth or is significantly greater than projected industry growth, the analyst should seek a valid explanation such as a competitive advantage. If the analyst cannot rationally explain the subject company's projected revenue growth, he or she might determine that the projections are overly optimistic.
- **Gross profit margins.** The underlying profitability of the goods or services the company sells is an important point of analysis. As with revenues, projected gross profit margins should be compared to company historical results and industry performance. If projected profit margins are greater than historical measures, then there should again be a valid explanation supporting the improvement in margins. If projected margins are greater than industry profit margins, there should be a valid explanation for the difference. In analyzing gross profit margins, it's important to understand the calculation of cost of goods sold. Not all companies follow the same accounting procedures for calculating the cost of goods sold, and the analyst may need to reconcile differences in gross margins across companies to other levels of profitability. In addition, it's important to understand whether the revenue or expenses for the company and the industry are commodity-like, which can also indicate reasonableness by comparison

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1 Full descriptions of solvency tests and valuation methodologies are beyond the scope of this article. *Editor's note: Craig Jacobson and Stephen Selsbt will conduct a webinar on June 5 titled Solvency Opinions: Legal Insights and Best Practices for Valuation. For more information, go to [bvresources.com/products/training](http://bvresources.com/products/training).*

## THE USE OF FINANCIAL PROJECTIONS IN SOLVENCY OPINIONS

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to other industry companies. For example, in the propane distribution industry, the underlying product is a commodity, and costs for other inputs such as labor and trucks should be somewhat similar across companies.

- *EBITDA margins.* Earnings before interest, taxes, depreciation, and amortization (EBITDA) is a common measure of operating income. It measures earnings before consideration of a company's capital structure, tax status, and the state of its fixed assets. Analysis of EBITDA margins is important for many reasons. First, EBITDA measures the profitability of a company after consideration of its two primary expense categories: cost of goods sold and operating expenses. As with the metrics discussed above, a comparison to both historical results and industry data should be performed. Second, EBITDA is a nonstandard measure of earnings that different companies may calculate differently. Finally, above and beyond the nonstandard nature of EBITDA, many companies calculate EBITDA using certain adjustments to historical or projected operating expenses. This "adjusted" EBITDA is sometimes labeled "adjusted EBITDA" and, other times, just labeled "EBITDA." Adjustments are often justified as reflecting nonrecurring items. These adjustments should be analyzed individually in order to determine their validity. Sometimes an operating expense is in fact nonrecurring on the face of it but represents a factor that must be replaced (for example, a consulting expense might represent a necessary factor that must be replaced perhaps by increasing headcount). And, if a company has nonrecurring expenses or other adjustments every year, it might be that, in the aggregate, they're not nonrecurring and might lead to an improper increase in projected cash flow and, therefore, value.<sup>2</sup> Overall, a company's operating expense structure represents the

difference between gross profit margins and EBITDA margins. Management often assumes that it can "get more with less" by decreasing operating expenses without any negative impact. However, absent a valid explanation for this assumed increase in operating expense efficiency, it might be more reasonable to assume, for valuation and solvency purposes, that no such change is reasonable.

- *Capital expenditures.* Capital expenditures represent cash needed to maintain, upgrade, or increase the capacity of a company's fixed assets. Every industry has different capital expenditure needs. The required level of capital expenditures depends on factors such as the nature of the company's business model (e.g., lease versus own), its product mix, the age and maintenance history of its assets, expected changes in the industry, and the historical levels and timing of capital expenditures at the subject company. After analyzing the growth and margins factors discussed above, the analyst should determine whether the projections provide for an adequate level of capital expenditures. Again, a comparison with historical measures as well as industry data can aid in assessing whether there is sufficient capital expenditures. As with operating expenses, companies often assume they can do "more with less." A projected change in capital expenditure metrics can significantly impact projected cash flow and, therefore, value, and any projected "lower expenditure" efficiencies might not be reasonable. On the other hand, spending on capital assets can at times actually improve how a company operates and may even lead to the elimination of costs in other areas of the business.
- *Incremental working capital.* Growing companies typically need to maintain a portion of earnings to increase their working capital in the form of increases in inventory and

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<sup>2</sup> Some expenses are fairly common or "normal" even though they may not recur in a predictable manner.

accounts receivable. As with other metrics described in this article, a comparison should be made to both historical company working capital metrics as well as to industry data. In addition, the analyst should determine whether the company's balance sheet as of the valuation date has a proper level of working capital. A valuation deduction might be needed to make up a working capital shortfall. A working capital surplus might represent excess assets that, from a solvency measurement perspective, may add to the value of the company's operations.

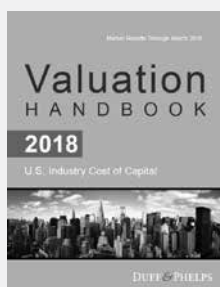
In the case of an early-stage company, which typically has little or no revenue and has not achieved positive earnings or cash flow, an assessment of the reasonableness of projections is more complex. A comparison with other industry companies is often not possible because data on other similar early-stage companies are rarely available, and the companies for which data are available are generally further along in the development cycle.

Projections for early-stage companies are often described as "hockey stick" projections since they tend to start out slow for a short period and then increase significantly for several years. It is useful to compare projected growth rates, profit margins, and other financial statement metrics to more established companies in order to analyze the projections. For example, one can determine whether the short-term and long-term expectations for factors such as gross profit margins and operating expense projections are similar to other industry companies. Within an industry, competitive market forces that build up over time tend to result in the convergence of profit margins and other factors. A company that expects to achieve greater profit margins over the long term would be expected to have a competitive advantage that other companies lack. For example, Apple has been able to achieve higher profit margins on mobile phones than its competitors; however, there is evidence that it might be difficult to maintain this differential over the long term.

If the steps above indicate that the projections are overly optimistic, this factor must be accounted for in the preparation of a solvency opinion as discussed below.

**The balance sheet test.** The balance sheet test begins with a valuation of the subject company's assets, giving consideration to commonly accepted valuation measurement approaches. The valuation analyst will often use one or more of three common enterprise valuation techniques: the market approach using guideline public companies, the market approach using comparable transactions, and the income approach using the

## Cost of Capital



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## THE USE OF FINANCIAL PROJECTIONS IN SOLVENCY OPINIONS

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discounted cash flow (DCF) method. The DCF calculation uses projections as its most important input. Valuation analysts often place greater weight on the DCF value indication than on the market approach analyses, so the reasonableness of the projections is a key determinant as to whether the analysis will indicate solvency.

If projections are deemed to be overly optimistic, two adjustments can be utilized to account for this optimism: adjusting the present value discount rate (representing the required rate of return of an investment in the company in consideration of the level of risk) or adjusting the projections themselves. The pros and cons of each type of adjustment are discussed below.

*Adjusting the discount rate.* The first adjustment that can account for optimistic projections is to increase the discount rate. Common discount rate methodologies consider factors such as the risk-free rate, the return on large company equities in general, an industry risk factor, and a company size risk factor. An additional risk component, called the company-specific risk premium (CSRP), can be applied to account for the additional risk of investment (note that the CSRP can also be used to adjust for factors other than the optimism of the projections).

All else equal, the higher the projections, the greater the level of risk in achieving the projections. Therefore, a higher discount rate that reflects this level of risk is one method for adjusting for optimistic projections.

*Adjusting the projections.* The second adjustment that can account for optimistic projections is to modify the projections themselves. Simple adjustments can be made for one or more years to factors such as growth rates, expense and profit margins, capital expenditures, and incremental working capital. The choice as to the number and scope of adjustments should be based on the analyses discussed above but will also inevitably include some amount of judgment on the part of the analyst.

In certain situations, such as with some early-stage companies, the analyst can extend the projections for a number of additional years. In this case, it is possible that management's projections do not go far enough into the future for the company to have achieved stable long-term growth rates and profit margins. The analyst can add additional years to the projections, during which period these factors can be adjusted in order to reflect long-term growth expectations. If the terminal value at the end of the projections period is calculated using a perpetual growth model, these additional years can allow for a more reasonable calculation of terminal value.

The adjustment process necessarily involves some amount of judgment but should consider empirical data as appropriate.

*Which adjustment approach to take?* The determination of which adjustment approach is appropriate (e.g., to adjust the discount rate or the projections) is different for each engagement. Sometimes the legal environment can help guide such decisions. For example, certain jurisdictions frown on the use of CSRP, which might suggest that it's a better idea to adjust the projections themselves. On the other hand, particularly for early-stage companies, where the company has not yet achieved substantial revenue or any amount of positive earnings or cash flow, even a reasonable set of projections will have greater risk than industry norms, which the use of a CSRP can account for. At the end of the day, the analyst must rely on a combination of experience and research when determining how to deal with overly optimistic projections.

**The cash flow test.** The cash flow test indicates whether a company is expected to meet its debt obligations after considering cash flow generated by operations, as well as from any additional borrowing capacity. Unlike the DCF analysis performed for the balance sheet test, if the projections are deemed to be overly optimistic, no mechanism such as a present value discount rate



accounts for this optimism without adjusting the projections themselves.

Therefore, it may help to either adjust the projections or create new projections scenarios in order to perform the cash flow test. Since the purpose of a solvency analysis is often to assess whether a company can meet its debt obligations following a pending transaction, the analyst can run sensitivity analyses, or different scenarios, on the projections in order to test whether the company would pass or fail if certain management assumptions are changed. For example, it might be instructive to identify the sensitivity to solvency outcomes associated with changes to particular inputs and then to decide whether or not enough support exists for the key drivers of cash flows.

Another analysis that may be useful in dealing with an overly optimistic projection is to perform a simple scenario in which the cash flow test is based primarily on historical operating results, perhaps using the most recent full year prior to the transaction. The financial results for this year can be extended forward at different assumed growth rates (which might include a no-growth scenario). This type of analysis may provide relevant information regarding solvency. For example, if management has projected greater efficiencies from operating expenses and/or capital expenditures, closely linking a cash flow test scenario to its historical results (i.e., without the projected efficiencies) can indicate whether the company will be solvent if the efficiencies are not achieved.

**Summary and conclusion.** This article has presented as framework for considering overly optimistic projections when preparing a solvency opinion. In a litigated environment, the valuation analyst will be challenged to defend any adjustments made to projections prepared by management, who are often given the presumption of knowledge about the company. The analyst should be prepared to defend and explain the rationale for adjustments to projections or to the use of a CSRP in calculating the discount rate.

The fact is that a set of overly optimistic financial projections can negatively impact the reliability of a solvency opinion, and the adjustments discussed in this article, when properly applied, can result in a more reliable analysis. ♦

**Craig Jacobsen** is a senior managing director in the New York City office of GlassRatner. He has over 30 years of experience in valuation, litigation support services, and transactions consulting. His experience includes performing valuations for investment banking services including mergers, acquisitions, fairness opinions, and pre-IPO services. He can be reached at [cjacobsen@glassratner.com](mailto:cjacobsen@glassratner.com).

## Royalty Rates



### The BVR/ktMINE Royalty Rate Benchmarking Guide, Global Edition

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## CHECKLIST FOR INITIAL INFORMATION REQUEST TO ANALYZE REPLACEMENT COMPENSATION

# Checklist for Initial Information Request to Analyze Replacement Compensation

The Tax Cuts and Jobs Act (TCJA) will trigger much greater scrutiny on what constitutes reasonable compensation for owner-employees of pass-through entities (PTEs). The new tax law created a deduction (the Section 199a deduction) for PTE owners, and reasonable compensation figures importantly into the calculation of this deduction.

This matter is now more prominent on the IRS's radar. For example, the letter the IRS sends to acknowledge a taxpayer's election of S corp status explicitly states that owners must pay themselves reasonable compensation. IRS Form 1120-S requires salaries to be broken out for employees and owners so the IRS can examine the amounts. Before the new tax law, many S corp owners would be advised to keep their compensation as low as possible but just high enough to stay off the IRS radar. That strategy is not valid any longer. A more serious analysis must now be done, ideally by someone experienced with executive compensation, to negotiate the new balancing act between

compensation and the counteracting forces in the new law so that a business owner can get the most out of the new deduction.

