



Business Valuation Update

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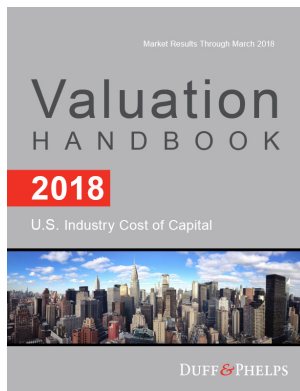
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BUSINESS VALUATION UPDATE

TIMELY NEWS, ANALYSIS, AND RESOURCES FOR DEFENSIBLE VALUATIONS

Earnouts and the Monte Carlo Method: Practice Tips for Implementation

By Erica L. Wilson and A. Vincent Biemans,
Berkeley Research Group LLC
(Emeryville, Calif., USA)

Earnouts are an often-vital tool in bringing M&A negotiations to a successful closing, but assigning a value to said earnouts can be challenging. In this article, we provide the valuation analyst with some practice tips to use when implementing a Monte Carlo method (MCM) analysis to value earnout rights or obligations. Before doing so, we first provide a brief overview of earnout provisions and the MCM.

Summary Overview

Earnout provisions. In general, the value—and purchase price—of a business is based on that

continued on page 4...

This Short Paragraph Can Bolster the DLOM Section in Your Next Report

Are you using the “benchmark average approach” for your analysis of a discount for lack of marketability (DLOM)? That is, you explain all of the restricted stock studies and list their averages, then do the same for the IPO studies. Next, you list the *Mandelbaum* factors and discuss them in relation to your subject company and then—presto—you have one sentence that states your conclusion of DLOM. That type of analysis may have passed muster years ago, but times have changed.

Plain vanilla. The AICPA FVS Conference has had a full track of sessions that analyzes a sample valuation report. We attended this track the last time it was held, and the report that was presented contained a DLOM section written exactly as described above. At the end of the section was

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the following statement—one you might see in a typical valuation report:

Applicable Discount

The previously identified studies indicate an average discount for the lack of marketability of approximately 30%-35%. Most of the factors discussed previously diminish the marketability of an investment in the common stock of M&M and, consequently, we have selected a discount for lack of marketability in this case of 35%.

That's it—the end of the DLOM section. Is this an in-depth analysis? The court in the *Peracchio*¹ case said this about such an approach: “[The valuation expert] simply lists the average discounts observed in several such studies, effectively asking us to accept on faith the premise that the approximate average of those results provides a reliable benchmark for the transferred interests.”

U.S. Tax Court Judge David Laro has weighed in on this topic. “I think we as judges want to see some empirical data; we want to see some analysis; we want to see the detail; we want to see how you arrive at this,” he said.² “The data has to be current; the analysis has to be in-depth; the information has to be empirical before, I think, we ought to buy into somebody’s opinion on lack of marketability. That may be asking a lot of the valuation industry, but I think it is what is required.”

What to do. As Judge Laro said, more analysis is needed on data that must be current. The analysis should tie the restricted stock study to the characteristics of the subject company. The

- 1 *Peracchio v. Commissioner*, T.C. Memo. 2003-80 (Sept. 25, 2003).
- 2 BVR’s 2011 Online Tax Summit: Part 3. Judges Roundtable: View From the Bench, Hosted by Georgetown University Law Center, Nov. 4, 2011 (sub.bvresources.com/trainingeventpast.asp?WebinarID=229).

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THIS SHORT PARAGRAPH CAN BOLSTER THE DLOM SECTION IN YOUR NEXT REPORT

most widely used restricted stock transaction database is the Stout Restricted Stock Study³ (formerly FMV Opinions), which is updated quarterly. The database includes the Stout Calculator, which embodies the restricted stock comparative analysis approach (RSCAA), which is driven by the financial characteristics of your subject company as well as the volatility of the market. When you use this tool, you can add this short paragraph to your report:

In addition to the qualitative factors we considered, we utilized the Stout Restricted Stock Study and its Calculator to determine an appropriate discount for lack of marketability. The Stout Calculator is designed to provide a discount based on a comparison of financial characteristics of the subject company to restricted stock issued by public companies that also takes market volatility into account. The Stout Calculator indicated that a discount for lack of marketability of approximately 25% is appropriate for the transferred interests in the subject company.

You can use this as a sanity check to your standard DLOM analysis or give it a more important role in your overall DLOM analysis. You can include the calculator's output reports in an appendix to your report.

Has the court favorably received this specific approach—the RSCAA? Yes. In the *Temple*⁴ case, the court rejected other approaches, including the benchmark average approach, and said this: "As for the lack-of-marketability discount, the Court finds reliability in the fact that [the valuation expert] endeavored to understand and incorporate the market dynamics of restricted stock sales.... The better method is to analyze the data from the restricted stock studies and relate it to the gifted interests."

³ bvresources.com/products/the-stout-restricted-stock-study.

⁴ *Temple v. U.S.*, No. 9:03-CV-165 (March 10, 2006).

Just updated. Stout recently spent a good deal of time reviewing its methodology and has made some enhancements to it, including a simplified adjustment methodology and more robust sample sizes for adjustments. Also, all transactions occurring at a premium are now excluded. All of these enhancements are embodied in the Stout Calculator and its free Companion Guide, which has also just been updated.

So take a fresh look at your DLOM section and see whether it's time to strengthen it with some in-depth empirical analysis—before your next adversary does it first. ♦

DLOM Toolkit



VPS Discount for Lack of Marketability Guide & Toolkit

The new *Discount for Lack of Marketability Guide and Toolkit*, written by Jim Hitchner, Jim Alerding, Josh Angell, and Kate Morris, saves you significant time and expense by simplifying a complex process. Highlights of the Guide and Toolkit include:

- Downloadable Excel files that incorporate the groundbreaking DLOM calculator
- An electronic (PDF) manual with easy-to-understand instructions for the calculator
- 800 pages of text in both print and PDF formats, covering DLOM approaches, methods, case studies, analyses of restricted stock transaction databases, and much more!

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Earnouts & Monte Carlo Method

... continued from front page

business's ability to generate future cash flows. Those future cash flows can be perceived as relatively stable or more uncertain, for better or worse, dependent on the business and its circumstances. Earnout arrangements allow the parties to an M&A transaction to keep part of the purchase price flexible by making it contingent on defined future events and/or future business performance, i.e., it allows them to share some of the target business's risks and rewards post-closing. Thus, an earnout provision can be a valuable tool in bridging a seller's (often optimistic) expectations and a buyer's (more risk focused) view.

To implement the earnout mechanism, M&A purchase agreements can provide for one or more earnout payments dependent on the company's post-closing performance relative to one or more contractual milestones and/or financial (or nonfinancial) performance metrics. Both the achievement metrics and the associated earnout payments can be customized to align with the facts and circumstances of the business and the needs of the parties. By means of example, an earnout provision for the purchase and sale of a medical device company may include:

1. A milestone earnout payment that is: (i) contingent upon receiving FDA approval for one of the company's medical devices in development within two years; and (ii) which payment linearly declines during the second year.
2. Three annual payments based on the company's sales performance post-closing. To safeguard against revenue growth at the expense of profitability, the annual earnout payments are capped at a calculated factor times a defined adjusted EBITDA metric (with a partial carryback and carryforward of excess profitability).
3. The total earnout payment is subject to a basket of 5% of the enterprise value using

the first-dollar-method—i.e., once the earnout payments exceed the basket, the full amount is paid—and a cap of 65% of the base purchase price.

Earnout metrics can be difficult to negotiate, contractually define, and sometimes even calculate after the fact. Not surprisingly, the valuation of earnout rights and obligations upfront and during the earnout period can be (very) challenging. As discussed above, the earnout mechanism often finds its genesis in diverging business expectations and the perception of risk. In addition, earnout mechanisms can introduce a variety of modeling complexities such as path dependence, nonlinear payouts, the potentially significant impact of small timing differences, and the possible existence of multiple subvariables underpinning the contractual performance metric(s) that can counteract or amplify each other.

The Monte Carlo method. Notwithstanding those complexities, the value of earnout rights or obligations may need to be determined for transaction purposes (e.g., to evaluate multiple offers or in relation to the subsequent sale of the buyer or seller itself) or other reasons (e.g., for financial reporting, compliance, or litigation).

One of the tools available to the valuation analyst to model earnouts is the Monte Carlo method. MCM-based analysis is used across various financial and other disciplines. It is also referenced in The Appraisal Foundation's first exposure draft on valuing contingent consideration.¹

MCM analysis relies on computer power (nowadays a decent laptop will generally do) to solve complex earnout models. The computer is set to run a large number of iterations of the financial model using the probability distributions the valuation analyst assigns to the (input) assumptions.

¹ Valuation of Contingent Consideration, developed by the Valuation in Financial Reporting Working Group 4 of The Appraisal Foundation, released Feb. 28, 2017 (comment period ended in April 2017).

EARNOUTS AND THE MONTE CARLO METHOD: PRACTICE TIPS FOR IMPLEMENTATION

If sufficient trials are run, the output distribution the random trials generate will closely approximate the model's solution curve.

The model outcome, as presented by the computer, will generally include the full range of possible outcomes as well as the frequency with which those outcomes occur and various summary statistical measures (e.g., average outcome, median outcome, and decile information). Other information such as sensitivity charts may also be available.