**Key point.** The new tax law does not change the concept of the determination of reasonable compensation from a valuation standpoint. But it means that it's more important than ever to make sure your analysis will survive the brighter glare of the regulatory spotlight. That means collecting information that will support your determination of reasonable compensation.

During a webinar,<sup>1</sup> compensation expert Stephen Kirkland (Atlantic Executive Consulting) pointed out that, to normalize compensation, you need to get certain information from management. Tax returns may not be reliable, he says, although you still need to review them. Kirkland offers the

1 Normalizing Owner Compensation: Up Your Analysis, BVR webinar, Dec. 5, 2017. An archive recording is available at [sub.bvresources.com/bvstore/cd3.asp?pid=CD575](http://sub.bvresources.com/bvstore/cd3.asp?pid=CD575).

### Compensation Checklist: Initial Information Request

- ☑ Please provide each of the following or indicate that it does not exist: Detailed description of the key individual's various responsibilities at the company, including those related to management, marketing, recruiting and training of employees, and negotiating with suppliers. Please include an estimate of time spent in each broad area (i.e., 10% in finance, 30% in marketing, etc.).
- ☑ A resume, bio, or CV for the key individual.
- ☑ Detailed description of the company's business operations—please include number of employees, physical locations, NAICS codes ([census.gov/eos/www/naics/](http://census.gov/eos/www/naics/)), and website addresses (URLs).
- ☑ Copies of federal corporate income tax returns and financial statements for recent years.
- ☑ A summary of any logs or other records that document the individual's work.
- ☑ Total number of hours the key person worked in a typical month.
- ☑ All titles that were used (on business cards, websites, etc.) for the key person.
- ☑ Description of travel requirements.

## CHECKLIST FOR INITIAL INFORMATION REQUEST TO ANALYZE REPLACEMENT COMPENSATION

- ☒ Details of the key individual's most significant achievements during recent years such as favorable contracts negotiated, key customers attracted to the company, successful reorganization of the company, etc.
- ☒ Details of any intangible assets the key person created. If one of these assets has not yet generated revenue, please provide an estimate of the current value of that asset or a projection of revenue anticipated from the asset over the next five years.
- ☒ Description of the key individual's most significant attributes such as skills in marketing, negotiating, and finance. Include language skills if multilingual and expertise with technology.
- ☒ Does the key person have personal/professional goodwill in the form of public name recognition or relationships with major customers, referral sources, or regulators? If so, please describe.
- ☒ Any (formal or informal) performance evaluation the individual received from the board of directors, awards or acknowledgements from suppliers, customers, industry associations, etc.
- ☒ Any employment contract, noncompete agreement, buy-sell, or other agreement between the individual and the company.
- ☒ Details of any corporate debts or leases the key individual guaranteed.
- ☒ Details on cash and noncash compensation paid to the key person during recent years.
- ☒ Please describe benefits the company provided to the key person including retirement plans and welfare plans.
- ☒ Please identify the company's primary competitors.
- ☒ Organizational chart of the company.
- ☒ Details of any job offers the individual received from other companies in recent years if compensation amounts were included.
- ☒ Documentation of the company's compensation philosophy and bonus plan.
- ☒ Copies of any board of director minutes discussing the key individual's duties, performance, or compensation.
- ☒ Explanations of whether and why the key employee believes he or she deserves catch-up pay for undercompensation in prior years. (For this to be considered, some financial and compensation information from those prior years will be needed.)

(Source: Stephen D. Kirkland, CPA, CMC, CFC, CFF, [CompensationOpinion.com](http://CompensationOpinion.com))

following checklist designed to initiate the collection of the data you will need.

At the end of your data gathering, you should ask the question, "Is there anything else I need to know to normalize compensation?" That way, management can't come back with "you didn't

ask," if you miss something. Kirkland says one company owner lost his license to practice in his profession but never disclosed it. He also advises that you put in the engagement letter that you will be delving into reasonable compensation—it's a sensitive topic, and some owners are surprised that it's part of the process. ♦

## Book Review:

# ***The BVR/AHLA Guide to Valuing Physician Compensation and Healthcare Service Arrangements, 2nd Edition***

By Greg Endicott, CPA/ABV, ASA, CEIV



Healthcare is one of the most dynamic and challenging industries for valuation professionals. Heavily regulated, subject to local, regional, and national economic forces coupled with technological change—it is not an industry to be dabbled in.

While it is fairly typical to have a variety of purposes for appraisals within an industry (for example, tax purposes, financial reporting, etc.), appraisers are typically still looking at valuing assets and liabilities at the end of the day. The valuation methodologies, while still evolving, have years of court cases, audit review, and other elements of scrutiny that have created a wealth of information over the years for valuation professionals to review for guidance.

In addition to the traditional disciplines of business valuation, real estate valuation, machinery, equipment, and personal property, healthcare valuation adds compensation valuation to the mix. Rather than valuing assets and liabilities, compensation valuation values services. Overlay the complexities of the healthcare industry with a relatively new valuation discipline and multiple elements of complexity arise.

This is where the value of the 2nd edition of the *BVR/AHLA Guide to Valuing Physician Compensation and Healthcare Service Arrangements* comes in. The 2nd edition expands upon the groundbreaking 1st edition and provides 1,400 pages of content written by 42 experts in the field, including Mark Dietrich and Timothy Smith, who also served as the book's editors. The American

Health Lawyers Association (AHLA) and Business Valuation Resources (BVR)<sup>1</sup> are co-publishers of the guide.

Within the 83 chapters and four practice aids, 50 chapters are new and 29 have been updated and revised since the 1st edition. As an interesting note, given the significance of the healthcare regulatory construct, eight of the 42 authors are practicing attorneys. This is truly illustrative of the breadth and depth of content that you would expect in the most comprehensive book on the healthcare compensation valuation discipline.

The new edition of this guide is divided into two volumes and creates smaller, more focused chapters. I found this reorganization to be very useful and helpful in focusing and disseminating information quickly. It is also more closely tied to the reality of this discipline in providing an understanding of the details and nuances of these arrangements that can significantly impact the valuation methodology and approach.

Part I consists of eight chapters (Chapters 1 to 8) and provides an introduction to healthcare compensation valuation. Reading this section is an absolute necessity to understand the discipline of healthcare compensation valuation.

Part II begins with seven chapters (Chapters 9 to 15) discussing the regulatory construct applicable to healthcare compensation valuation. This section is notable in that it focuses heavily on the regulations that are the foundation for much of healthcare valuation work, particularly with respect to compensation. There is also a great chapter on reconciling traditional appraisal

<sup>1</sup> The book can be found at [bvresources.com/publications](http://bvresources.com/publications).



methodology with fair market value for regulatory compliance.

In Chapters 16 to 20, the concept of commercial reasonableness is discussed. Commercial reasonableness is a concept that appraisers may not be familiar with if they haven't done healthcare valuation and is a mandatory read for anyone doing healthcare valuation work for compliance purposes.

Part II closes out with selected advanced topics in Chapters 21 to 25.

Part III (Chapters 26 to 37) addresses the appropriate use of survey data in valuing physician compensation. This is a hot topic because survey data quickly gained popularity in the application of the market approach when valuing physician compensation—primarily due to apparent endorsement in the final Stark regulations and the ease of availability and use. More recently, the extensive use of survey data is being challenged and debated within the compensation valuation community.

Part IV consists of Chapters 38 to 48 and addresses "Key Topics in the Economics and Valuation of Physician Practices," which examines a variety of topics such as reimbursement, RVUs, practice losses, and other topics for intermediate to advanced practitioners.

It is important to note that, within compensation valuation, there are subspecialty areas that need to be treated differently. Chapters 49 to 55, on valuing specialized services, go into the details of various types of services. Those who have performed physician compensation valuations understand that the type of services can significantly impact the valuation methodology utilized.

Part VI, Chapters 56 to 58, discusses valuing services in the life sciences sector. This is yet another area within compensation valuation that discusses other regulations such as the Sunshine Act, etc.

Chapters 59 to 67, on valuing call coverage arrangements, are invaluable. Compensation for call coverage has expanded dramatically in recent years, and these agreements are not necessarily ubiquitous. Essentially every arrangement may be unique.

Part VIII, Chapters 68 to 77, on valuing physician clinical services, gets into some advanced topics such as the scrutiny of survey utilization and some alternative theories about the drivers of fair market value in physician compensation arrangements.

## June Tip From the Field

### Nuances to Valuing Home Hospice Firms

For the most part, home hospice firms operate much like other home healthcare businesses, but they have some important distinctions. For instance, hospice care kicks in for anyone certified as having six months or less to live, which introduces an element of risk. A major area of fraud at hospice agencies is failing to comply with the requirements for recertifying patients who pass the six-month mark. Hospice firms can get hit with stiff penalties for failing to comply. All hospices must have a medical director, and all hospice patients must have 24/7 access to physician services. Therefore, the fair market valuation and commercial reasonableness of the physicians' services are important.

Source: Hospice Valuation: Trends, Value Drivers and Physician Compensation, BVR webinar, April 12, 2018. Available at [sub.bvresources.com/bvstore/cd3.asp?pid=CD604](http://sub.bvresources.com/bvstore/cd3.asp?pid=CD604).

## WORK FILE CHECKLIST FOR LIFE FOR THE PROJECTION PERIOD OF CUSTOMER INTANGIBLES

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One of the emerging trends in physician compensation arrangements is the use of value-based reimbursement models. Part IX discusses these alternative payment methods and the impact on compensation valuations.

The end of Volume 2 has two interesting chapters on international perspectives on healthcare valuation. Healthcare compensation valuation is certainly one of those disciplines where the regulatory construct in each geography has a significant impact on the need and application of valuation.

In summary, the 2nd edition of the *BVR/AHLA Guide to Valuing Physician Compensation and*

*Healthcare Service Arrangements* is an invaluable resource for new and experienced practitioners and users of compensation valuation alike. For new practitioners, it provides a comprehensive background on the discipline, while experienced practitioners will find detailed chapters on just about every area in this discipline. Lastly, users of physician compensation valuations, including healthcare attorneys, will also find the book extremely useful. ♦

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## Work File Checklist for Life for the Projection Period of Customer Intangibles

Under the new requirements for fair value for financial reporting, valuation experts will be expected to have a certain amount of documentation in their work files. The new requirements are contained in the Mandatory Performance Framework (MPF) for the Certified in Entity and Intangibles Valuation (CEIV) credential. Regardless of whether you hold the CEIV credential or not, anyone doing fair value for financial reporting should comply with these new rules.

**Practice aid.** A work file checklist is a good compliance tool for what the MPF requires regarding all the different aspects involved in fair value measurement. In past issues of *BVU*, we presented checklists for a number of valuation areas. In this issue, we give you a checklist for how to document the life for the projection period with respect to noncontractual customer-related intangible assets (see Section A3.4 of the MPF). A typical asset of this type is a customer list, which represents customer relationships and can be a significant asset that must be quantified in certain instances.

The fair value of a customer relationship asset is the present value of the after-tax cash flow projected over its remaining useful life, which must be determined. The remaining useful life is generally computed using customer survival rates and other factors, such as customer mortality, whether or not a contract exists, the type of business, and whether the subject business can offer an inherent competitive advantage to its customers that other businesses cannot.

The MPF (in Section A3.4.4) contains the following important point:

An economic life is estimated only for purposes of valuing the subject interest. Although this information may assist management in its determination of the amortizable life of the subject interest, it is not the valuation professional's responsibility to conclude a specific life for amortization purposes. Thus, the valuation professional's report should not provide any conclusions of amortization life and must clearly state

## WORK FILE CHECKLIST FOR LIFE FOR THE PROJECTION PERIOD OF CUSTOMER INTANGIBLES

### Work File Checklist: Minimum MPF Requirements for Life for the Projection Period

The valuation professional, at a minimum, must document the following in writing within the work file, if applicable:

- ☑ Analyses and discussions with management that identify key value drivers and related assets associated with those value drivers, including the rationale for the transaction (for example, strategic, financial), and whether the acquisition was made in a competitive bid environment;
- ☑ The description in sufficient detail of all the assets and liabilities being valued such that an experienced professional not associated with the valuation engagement could identify the assets and liabilities by accounting groupings, segment or reporting units, and so forth (*Note: The identification of assets and liabilities is the responsibility of management and so the valuation professional should ask management for properly documented support*);
- ☑ The rationale for the inclusion in the valuation analysis of the selected assets and liabilities (for example, assets that met the separability, legal, and contractual criteria in FASB ASC 805, if applicable);
- ☑ The rationale for excluding from the valuation analysis certain assets and liabilities (that might otherwise be considered reasonable for inclusion);
- ☑ The extent to which the valuation professional used or relied on information contained in valuation reports with earlier measurement dates (particularly as it may relate to calibration), including valuation reports prepared by third-party specialists or other valuation professionals; and
- ☑ The description of the identified principal market and market participant assumptions.

Be aware that these are minimum requirements, so more information may be necessary. In future issues, we will provide other checklists that will go into specifics of the documentation requirements for other methods, inputs, and assets/liabilities.

(Source: This checklist is derived from the document "Application of the Mandatory Performance Framework for the CEIV." The information in this checklist has been summarized and adapted. See the actual document for additional explanation and requirements at [ceiv-credential.org](http://ceiv-credential.org).)

that determining the pattern of amortization life of the subject interest is management's responsibility.

**Important:** Though management may retain a valuation professional to consult on the pattern of amortization life of a subject

interest, management is always responsible for the estimates and results.

This checklist is based on what is contained in the two MPF documents, which you can download from a special website set up for the CEIV credential ([ceiv-credential.org](http://ceiv-credential.org)). ♦

## BV Firm Marketing Experts Reveal Practice-Building Insights

BVU had the pleasure of talking with Debby Sweeney and Mellanie Bartlett, co-owners of Sweeney & Bartlett Marketing Partners Inc. They work with a number of business valuation firms to help them build their corporate and individual brands. They also work with other professional service firms, including attorneys, CPAs, and professional associations, both nationally and internationally. In 2018, the firm celebrates its 10th anniversary in business, and we asked them to share some insights on the marketing of valuation services.

**BVU:** *How did your firm start?*

**Mellanie Bartlett:** After long marketing careers with major corporations, Debby and I worked at two well-known law firms as in-house marketers. Debby had a PR background, and I had an advertising and graphics background, although we each had experience in all facets of marketing. We worked well together and felt we were a good combination, so we started the firm. Our first client was one of our law firms, which is still with us 10 years later.

**Debra Sweeney:** We branched out into CPA firms and then business valuation firms. Our overall focus is on marketing for professional service firms.

**BVU:** *What is it like having BV experts as clients?*

**DS:** We've found them to be superintelligent, creative individuals and very nice people to work with as a team. We've met many through working with them directly and also through the American Society of Appraisers, which is also a client.

**BVU:** *When a business valuation firm comes to you, what does it typically need?*

**MB:** It depends on the firm. Some have very little or no marketing in place and don't know where

to begin. They also frequently don't have the time to devote to marketing. Other firms have an existing marketing program, and they ask us to consult with them about revising it or developing it further. The word "partners" is in our firm name because that is how we like to work with our clients, as partners. We can either be the entire marketing arm, or we can plug into an existing department. Either way, we integrate into the firm and become part of the team.

**BVU:** *We sometimes hear that business valuation experts should specialize either in an industry or type of valuation engagement. Do you help position experts in this way?*

**MB:** Differentiating yourself or your firm from competitors is very important, but you don't necessarily have to carve out a sliver from your practice to stand out. For example, one of our business valuation clients lived and worked in China for a time, and he and his firm have become known for their "international reach." They offer a wide range of valuation engagements, but they have developed a global persona. Any positive attribute can make you memorable and can work in terms of differentiation. Specializing in an industry or certain type of valuation can certainly work, too, but there are any number of other options to help set you apart.

**BVU:** *That sounds like a branding strategy.*

**DS:** Yes, it is. Our mantra is "share your expertise." For example, write an article or make a presentation at a conference or meeting. There are many opportunities to do this, and it's extremely valuable in building your brand. What's important is getting in front of prospective clients, which may mean breaking away from just writing or speaking to an audience of your peers. We often place articles written by our valuation clients into local or state bar association journals where they get



exposed to a huge audience of attorneys. This works very well, and our clients report that they get calls as a result. Also, these articles can be leveraged and turned into a live presentation or be cut down to use as e-mail blasts or in social media.

**BVU:** *We did a survey<sup>1</sup> last year of BV firms, and “updating the website” was cited as one of the most successful ways to increase business. Is that consistent with what you’ve seen?*

**DS:** Yes. All BV firms need a professional website, and many of our new BV clients ask us to rebuild their websites for them.

**BVU:** *I understand that your firm did the website for Morrison Valuation and Forensics Services, which is based in Orlando, Fla. ([morrisonvfs.com](http://morrisonvfs.com)).*

**DS:** Yes, we did. Bob Morrison had left a large firm to start his own firm, and we designed and built his website. We also did all of the startup marketing, including a substantial amount of public relations strategy to help build name recognition quickly. We had his firm up and running very fast and still enjoy working with him today.

**BVU:** *How does a BV firm drive traffic to its website?*

**MB:** One way is to be active on social media—Twitter, LinkedIn, etc.—with good content that can be reposted. Another way is to regularly post relevant content on your website with highly searchable terms. Plus, ongoing content creation also helps to showcase your expertise and keeps your firm name top-of-mind.

**BVU:** *Yes, we, of course, see that here at BVR. Our website contains a huge amount of content that drives traffic to us. In fact, we license our content*

*to BV firms so they can use it for their own website. They can use it as is or adapt it as their own.<sup>2</sup>*

**DS:** That’s great—an easy way to launch a “content marketing” strategy.

**BVU:** *In terms of social media, I would imagine that some firms may not be geared toward using that strategy.*

**MB:** That’s correct, not all firms will use all forms of marketing. We do a custom approach for each firm that depends on its particular capabilities because any program involves client participation. The first thing we do is sit down with the firm and develop a strategic marketing plan that is custom designed. The plan will depend on the firm’s strengths and capabilities. For example, some firms may not want to dive into social media and would rather write articles or blog. Others may prefer to give a live presentation, say, at the local bar association.

**DS:** We focus on what will work for a particular firm, and it’s an evolving process. We’ll suggest something that the firm can try, and it may love it, so we’ll build on that. Otherwise, other options will work better for them. Most of the time, we will start out recommending a relationship marketing campaign.

**BVU:** *In our survey, many respondents said they found that social media was not a very effective way to market. Any thoughts on that?*

**MB:** People sometimes want to see hard ROI numbers from their efforts, but it’s often very difficult to determine that a lead came from social media. We also find that, when surveyed, clients often don’t “connect the dots.” Even if you directly ask them, they won’t reference that they saw you on LinkedIn or Twitter—it will be another source. Social media is important in that it allows you to be “out there” and connected, but you

1 BV Firm Economics & Best Practices Guide, BVR, June 2017 ([bvresources.com/products/the-bvr-business-valuation-firm-economics-best-practices-guide](http://bvresources.com/products/the-bvr-business-valuation-firm-economics-best-practices-guide)).

2 BVR’s Content License ([bvresources.com/products/content-license-subscription](http://bvresources.com/products/content-license-subscription)).

## BV FIRM MARKETING EXPERTS REVEAL PRACTICE-BUILDING INSIGHTS

often will not be able to measure a direct ROI because it's just one part of an overall branding campaign.

**DS:** Also, some firms have an overly complex social media strategy and lose sight of the fundamentals. For example, when using social media, it's critical to make yourself "findable," so you can simply focus on having a good LinkedIn profile, and that can help a great deal.

**BVU:** *If a firm is on a shoestring budget, can it use a marketing firm like yours?*

**DS:** Yes. We don't work on a retainer, which a lot of our clients appreciate, so we can be very flexible. We would come in and do a needs assessment and develop a plan for what needs to be done. Going forward, the firm can do as much of the marketing itself that it would like, and we can just fill in the gaps. And it can go at its own pace.

**MB:** I would say, however, that there does need to be a certain level of commitment for good marketing habits, though. We often find that a firm has good intentions but then just gets stuck at some point, so we will do "accountability checks" with it. We do a weekly or monthly call to keep the firm moving forward.

**BVU:** *For a small firm with limited resources, what is the minimum it would need from a marketing perspective?*

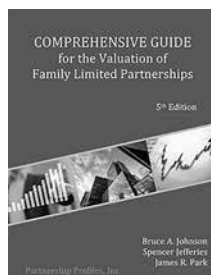
**DS:** A few things. First, a good website with information that best represents the firm and its professionals. And it should be designed so that you can easily make changes to it yourself and not be dependent on an outside service for that. Second, you need a good email contact list. This can be used for e-blasts that share your expertise. You don't need to do a constant stream of these; you can do them infrequently.

**MB:** You also need to be disciplined enough to spend some time out of the day on marketing.

Think a little marketing every day—even if it's just for five minutes.

**For more information.** Sweeney & Bartlett Marketing Partners Inc. is located in Maitland, Fla. Its website is [sweeneybartlett.com](http://sweeneybartlett.com) and you can contact it at [info@sweeneybartlett.com](mailto:info@sweeneybartlett.com) or by phone at 407-902-7141.

## Family Limited Partnerships



### Comprehensive Guide for the Valuation of Family Limited Partnerships

Get all of Partnership Profile's annual Partnership Re-Sale Discount Studies published

between 2012-2016 in the new edition of *The Comprehensive Guide for the Valuation of Family Limited Partnerships*. This comprehensive update and many of the changes are based on the authors' experience handling IRS audits regarding discounts for lack of control and marketability. This step-by-step guide on valuing noncontrolling interests includes the following:

- Five new case-study valuation examples
- New study on market pricing of liquidating noncontrolling real estate interests
- Employing the best empirical data in a valuation and the best valuation method
- Updated section on calculating discounts for lack of marketability
- How to value general partnership interests
- How to handle multi-tiered partnerships (stacked discounts)

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## BVU News and Trends

A monthly roundup of key developments of interest to business valuation experts.

### Regulators, Standard Setters, VPOs

#### USPAP 2020-21 exposure draft due soon

A first exposure draft of proposed changes for the 2020-21 edition of the Uniform Standards of Professional Appraisal Practice (USPAP) will be published in May 2018. This was announced during the April 20 meeting of The Appraisal Standards Board (ASB) of The Appraisal Foundation, which BVU attended. On June 8, there will be a live online briefing that will involve reviewing the exposure draft and soliciting feedback. The April 20 meeting also included a review of the Discussion Draft of Potential Areas of Change for the 2020-21 edition of USPAP.<sup>1</sup> The ASB encouraged the public to send any suggested USPAP revisions to [ASBComments@appraisalfoundation.org](mailto:ASBComments@appraisalfoundation.org).

#### Where tax reform cash is going

Much of the windfall savings companies are expecting from the new tax law will be used to increase domestic investment, according to a Deloitte survey<sup>2</sup> of CFOs. They will also boost hiring and wages and repatriate cash abroad. Most of the CFOs polled said they plan to use repatriated cash for investment in both core and new businesses as well as R&D, followed by debt repayments, buybacks, and dividends. While many expect there to be some increase in hiring and pay, it does not account for as much of their anticipated spending as the other areas. The survey polled 155 CFOs, nearly all of whom are from companies with over \$1 billion in revenue.

#### IRS issues guidance on interest expense limits

The Treasury Department and the IRS have issued guidance<sup>3</sup> for computing the business interest expense limitation under the Tax Cuts and Jobs Act. In general, the new tax law imposes a limitation on deductions for business interest certain large businesses incurred. For most large businesses, business interest expense is limited to any business interest income plus

30% of adjusted taxable income. These new limitations blunt the effects of the interest expense tax shield, which increases the cost of debt.

#### ASA to honor brightest young leaders

The American Society of Appraisers will offer a new Rising Stars Award to honor the brightest young ASA leaders who have demonstrated success throughout the year and who are making a difference in their professions and community. Eligible nominees must be age 40 and under and will be judged on their accomplishments, leadership, community efforts, and milestones. Nomination forms (available at [appraisers.org](http://appraisers.org)) must be submitted by Saturday, June 30. The awards will be handed out at the Joint ASA 2018 Advanced Business Valuation and International Appraisers Conference October 7-10 in Anaheim, Calif.

### Methods and Approaches

#### Has Monte Carlo passed muster in court?

During a recent webinar<sup>4</sup> on the use of Monte Carlo for valuing distressed companies, an audience member asked: "Have the bankruptcy court and other courts accepted the Monte Carlo method?" Yes, the speakers—Jim Alerding (Alerding Consulting) and Matt Bernstein (Dixon Hughes Goodman)—pointed out.

In the *Lyondell* case (*Lyondell Chemical Co. v. Occidental Chemical Corp.*, 608 F.3d 284, 5th Cir. 2010), which was an environmental cleanup case, the side opposing the use of Monte Carlo actually conceded that the method is reliable. Also, the court said that "just because Monte Carlo simulation produces a range of outcomes ... does not mean it is speculative" and "the EPA itself has endorsed the use of Monte Carlo analysis." In a bankruptcy case (*In re Nanovation Technologies, Inc.*, 2007 Bankr. LEXIS 1862, May 17, 2007), the expert opposing Monte Carlo was not challenging the model but said that he had never seen it used in similar circumstances. But the court said that it is a "generally accepted statistical tool" and there was "no evidence that might provide a reason to believe that [the analysis] is unreliable." Of course, you

1 [appraisalfoundation.sharefile.com/share/view/s0263242916d424b8](http://appraisalfoundation.sharefile.com/share/view/s0263242916d424b8).

2 [www2.deloitte.com/us/en/pages/finance/articles/sentiment-swells-tax-spending-bills.html](http://www2.deloitte.com/us/en/pages/finance/articles/sentiment-swells-tax-spending-bills.html).

3 Notice 2018-28; [irs.gov/pub/irs-drop/n-18-28.pdf](https://www.irs.gov/pub/irs-drop/n-18-28.pdf).

4 Monte Carlo in Distressed Company Situations; [sub.bvresources.com/TrainingEvent.asp?WebinarID=633](http://sub.bvresources.com/TrainingEvent.asp?WebinarID=633).

can still be challenged on the analysis itself if, for example, the opposition feels you used the wrong inputs or assumptions.

Another audience member asked how one might report on a Monte Carlo simulation in a valuation report. Since the SSVS and USPAP both allow reporting a conclusion of value as either a single amount or a range of values, the report could include a conclusion as a range of values selected from the simulation or a single amount selected from the simulation. Keep in mind that the valuation analyst should be prepared to defend the selection of the range or the amount. It is suggested that supporting language be included within the report itself.

## Cost of Capital

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### Private firms lowball their cost of equity

Surprisingly, over half (54%) of privately held business owners believe their cost of equity is less than or equal to 12%, according to the "2018 Private Capital Markets Report"<sup>5</sup> from Pepperdine University Graziadio School of Business and Management. Approximately 19% of respondents indicated their business cost of equity capital is in the range of 9% to 10%, the range most cited.

Based on the findings of the survey, this "represents a significant misunderstanding by many business owners of their cost of equity," the report says. The survey involves asking private capital market players what returns they project. The players are bank lenders, asset-based lenders, mezzanine lenders, private equity groups, venture capital, and angel investors. We note that the majority of private firms that responded had 20 employees or fewer, with 50% having no more than five employees. Also, over half of them had annual revenues less than \$1 million.

## Research Papers, Studies

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### CFOs surveyed on ERP

In a new paper,<sup>6</sup> John R. Graham and Campbell R. Harvey of Duke University analyze the history of the equity risk premium from surveys of U.S. chief financial officers (CFOs) conducted every quarter from June 2000 to December 2017. The risk premium is the expected 10-year S&P 500 return relative to a

10-year U.S. Treasury bond yield. The average risk premium is 4.42% and is somewhat higher than the average observed over the past 18 years, the paper says.

### Record multiples in PE deals

The "2018 Private Equity Valuations Report"<sup>7</sup> examines trends in financial sponsor-led transactions and highlights how private equity investors are adjusting to record deal multiples. The report, from Murray Devine Valuation Advisors, says that, while U.S. private equity deal volume leveled off last year (falling to levels not seen since 2013), valuation for private equity deals advanced considerably. "The median multiple of 12.9x EBITDA easily surpassed 2016 levels and also exceeded the previous high of 10x EBITDA set in 2006," says the report.

### Appraisal rights in the U.S. and EU

In the U.S., there has been a surge of appraisal petitions and appraisal arbitrage, but this is not the case in the EU, according to a paper<sup>8</sup> by Alexandros Seretakakis (Trinity College, Dublin). In the EU, shareholders viewed the appraisal remedy as a last resort measure because of a variety of factors (which the paper deciphers), including a hostile legal regime, the paper says.

### Firms not ready for new lease accounting

Only one in five finance, accounting, and other professionals say their companies are "extremely" or "very" prepared to comply with the Financial Accounting Standards Board's (FASB) and International Accounting Standards Board's (IASB) respective new lease accounting standards, according to a recent poll<sup>9</sup> from the Deloitte Center for Controllershship. Just 21.2 percent of finance, accounting and other professionals say their companies are "extremely" or "very" prepared to comply with the Financial Accounting Standards Board's (FASB) and International Accounting Standards Board's (IASB) respective new lease accounting standards, according to a recent poll from the Deloitte Center for Controllershship. The rules, effective next year, will thrust a huge dollar amount onto the balance sheets of listed companies using IFRS or U.S. GAAP. These companies will also show higher operating profits, but total cash flows would be unaffected overall, according to the IASB.

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7 [murraydevine.com/news/media/press-release-1-24-2018-lead-capture-page](https://murraydevine.com/news/media/press-release-1-24-2018-lead-capture-page).

8 [papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3136548](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3136548).

9 [slideshare.net/DeloitteUS/lease-accounting-implementation-enters-final-stretch](https://slideshare.net/DeloitteUS/lease-accounting-implementation-enters-final-stretch).

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5 [bschool.pepperdine.edu/institutes-centers-research/centers/applied-research/research/pcmsurvey](https://bschool.pepperdine.edu/institutes-centers-research/centers/applied-research/research/pcmsurvey).

6 [papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3151162](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3151162).



## Valuation benchmarks for ASCs

HealthCare Appraisers Inc. has interviewed ambulatory surgery centers (ASCs) to determine trends in the value and characteristics of ASC ownership interests. It has just released the "2018 ASC Valuation Survey" (available at [healthcareappraisers.com](http://healthcareappraisers.com)) for which it compiled data that represent over 700 ASCs throughout the country. Here are just a few of the findings:

### *Single-specialty centers (controlling interest):*

- 76% of respondents reported valuation multiples of 6.0x to 7.9x EBITDA; and
- 23% of respondents reported valuation multiples of 5.0x to 5.9x EBITDA.

### *Multispecialty centers (controlling interest):*

- 64% of respondents reported valuation multiples of 7.0x to 7.9x EBITDA; and
- 29% of respondents reported valuation multiples of 6.0x to 6.9x EBITDA.

## Valuations frustrate RIAs

A survey<sup>10</sup> of the nation's top registered investment advisors (RIAs) by PPB Capital Partners found that firms are encouraged to provide customized alternative investment solutions for high net-worth clients, but such funds are unwieldy and expensive to operate. Also, over half (52%) of respondents identified underlying investment valuations as the most frustrating area.

## D&P updates multiples in healthcare services

The S&P Healthcare Services Index declined 1.9% over the last month but outperformed the S&P 500, which declined 2.7% over the same period, according to the *March 2018 Healthcare Services Sector Update*<sup>11</sup> from Duff & Phelps. Over the past month, the best performing sectors were specialty managed care (up 7.0%), home health/hospice (up 5.7%), and behavioral

health (up 5.0%). The poorest performing sectors were pharmacy management (down 8.4%), distribution (down 7.1%), and commercial managed care (down 6.0%). The current average LTM revenue and LTM EBITDA multiples for the healthcare services industry overall are 2.13x and 13.9x, respectively.

## Private firm valuations surge per Pepperdine report

Business valuations have been significantly increasing, according to new results from the *2018 Private Capital Markets Project*<sup>12</sup> from Pepperdine Graziadio Business School. Survey respondents from investment banks report that average company valuation multiples have increased from 8.0 to 8.7 times recast EBITDA for firms with EBITDA between \$25 million and \$50 million. The increases are similar for other deal sizes, which are also on the rise after a slight softening in 2016-17.

"Last year, it looked like valuations were starting to soften a bit, after years of very high levels," said Craig R. Everett, Ph.D., finance professor at Pepperdine who runs the project. "However our current survey results reveal that valuations have been aggressively increasing again. Tax cuts and general business optimism are the likely reasons for this new surge in company valuations. It is definitely still a seller's market."

The survey represents the hard work of Pepperdine researchers in developing a private cost of capital method as a legitimate alternative to looking to the public markets. To do this, they ask private capital market players what returns they project. The players are divided into six segments aligned with the major institutional arms of the private investment world, each with different return, investment, and research characteristics. The segments are: bank lenders, asset-based lenders, mezzanine lenders, private equity groups, venture capital, and angel investors.

## New Books, Guides, Publications

### Newest valuation data for A/E firms

The latest transactional data on the fair market value of businesses in the architecture, engineering, and environmental consulting industries (A/E firms) is now available in the *Architecture/Engineering Business Valuation and M&A Transaction*

<sup>10</sup> [prnewswire.com/news-releases/survey-finds-rias-struggle-to-manage-private-alternative-investments-300626451.html](http://prnewswire.com/news-releases/survey-finds-rias-struggle-to-manage-private-alternative-investments-300626451.html).

<sup>11</sup> [duffandphelps.com/-/media/assets/pdfs/publications/mergers-and-acquisitions/industry-inserts/healthcare/healthcare-services-sector-update-march-2018.ashx](http://duffandphelps.com/-/media/assets/pdfs/publications/mergers-and-acquisitions/industry-inserts/healthcare/healthcare-services-sector-update-march-2018.ashx).

<sup>12</sup> [bschool.pepperdine.edu/institutes-centers-research/centers/applied-research/research/pcmsurvey](http://bschool.pepperdine.edu/institutes-centers-research/centers/applied-research/research/pcmsurvey).

*Study*, 5th edition.<sup>13</sup> This study includes data from 169 distinct stock transactions along with supplemental data from publicly available sources. This is the most comprehensive and reliable study of its kind for this industry. Rusk O'Brien Gido + Partners' team of accredited business appraisers with decades of experience valuing privately held A/E firms conducted the research and wrote the study. The prior editions of this study are also available for comparison purposes.

### Valuing paving contractors

BVR just released a new installment in its series of *What It's Worth* guides: *Valuing Paving Contractors*.<sup>14</sup> This report will automatically be loaded into your library if you're a Digital Library or BVPro subscriber. Otherwise, you can purchase it à la carte. Like the other guides in the series, it includes methodologies and special valuation nuances for this type of business, case studies, specific value drivers, benchmarking data from *Pratt's Stats*, and more. A number of valuation experts have contributed to this new guide.

### New *Mergerstat* edition includes premiums over EV

Users of the 2018 *Mergerstat Review*<sup>15</sup> will be happy to see that there are four new tables that focus on premiums paid over the targets' enterprise values. As in previous editions, transaction premiums feature the premium paid for the targets' share prices five days prior to the announcement, but this new update enhances the data. *Mergerstat Review* provides complete statistics on merger and acquisition (M&A) transactions that involve U.S. companies, and the 2018 edition includes the following changes that improve the data:

- Historical updates were completed to 20 years of M&A data, including aggregate volume and value totals, as well as the respective pricing multiples associated with the year's data;
- The 50-category *Mergerstat* industry classifications have been retired in favor of its 20-category industry sectors;

- Foreign seller ownership roles are more clearly defined; and
- Deal pricing has been changed from base equity price to transaction value.

The *Mergerstat Review* PDF is available now, and the print version will be available in mid-May.

### Willamette's spring *Insights* issue is available

The *Spring 2018 Insights*<sup>16</sup> from Willamette Management Associates is titled "Thought Leadership in Breach of Fiduciary Duty Tort Claims—Valuation and Damages Analyses."

Here's a sampling of the articles: "Application of Sales Projection Method in Measuring Trustee Breach of Fiduciary Duty Damages" (Justin M. Nielsen); "ESOP Trustee Considerations in Multistage Stock Purchase Transactions" (Scott R. Miller); "Adjustments to Financial Statements for ESOP Contribution Expense" (Frank R. ("Chip") Brown); and "Reasonableness of Shareholder/Employee Compensation Guidance for Closely Held Corporations" (Robert F. Reilly).

### Miscellany

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#### Consulting biz booming at Big Four

Collectively, the Big Four accounting firms saw 42% of their global fiscal 2017 revenue come from consulting and advisory work. From 2012 to 2017, audit revenue grew by only 3%, but consulting and other advisory services grew by 44%, according to a *Wall Street Journal* article.<sup>17</sup> This is raising the debate about conflict of interest over consulting and auditing within the same firm.

#### Damodaran bares his FANG

Aswath Damodaran (New York University Stern School of Business) gives his update on the trials, tribulations, and valuations of Facebook, Amazon, Netflix, and Google—referred to as FANG by the professor—in his recent blog post.<sup>18</sup> In terms of fallout, at one extreme, users could rethink how they share information

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<sup>13</sup> [bvresources.com/products/architecture-and-engineering-business-valuation-and-m-a-transaction-study-fifth-edition](http://bvresources.com/products/architecture-and-engineering-business-valuation-and-m-a-transaction-study-fifth-edition).

<sup>14</sup> [bvresources.com/products/what-its-worth-valuing-paving-contractor-companies](http://bvresources.com/products/what-its-worth-valuing-paving-contractor-companies).

<sup>15</sup> [bvresources.com/products/factset-mergerstat-review-2018](http://bvresources.com/products/factset-mergerstat-review-2018).

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<sup>16</sup> [willamette.com/insights/spring2018.html](http://willamette.com/insights/spring2018.html).

<sup>17</sup> [wsj.com/articles/how-did-the-big-four-auditors-get-17-billion-in-revenue-growth-not-from-auditing-1523098800](http://wsj.com/articles/how-did-the-big-four-auditors-get-17-billion-in-revenue-growth-not-from-auditing-1523098800).

<sup>18</sup> [aswathdamodaran.blogspot.com/2018/04/come-easy-go-easy-tech-takedown.html](http://aswathdamodaran.blogspot.com/2018/04/come-easy-go-easy-tech-takedown.html).

online, which would disrupt the FANG companies' business models. At the other extreme, this all could blow over. Damodaran believes the outcome will be somewhere between these two extremes and that "there are changes coming to these firms, from within and without, that will have value consequences." One thing is certain: "CEO heads cannot roll," as they did with other companies in trouble, he says. That's because the power of the FANG CEOs is too entrenched. For example, Mark Zuckerberg controls more than 50% of the voting rights of Facebook shares, so he can't be fired—unless he does it himself.

### LEI points to robust growth

Despite the volatility in the stock markets and the weakness in housing construction metrics, the Leading Economic Index increased 0.6% in February, which marked the fifth consecutive month of gains for the index, according to the latest monthly *Economic Outlook Update* (February 2018 issue).<sup>19</sup> While housing starts fell 7.0% (and are now down 4.0% from one year ago) existing-home sales increased 3.0% and are now up 1.1% from one year ago. Other highlights of note include consumer confidence climbing 6.5 points, to 130.8, the highest reading since

19 [bvresources.com/products/economic-outlook-update](http://bvresources.com/products/economic-outlook-update).

November 2000. Likewise, consumer sentiment rose 4.0 points, to 99.7, the highest reading since 2004. There is a great deal of more data in the issue, which you are free to use in your valuation reports (with proper attribution). Don't worry about the data being challenged in court—experts are allowed to quote from material similar experts normally use.

### Pratt's Stats Hall of Fame

*Pratt's Stats* now lists over 29,000 private-company M&A transactions, thanks to business brokers and other intermediaries who contribute the data. Individuals who send in the most transactions are inducted into the *Pratt's Stats* Hall of Fame every quarter. For the cumulative year 2017, they are:

- Greg Kells, Sunbelt Business Advisors (Ottawa, Ontario);
- JG Garner, Associate Equity (Irving, Texas); and
- Arthur Berry, Arthur Berry & Co. (Boise, Idaho).

BVR wishes to thank these individuals and all of the other brokers who help maintain *Pratt's Stats* as the most reliable data source of its kind.



## Global BVU News and Trends



Business valuation news from a global perspective.

### Regulators, Standard Setters, VPOs

#### IVSC interviews head of CAS

In an interview,<sup>1</sup> Dr. Zhang Guochun, the secretary general of the China Appraisal Society (CAS), said that convergence of valuation standards is one of several ways he'd like to see the valuation profession evolve over the next few years. "Convergence of valuation standards is important as economic globalization drives the need for alignment in our systems and approach," he says. "IVS has become the most influential professional valuation standard worldwide and countries should actively seek convergence, either directly or through existing standards, so that it becomes the benchmark for valuation practice worldwide." IVS is the set of global valuation standards

from the International Valuation Standards Council (IVSC). The China Appraisal Society has 3,000 institutional member firms, a practicing appraiser membership of 34,698, and a nonpracticing appraiser membership of 3,864, making it the largest valuation professional organization in the country, Dr. Guochun remarked.

#### Malaysia valuers take ICVS training

Nearly 40 candidates from Malaysia, Hong Kong, and Indonesia recently took ICVS certification training conducted by the Business Valuers Association of Malaysia (BVAM) and the IACVS Malaysia Charter. The International Certified Valuation Specialist (ICVS)<sup>2</sup> designation reflects International Valuation Standards and is designed to help improve and provide a minimum level of

1 [ivsc.org/news/article/professional-insight](http://ivsc.org/news/article/professional-insight).

2 [iacva.org/index.php?ac=article&at=list&tid=115](http://iacva.org/index.php?ac=article&at=list&tid=115).

uniformity and give assurance to clients and regulators around the globe. Developed by the International Association of Certified Valuation Specialists (IACVS) and the International Institute of Business Valuers (iiBV), training is scheduled later this year for Beijing, Hong Kong, Korea, Australia, the Middle East, and other locations, according to the current training calendar.<sup>3</sup>

## BV summits in India

The International Institute of Business Valuers (iiBV) held a BV summit in India on May 3 in Mumbai. The agenda included valuation issues in insolvency, valuation of blockchain-based companies, startups, private equity, M&A, and more. This conference was followed by a two-day iiBV Advanced Topic Workshop, with topics including the cost of capital—India, valuing early-stage companies, valuing minority interests, and valuing intangible assets. I-Deals Network and the iiBV organized these events. There will be another BV summit on June 6 in New Delhi.<sup>4</sup>

## Research Papers, Studies

### Global industry betas for 1Q2018

You can find global betas for 134 industries and “regional” betas for 10 geographical areas (including North America, the EU, and Western Europe) in the *Industry Betas* study<sup>5</sup> for the first quarter of 2018. The study is from Salvidio & Partners, a Rome, Italy-based business valuation firm headed by Ascanio Salvidio that has begun producing a quarterly report on levered and unlevered industry betas. The report is distinctive in that it combines industry and geographical perspectives and also features two separate series of levered and unlevered betas. The first series includes levered and unlevered betas estimated for any selected company, regardless of whether its gross debt is higher or lower than its cash and cash equivalents. The second series excludes “net liquidity” to represent companies where “decisions taken by management, all other circumstances being equal, may be different in case of the company’s gross debt being higher or lower than cash and equivalents,” according to Salvidio. It is hoped that this study will provide valuers with useful information about industry risk in cost of capital calculation, improving

the quality of their analyses around the world. Salvidio welcomes feedback on how to improve the study.

## Country Views

### Changes to U.K. intangible tax regime being reviewed

The United Kingdom has launched a wide-ranging consultation on possible changes to the current regime for taxing corporate intangible fixed assets. The consultation document<sup>6</sup> notes “the growing importance of intellectual property to the productivity of modern businesses” and highlights some areas where current U.K. taxation policy is not consistent with either IFRS amortization requirements or with other tax regimes found internationally, which may be impacting the U.K.’s competitiveness. The consultation raises the possibility that U.K. tax relief will once more be available for acquired goodwill and other customer-related intangibles and could be extended to intangible assets created prior to April 2002 for the first time and to goodwill-attributable businesses related parties commenced before that date. Comments on the consultation document are due by May 11.

### Corona is most valuable brand in Latin America

Mexican beer Corona is the most valuable brand in Latin America, overtaking Brazil’s Skol, which has held the title for the past two years, according to the sixth annual “BrandZ Top 50 Most Valuable Latin American Brands.”<sup>7</sup> Corona took the top spot in the ranking after seeing an 8% brand value growth, to \$8.3 billion, edging out Skol, which grew by just 1%.

### Valuation insights in China

Duff & Phelps has released a Greater China edition<sup>8</sup> of its *Valuation Insights* series, which examines issues such as the updated list of “sensitive sectors” for outbound investment, CFUIUS reform, relaxed restrictions on foreign investment within the Free Trade Zone, the Hong Kong Stock Exchange allowing dual-class shares for listing companies, and more.

3 [iacva.org/upfile/2015/08/20150805091255\\_839.pdf](http://iacva.org/upfile/2015/08/20150805091255_839.pdf).

4 [idealsnetwork.com/business-valuation-summit-6th-june](http://idealsnetwork.com/business-valuation-summit-6th-june).

5 [sub.bvresources.com/defaulttextonly.asp?f=downloads](http://sub.bvresources.com/defaulttextonly.asp?f=downloads).

6 [gov.uk/government/consultations/review-of-the-corporate-intangible-fixed-assets-regime](http://gov.uk/government/consultations/review-of-the-corporate-intangible-fixed-assets-regime).

7 [brandz.com/article/latam-2018--brandz-top-50-most-valuable-latin-american-brands-2018-reports-2871](http://brandz.com/article/latam-2018--brandz-top-50-most-valuable-latin-american-brands-2018-reports-2871).

8 [duffandphelps.com/-/media/assets/pdfs/publications/valuation/valuation-insights/valuation-insight-greater-china-edition-2018-q1.ashx](http://duffandphelps.com/-/media/assets/pdfs/publications/valuation/valuation-insights/valuation-insight-greater-china-edition-2018-q1.ashx).



## BVLAW CASE UPDATE

### Featured Case

## Trustee Succeeds in Curtailing DOL Expert Testimony Under *Daubert*

***Acosta v. Vinoskey*, 2018 U.S. Dist. LEXIS 64094 (April 17, 2018)**

The government alleged the trustee promoted a transaction that caused the ESOP to overpay for company stock. Further, the transaction, somehow, caused the ESOP to suffer a decrease in the value of existing shares. In a semisuccessful *Daubert* challenge, the trustee was able to exclude part of the government's damages testimony under the *Daubert* reliability prong and, by extension, prompt the court to throw out a claim for lack of damages evidence. The trustee's multifaceted efforts to show the government's expert lacked the necessary qualifications were not successful.

**Backstory.** The case centered on a Virginia company that designed and sold equipment for soft drink manufacturers. The original owners wholly owned the company. They created an ESOP whose primary purpose was to invest in employer stock. The plan allowed terminated employees to sell their shares back to the ESOP at a price the ESOP fiduciaries had set. In 2004, the ESOP bought 48% of the owners' interest in the company for \$220 per share. The total purchase price was \$9 million. In 2010, the shares were valued at \$285 per share.

At the end of 2010, the owners wanted to sell the remaining 52% interest in the company. An independent trustee and an independent valuation firm represented the interests of the ESOP. The valuation firm had worked on the prior ESOP transaction. In a first draft, the valuator said it would be fair to the ESOP to pay \$405.73 per share based on the present value

of the company's future cash flow. Representatives of the trustee expressed concerns over the discrepancy between the proposed price and the \$285-per-share price that was stated in a valuation from only a year ago. The valuator explained the price increase by claiming the ESOP owners would control the company as a result of the transaction. The explanation satisfied the trustee. The valuator's final appraisal stated it would be fair to the plan to pay between \$405.73 per share and \$408.58 per share. The owner made no counteroffer but accepted \$406 per share on recommendation of the trustee.

To acquire the shares, the ESOP paid over \$8.5 million in cash and borrowed \$1.9 million from the company and about \$10.4 million from the owner—the company guaranteed the latter amount. As a result of the transaction, all ESOP enrollees received more shares and plan participant balances increased. Although the ESOP had purchased control of the company, one of the owners remained on the company's board.

The Department of Labor filed a complaint in which it essentially alleged that the trustee breached its fiduciary duties of prudence and loyalty to the ESOP by causing the plan to pay more than "adequate consideration." In a separate count, the government alleged the trustee violated its fiduciary duty by allowing the per-share value of stock held by the existing participants in the plan to decrease.

Under the applicable statute, a fiduciary must not cause the plan to engage in a transaction that involves a sale or exchange of property between the plan and a party in interest. However, there is an exemption for transactions that are made for "adequate consideration." The statute defines "adequate consideration" as the "fair market value of the asset as determined in good faith by the trustee or named fiduciary."



## BVLAW CASE UPDATE

The government relied on expert testimony to state its case against the defendant trustee (the entity and an individual). The gist of the government's argument was that the trustee should not have relied on the valuations the independent financial advisor proposed. The sizable increase in value from one year to the next should have been a red flag. Further, the government said an attorney who represented the ESOP had a conflict of interest because of his long-time relationships with the owners and the company. The government, borrowing an argument that was successful in another recent ESOP case, *Brundle v. Wilmington Trust N.A.*, also contended the trustee "did not have sufficient time to complete its work thoroughly." And, the government said, there were no meaningful negotiations over the acquisition price.

The trustee defendants countered that the per-share price increase was based on excess cash and land the company held. Further, the ESOP purchased a controlling interest. Regarding the conflict of interest issue, the trustee said, in the previous transaction, the attorney represented the ESOP, not just the owners and the company.

Also, the trustee, not the attorney, proposed the ultimate purchase price. Moreover, there was evidence that the owner believed he could have sold the interest in the company "for a whole lot more than what they paid for it."

**Problematic expert testimony.** The trustee filed a *Daubert* motion to exclude the government's damages testimony and also filed a summary judgment. The premise was that, once the expert testimony was excluded, the government would lack damages evidence to support its claims and the case would collapse. The government filed its own summary judgment motion. Because the expert testimony was critical to the survival of the government's case, the court first ruled on the trustee's *Daubert* motion.

The trustee claimed that the damages expert was unqualified under Federal Rule of Evidence 702 and his calculation was unreliable under *Daubert*.

*Rule 702.* In essence, Rule 702 requires that a witness be qualified as an expert by knowledge, skill, experience, training, or education. The rule

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proposes a liberal approach to judging a witness's qualifications.

The trustee emphasized the government's expert did not have business valuation experience, was not a CPA or CFA, and was not part of the ESOP community. According to the trustee, the expert didn't belong to any national ESOP organizations and did not know the community's internal standards.

"Variations on this theme fill the defendants' briefs," the court noted. It agreed that the expert had limited ESOP experience, but it noted he had an MBA from Harvard and had valued, bought, and sold businesses for 25 years. Further, he had been an expert witness in a number of significant ESOP cases. "Multiple courts have found [the expert] qualified," the court said. It dismissed the trustee's argument that the expert initially assessed the facts under the wrong standard (applicable to private equity transactions and not the ERISA fiduciary standard), noting the expert's experience with acquiring closely held businesses provided the sort of due diligence that was necessary in the contested transaction. Agreeing with the government, the court said, "ERISA's standards for fiduciaries ... are at least as high as the due diligence standards followed in private industry." Standard-related questions were a proper subject for cross-examination, the court said. In sum, the expert was qualified.

*Daubert.* Under Rule 702 and *Daubert*, expert testimony must be reliable and relevant to the issues in dispute. The trustee in this case focused its attack on reliability.

In a nutshell, expert testimony must be the product of reliable principles and methods and the expert must reliably apply the principles and methods to the facts of the case. In ruling on admissibility, courts may consider whether the expert's theory or methodology can or has been tested, has been peer reviewed, has a high rate of error, and is generally accepted within the relevant scientific community. Courts must not

assess an expert's conclusion but only the underlying methodology. Further, the standard of admissibility is more lenient in the event of a bench trial because there is no need to protect jurors from potentially unreliable evidence.

*Testimony.* The expert proposed two types of calculations for the overpayment claim and for the claim that there was a decrease in the value of existing stock.

*Overpayment.* To support the overpayment claim, the expert determined the fair market value of the company's stock and compared it to the amount the ESOP actually paid. The court found this was an approach courts commonly used to calculate overpayment. To arrive at fair market value, the expert used both a discounted cash flow analysis and a guideline public company approach. The court found both were methods the valuation profession commonly employed. To the extent there was a problem with the expert's methodology, the reason was that the expert applied it incorrectly.

The trustee pointed to various examples of the expert's unreliable application, but the court found only one methodology required exclusion. The remainder of the objections went to the weight of the testimony, not admissibility.

The problem was with the "market comparable methodology," and, specifically, the expert's use of only one publicly traded company as a comparable. The court agreed with the trustee that any meaningful approach should include a group of comparable companies. What compounded the problem here was that the claimed comparable company was insufficiently similar to the subject company. The false comparable generated only about 44% of its revenue from technology similar to the one the subject company produced. The other 56% of revenue came from a different product line. Further, the false comparable obtained over half of its revenue from international business, whereas the subject company's business was exclusively focused on the domestic market.

Because the expert unreliably applied the guideline public company approach, the court precluded him from using it.

The trustee suggested other reasons why the entire damages testimony was unreliable and, therefore, inadmissible. It noted the expert failed to use IRS Revenue Ruling 59-60 or consider the DOL's proposed regulations for his valuation. The court said neither of these sources was mandatory to develop a reliable methodology.

The trustee opposed the government expert's use of a discount for lack of control, arguing the ESOP did purchase control when it acquired the remainder 52% ownership interest. The court found there was a factual dispute on this issue; accordingly, this was an issue to be tried.

According to the trustee, the expert's FMV determination was unreliable on its face because the value the expert proposed was less than the value of the company's assets. The court found the trustee "overstate[d]" the point because, if one looked at the expert's calculations (rather than the trustee's), the company's value as a going concern was actually \$1 million higher than the liquidation value. The trustee compared apples (the government expert's liquidation valuation) to oranges (the trustee's liquidation valuation). However, the court allowed that any finding that the operational company was worth only \$1 million more than it would be worth if it were unloading assets "under extreme need to sell with time constraints and significant discounts" raised questions about the valuation.

The trustee alleged a "battery of other alleged errors," but none rose to the level of requiring the exclusion of the entire expert testimony, the court said.

Decrease in value of existing stock. To support the claim that the transaction made the value of the existing stocks drop, the expert multiplied the calculated overpayment by the number of shares existing at the time of the contested

transaction. The court found there was a "fundamental problem" with that method. It would mean the ESOP overpaid twice: once for the shares acquired in the contested transaction and once for the shares owned at the time of the transaction. Portions of the damages theory were "novel" and "underdeveloped," the court said. The expert was unable to explain why he applied the overpayment damages to shares existing at the time of the transaction. Moreover, while the government claimed a loss in stock value, the account balances of the existing ESOP participants increased as a result of the transaction. And, even if the existing shareholders "hypothetically" incurred some damage, the expert's approach provided no basis at all for determining what those damages would be. The testimony was inadmissible, the court found.

**Genuine valuation disputes.** In ruling on the parties' summary judgment motions, the court found that, once the expert testimony was excluded, the government no longer had a way to demonstrate damages in support of its claim that there was a decrease in the value of existing stocks. Therefore, the court struck down the claim.

Concerning the overpayment claim, the court found there were too many factual disputes between the parties to grant either side summary judgment. For example, the parties' experts disagreed over whether the transaction price represented fair market value. Further, the parties disagreed over whether it was prudent for the trustee to rely on the independent valuator's appraisal. According to the court, based on the evidence to date, whether the trustee made "an honest, objective effort to read the valuation, understand it, and question the methods and assumptions that do not make sense" was a question reasonable fact-finders could disagree on.

The court's ruling means that the overpayment claim may go to trial. The government's damages expert may testify on the company's value based on his DCF analysis, but he may not use the market comparable approach. ♦

New cases are analyzed and added to *BVLaw* each month. This table provides a review of the newly added cases. To read the analysis of these cases, please visit [bvresources.com/bvlaw](http://bvresources.com/bvlaw) (subscription required).

Latest Cases Added to <i>BVLaw</i>				
Case Name/ Full Citation	Experts	Case Type	State/ Jurisdiction	Digest Summary
<i>Acosta v. Vinoskey</i> 2018 U.S. Dist. LEXIS 64094 (April 17, 2018)	Dana Messina (plaintiff/ DOL); Howard Kaplan (defendant/trustee)	ESOP Valuations	Federal/ Virginia	In ESOP dispute, court partially excludes DOL expert's damages analysis under <i>Daubert</i> ; court finds expert's market comparable approach to support overpayment claim is unreliable as is expert's methodology for calculating alleged loss in stock value to existing shareholders.
<i>Telfer v. Telfer</i> 2018 Tenn. App. LEXIS 120 (March 5, 2018)	Thomas M. Price, James E. Lamb (husband); Eric Boozer (wife)	Marital Dissolution/ Divorce	Tennessee	In context of determining appreciation in value, appeals court says trial court did not err when it applied DLOM in valuing partial interests in businesses representing wife's separate property; DLOM use is within trial court's discretion and depends on facts of the case.
<i>Tate v. Tate</i> 2018 Ohio App. LEXIS 1340 (March 29, 2018)	John Cook (wife); Cathy Roche (husband)	Marital Dissolution/ Divorce	Ohio	Appeals court upholds valuation of minority interest in farm entities based on fair value standard of value; court notes prevailing expert specifically referenced buy-sell agreements that did not contemplate use of discounts in valuing exiting member's partial interest.
<i>Cobane v. Cobane</i> 2018 Ky. App. LEXIS 107 (March 23, 2018)	Diana Hughes (husband/ appellant); none (wife/appellee)	Marital Dissolution/ Divorce	Kentucky	In valuing owner-spouse's minority interest in LLC, trial court "would have been well within its discretion to apply a minority discount," appeals court says, but it was not error for trial court to reject a discount based on certain questionable actions related to the owner's interest.
<i>Finjan, Inc. v. Blue Coat Sys. (Finjan II)</i> 2018 U.S. App. LEXIS 601 (Jan. 10, 2018)	Dr. Anne Layne-Farrar (plaintiff); Julie Davis (defendant)	Intellectual Property	Federal	Federal Circuit strikes down portion of damages, finding expert's royalty base was unsupported because she merely apportioned to the "smallest identifiable technical component," which itself was a multicomponent software engine that performed both noninfringing and infringing functions.
<i>In re Tesla Motors Stockholder Litig</i> 2018 Del. Ch. LEXIS 102 (March 28, 2018)	N/A (plaintiffs); N/A (defendant)	Dissenting Shareholder	Delaware	Court of Chancery says Tesla dissenting shareholders allege sufficient facts to show company CEO, Elon Musk, was a controlling shareholder, despite holding a minority interest; court allows breach of fiduciary claims concerning acquisition of related company to proceed.

## BVR TRAINING EVENTS

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### **Solvency Opinions: Legal Insights and Best Practices for Valuation**

June 5, 10:00 a.m.-11:40 a.m. PT/1:00 p.m.-2:40 p.m. ET  
*Featuring: Craig Jacobson (GlassRatner) and Stephen Selsbt*

### **What the IRS Looks for in a Business Valuation Report**

June 12, 10:00 a.m.-11:40 a.m. PT/1:00 p.m.-2:40 p.m. ET  
*Featuring: Michael Gregory (Michael Gregory Consulting)*

### **Healthcare Valuation: Approaches to Value and Common Pitfalls**

June 13, 10:00 a.m.-11:40 a.m. PT/1:00 p.m.-2:40 p.m. ET  
*Featuring: Nicholas Janiga (HealthCare Appraisers Inc.) and Fred Lara (HealthCare Appraisers Inc.)*

### **Financial Modeling: Enhance Excel by Programing in R Part 4 of Special Series on Advanced Modeling and Methodologies**

June 19, 10:00 a.m.-11:40 a.m. PT/1:00 p.m.-2:40 p.m. ET  
*Featuring: Clifford Ang (Compass Lexecon)*



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## CALENDAR

### **ASA 2018 European Valuation Conference**

June 15  
Prague, Czech Republic  
[www.appraisers.org](http://www.appraisers.org)

### **Eurogrowth 2018**

June 19-20  
Amsterdam, The Netherlands  
[www.acg.org](http://www.acg.org)

### **NACVA and the CTI's 2018 Annual Consultants' Conference**

June 19-22  
Las Vegas, NV  
[www.nacva.com](http://www.nacva.com)

### **The Alliance 2018 Summer Conference**

July 17-19  
Chicago, IL  
[www.amaaonline.com](http://www.amaaonline.com)

### **CFA Institute 63rd Annual Financial Analysts Seminar**

July 23-26  
Chicago, IL  
[www.cfainstitute.org](http://www.cfainstitute.org)

### **CM&AA Certification**

September 24-28  
Chicago, IL  
[www.amaaonline.com](http://www.amaaonline.com)

### **2018 Advanced BV Conference**

October 7-10  
Anaheim, CA  
[www.appraisers.org](http://www.appraisers.org)

### **2018 International Appraisers Conference**

October 7-10  
Anaheim, CA  
[www.appraisers.org](http://www.appraisers.org)

### **CM&AA Certification**

October 22-26  
Malibu, CA  
[www.amaaonline.com](http://www.amaaonline.com)

### **AICPA Forensic & Valuation Services Conference**

November 5-7  
Atlanta, GA  
[www.aicpa.org](http://www.aicpa.org)

### **CFA Institute Conference: Equity Research and Valuation 2018**

November 6-7  
New York, NY  
[www.cfainstitute.org](http://www.cfainstitute.org)

### **2018 ESOP Las Vegas Conference and Tradeshow**

November 8-9  
Las Vegas, NV  
[www.esopassociation.org](http://www.esopassociation.org)

For an all-inclusive list of valuation-related seminars and conferences, BV education classes and credentialing programs, and all BVR events, go to [bvresources.com/bvcalendar](http://bvresources.com/bvcalendar).



# BUSINESS VALUATION DATA SPOTLIGHT

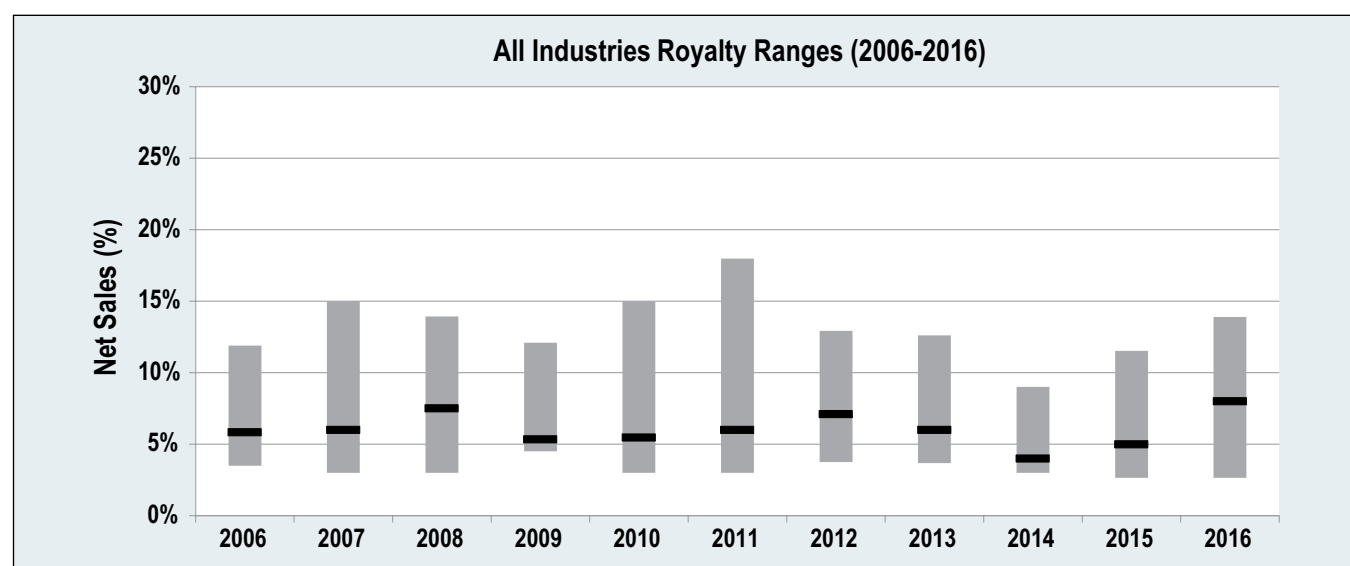
## ktMINE Royalty Rate Data

This graph displays the interquartile ranges for royalty rates as a percentage of net sales for all industries between 2006 and 2016 from the ktMINE: Royalty Rate Comparables & Full Text Licensing Agreements Database. As the graph shows, the median royalty rate was between 4.0% and 8.0% for the period analyzed, and the interquartile range was between 6.00 and 14.97 percentage points. While specific comparables would be needed in a valuation, this graph is a useful benchmark to display median royalty rates and their spread over a 11-year period.

More analysis, as well as industry-specific analysis, can be found in the *BVR/ktMINE Benchmarking Royalty*

*Rates Guide*, 2017-2018 global edition, available at [bvresources.com/publications](http://bvresources.com/publications). The guide provides analyses on median royalty rates and interquartile ranges, data on exclusive deals, key licensing highlights by industry, and more from the ktMINE: Royalty Rate Comparables & Full Text Licensing Agreements Database.

Individual license agreements and royalty rates can be found in the ktMINE: Royalty Rate Comparables & Full Text Licensing Agreements Database, available at [bvresources.com/ktMINE](http://bvresources.com/ktMINE). The database also includes access to an online statistical analysis center and the ability to export license agreement summaries and royalty rates. ♦



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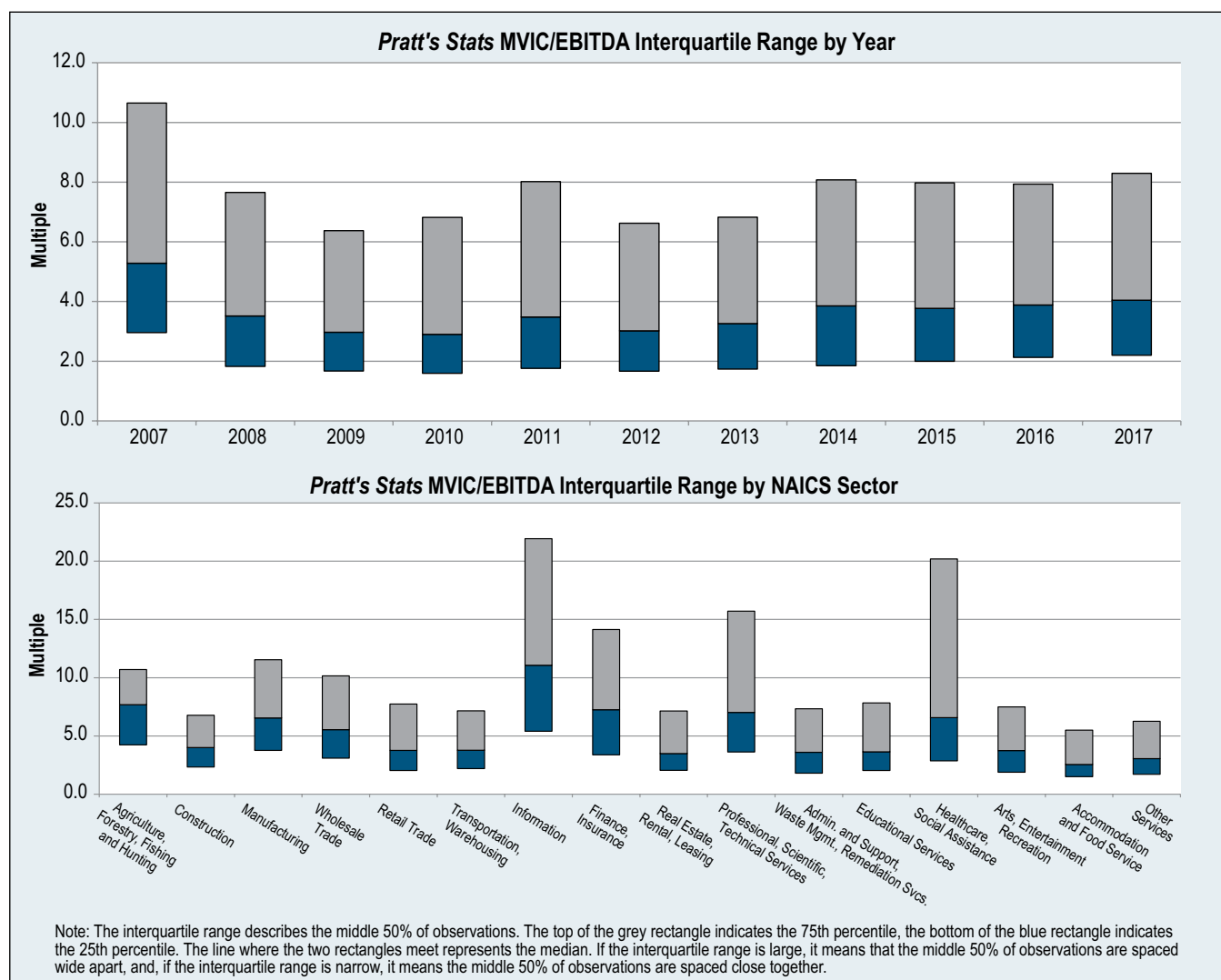
## Pratt's Stats MVIC/EBITDA Trends

The graphs display the interquartile range of the MVIC/EBITDA multiple by major NAICS sector and by year in the *Pratt's Stats* database.<sup>1</sup> For the period analyzed, the information sector had the greatest median MVIC/EBITDA multiple. It appears that the accommodation and food service sector had the least dispersion between its first quartile and third quartile (25th percentile and 75th percentile), while the healthcare and social assistance sector had the greatest dispersion. The accommodation and food service sector had the lowest median MVIC/EBITDA multiple. When reviewing the data by year, the median MVIC/EBITDA was the highest in 2007, at slightly more than 5.0. Since then, the median MVIC/EBITDA multiple has consistently been under 4.0 and often close to 3.0. It appears that 2007 had the most dispersion in the MVIC/EBITDA interquartile range,

while the dispersion has been relatively consistent in recent years.

*Pratt's Stats* is a private-company transaction database, which provides financial details on over 29,200 acquired private businesses. Business appraisers, financial advisors, investment bankers, M&A professionals, and business owners use *Pratt's Stats* as a comparable transaction data source for sold businesses across all industry sectors. A subscription to *Pratt's Stats* comes with free access to the *Pratt's Stats Private Deal Update*, a quarterly publication, which analyzes *Pratt's Stats* data trends. The *Pratt's Stats* database also features the *Pratt's Stats Analyzer*, an Excel-based tool, which assists in analyzing data. The *Pratt's Stats Private Deal Update* is available on the *Pratt's Stats* "Subscriber Services" page, and the *Pratt's Stats Analyzer* is available for download after searching the database. ♦

- 1 In *Pratt's Stats*, market value of invested capital (MVIC) is the term used for selling price. In addition to showing the median MVIC/EBITDA multiple by sector and year, the interquartile range provides a measure of dispersion.

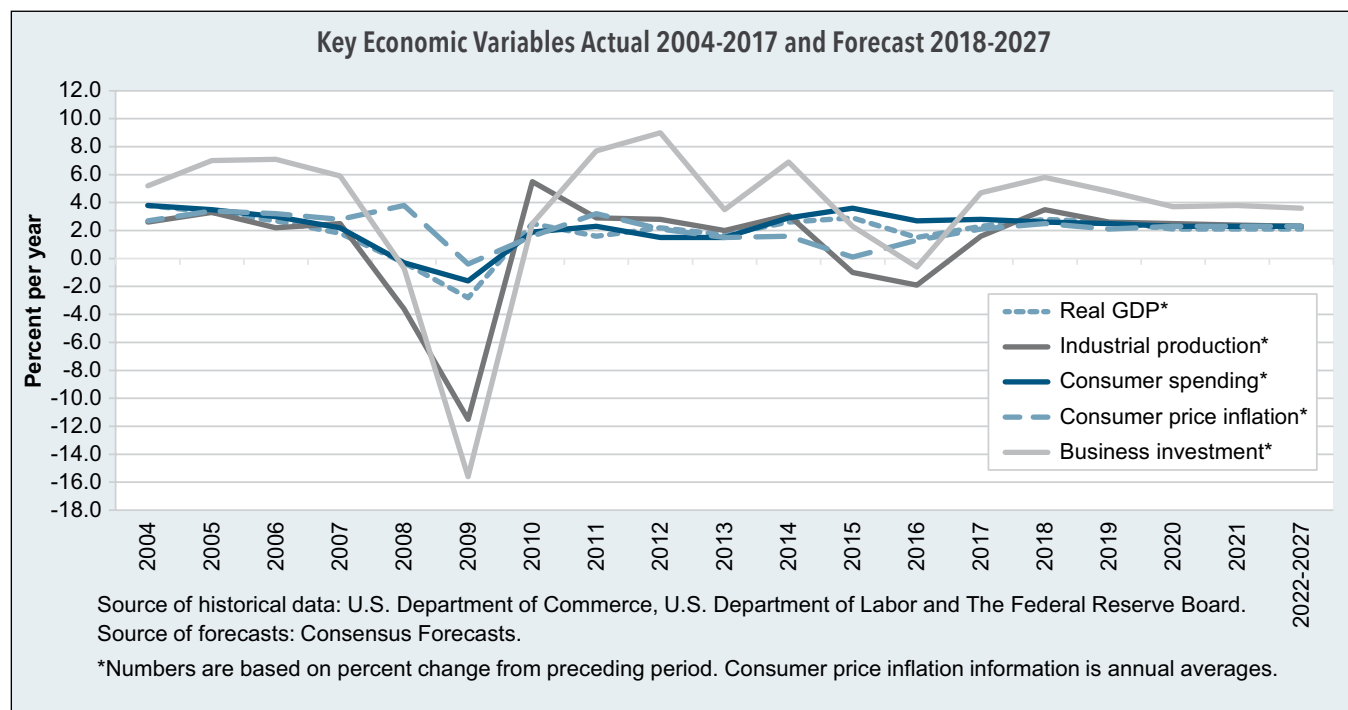


## Economic Outlook for the Month

(From BVR's *Economic Outlook Update*)<sup>1</sup>

This section is an excerpt from BVR's *Economic Outlook Update* (EOU). The EOU, a convenient and cost-effective resource, provides a review of the state of the U.S. economy and forecast for the future. Leading experts in the BV profession rely on the EOU as the basis for the current economic conditions and forecast portions of their valuation reports. ♦

- 1 The *Economic Outlook Update* is published monthly and quarterly by Business Valuation Resources, LLC (BVR). Visit [BVResources.com/EOU](http://BVResources.com/EOU) or call 503-479-8200, ext. 2.



Quarterly Forecasts 2Q 2018-4Q 2018 and Annual Forecast 2018-2019							
	Quarterly			Annual			
	2Q 2018	3Q 2018	4Q 2018	2018	(prior forecast)	2019	(prior forecast)
Real GDP*	3.2	3.1	2.9	2.8	2.8	2.6	2.6
Consumer spending*	3.0	2.7	2.5	2.6	2.7	2.5	2.4
Business investment*	5.9	5.8	5.4	5.8	5.5	4.8	4.8
Consumer price inflation*	1.7	2.1	2.0	2.5	2.4	2.1	2.1
Real disposable personal income*	2.7	3.0	3.1	2.6	2.7	2.8	2.9
Unemployment rate	4.0	3.8	3.7	3.9	3.9	3.6	3.6
Industrial production*	3.2	3.0	3.0	3.5	3.3	2.6	2.5

Source of forecasts: *Consensus Forecasts - USA*, April 2018.

Notes: Quarterly figures are percent change from prior quarter, at seasonally adjusted annual rates (except unemployment which is the average for that period).  
Annual rates are percent change from preceding period (except unemployment, which is the average for that period).

Every month, Consensus Economics surveys a panel of 30 prominent United States economic and financial forecasters for their predictions on a range of variables including future growth, inflation, current account and budget balances, and interest rates.



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PERIODICALS

## June 2018 Cost of Capital Center

### Duff & Phelps' 2018 Cost of Capital Data for BVU

Base U.S. Cost of Equity Capital  
( $R_f + \text{Median } RP_{m+s, \text{ all portfolio 25s}} + \text{ERP Adjustment}$ )<sup>1,2,3</sup>

Source: Duff & Phelps Cost of Capital Navigator,  
Risk Premium Report Study<sup>4</sup>

	Using the Historical Equity Risk Premium, Spot $R_f$ <sup>5</sup>	Using the Supply-Side Equity Risk Premium, Spot $R_f$ <sup>5</sup>	Using the Duff & Phelps Conditional ERP & Normalized $R_f$ <sup>6</sup>
Dec. 31, 2017	16.2%	15.2%	15.1%
One Year Ago	17.4%	16.4%	16.7%

### General Monthly Cost of Capital Data

<b>Treasury yields<sup>7</sup></b>	
30-day:	1.68%
5-year:	2.82%
20-year:	3.03%
<b>Prime lending rate:<sup>7</sup></b>	4.75%
<b>Dow Jones 20-bond yield:<sup>8</sup></b>	3.88%
<b>Barron's intermediate-grade bonds:<sup>8</sup></b>	4.80%
<b>Dow Jones Industrials P/E ratios:<sup>8</sup> (Represents median figures)</b>	
On current earnings:	24.0
On 2018 operating earnings est.:	16.1
On 2019 operating earnings est.:	14.9
<b>High yield estimate:<sup>8</sup></b>	
Mean:	12.0%
Median:	8.1%
<b>Long-term inflation estimate:<sup>9</sup></b>	2.34%
<b>Long-term rate of growth GDP:<sup>9</sup></b>	2.18%

### BVR's Private Company Cost of Capital Index<sup>10</sup> (May 1, 2018)

Company Revenue (\$thousands)	Cost of Capital
1,000	18.8%
5,000	17.0%
10,000	15.3%
15,000	14.4%

1  $R_f$  = Risk-free rate

2 Median  $RP_{m+s}$  = The median "risk premium over the risk-free rate" associated with Portfolio 25 for the eight measures of size used in the Risk Premium Report Study from the *Cost of Capital Navigator*. The size measures are: market value of equity, book value of equity, five-year average net income, market value of invested capital (MVIC), total assets, five-year average EBITDA, sales, and number of employees). For each measure of size, 25 portfolios are created (Portfolio 1 is the largest, Portfolio 25 is the smallest).

3 The equity risk premium (ERP) adjustment is needed to account for the difference between the forward-looking ERP as of the valuation date and the historical (1963-present) ERP that was used as a convention in the calculations performed to create the Risk Premium Report Study "risk premium over the risk-free rates," size premia, and other valuation data. For example, the Duff & Phelps Conditional ERP as of Dec. 31, 2017, is 5.0%, and the 1963-2017 historical ERP used in the calculation of the premia in the *Cost of Capital Navigator* Risk Premium Report Study was 5.28%, implying an ERP adjustment of -0.28% (5.0% - 5.28%).

4 In 2018, Duff & Phelps transitioned the *Valuation Handbook* series to an online platform, the *Cost of Capital Navigator*, which guides analysts through the process of estimating the cost of capital, a key component of any valuation analysis. For more, visit [bvresources.com/navigation](http://bvresources.com/navigation).

5 The Duff & Phelps *Cost of Capital Navigator* uses long-term risk-free rates from the Federal Reserve Economic Data website at [federalreserve.gov/datadownload/Build.aspx?rel=H15](http://federalreserve.gov/datadownload/Build.aspx?rel=H15). The series used is the 20-year constant maturity U.S. government bond (as of Dec. 31, 2017, in this example); series unique identifier: H15/H15/RIFLGFCY20\_N.B.

6 Risk-free rate (normalized). The Duff & Phelps conditional U.S. ERP as of Dec. 31, 2017 (5.0%) was developed in relation to a 3.5% "normalized" risk-free rate, implying a base U.S. cost of equity capital of 8.5% (5.0% + 3.5%) at that time. The Duff & Phelps conditional U.S. ERP "one year ago" as of Dec. 31, 2016 (5.5%) was developed in relation to a 3.5% "normalized" risk-free rate, implying a base U.S. cost of equity capital of 9.0% (5.5% + 3.5%) at that time. The Duff & Phelps recommended ERP should be used with the risk-free rate that it was developed in relation to. For more information, visit [DuffandPhelps.com/CostofCapital](http://DuffandPhelps.com/CostofCapital).

7 Source: The Federal Reserve Board as reported by the BVR *Risk-Free Rate Tool*, located in Free Resources at [bvresources.com/riskfreerates.asp](http://bvresources.com/riskfreerates.asp), May 1, 2018.

8 Barron's, April 30, 2018.

9 10-year forecast; Federal Reserve Bank of Philadelphia, Livingston Survey, December 15, 2017.

10 After-tax cost of capital (calibrated for 35% tax rate and mid-period convention) for average/typical risk company. For use on unlevered, after-tax expected free cash flows. Based on Pratt's Stats data and Dohmeyer, Burkert, Butler and Tatum's Implied Private Company Pricing Line (IPCPL). See the IPCPL page at [bvresources.com/ipcpl](http://bvresources.com/ipcpl).



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