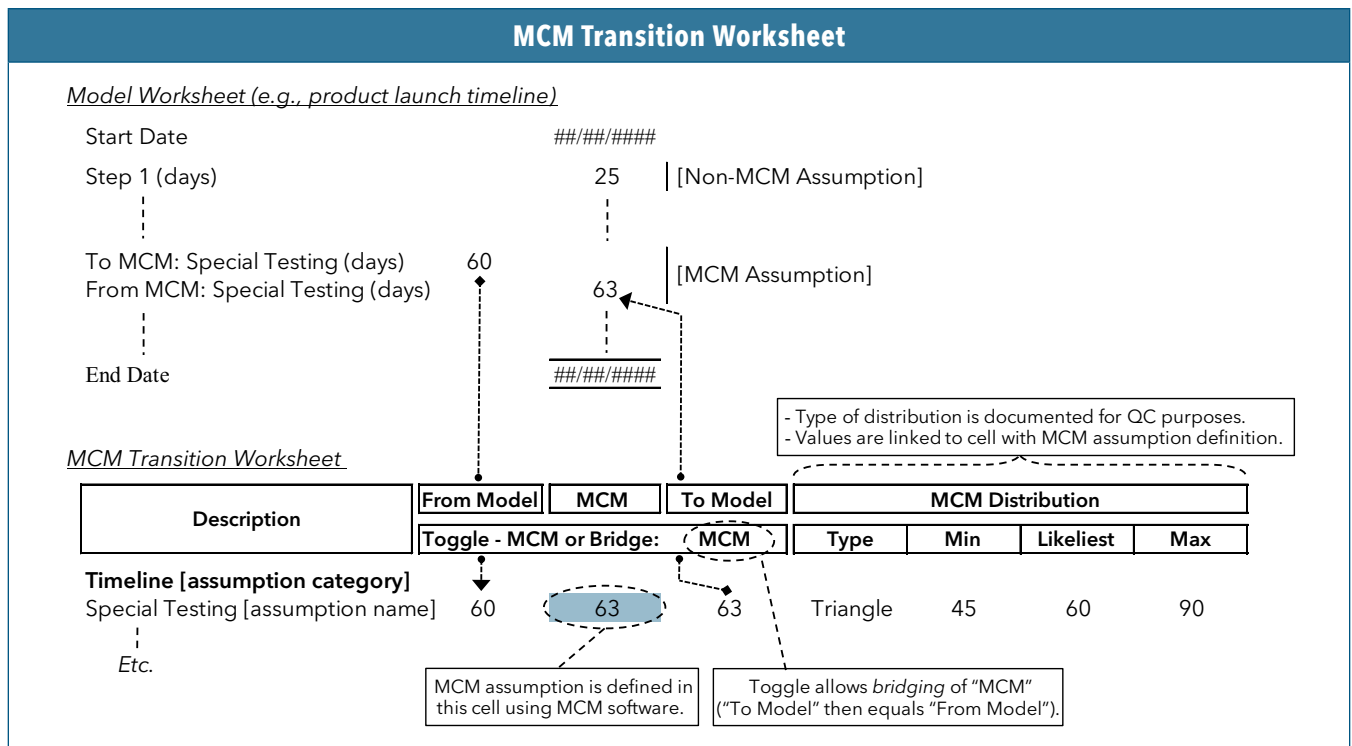
Notably, the outcome the MCM analysis generates may well be surprising. Especially in situations with multiple assumptions that can counteract or reinforce each other, the outcome curve can easily deviate from what the valuation analyst may have intuitively expected. For example, the outcome distribution may be narrower than expected or there may be a larger-than-anticipated gap between the base case and the most likely outcome.

Practice tips for building a MCM model. For the remainder of this article, we assume that the

valuation analyst has decided to implement a MCM analysis to value an earnout. We include practice tips to do just that. Notably, the purpose of this article is not to rehash the theoretical debates and comments that, for example, took place in response to the aforementioned exposure draft.

A variety of software packages are available that facilitate the implementation of a MCM analysis ranging from a variety of Excel plugins to statistical/analytical software such as SAS and Stata. For purposes of our discussion in this article, we will assume the reader uses Oracle's Crystal Ball product—which is relatively cheap, easy to use, and robust. Notwithstanding our assumption, the included practice tips have broad applicability.

The MCM transition worksheet. The increased complexity associated with introducing MCM variables into a model generally introduces more stringent demands on model robustness and quality control. Both can benefit significantly from a disciplined segregation of all MCM assumptions into a MCM transition worksheet (see the exhibit).



EARNOUTS AND THE MONTE CARLO METHOD: PRACTICE TIPS FOR IMPLEMENTATION

In addition to the issue of added statistics and complexity, the valuation analyst does not eyeball each of the individual trial runs in a MCM model. The bridging toggle in the MCM transition worksheet above allows, among other things, the valuation analyst to selectively sample (outlier) scenarios to identify modeling issues or errors. It is also generally helpful to have the toggle when building out the base model.

Working with dates and periods. The timing of events and business performance can greatly impact the payments due under some earnout provisions and, thus, the value of the earnout. In many situations, the impact of dates can be best modeled as a buildup of—more or less granular—subperiods. The valuation analyst can define one or more of the subperiods as MCM assumptions, while others are included at (fixed) lengths.

Example—Comparison:

- Situation—The earnout contains a milestone payment for regulatory approval of a product in development by a certain date;
- Simple date—The valuation analyst directly assigns a simple success/fail probability or effectively assigns one through the direct implementation of a date range with a probability distribution attached; and
- Period buildup—The valuation analyst estimates the approval date as the sum of a base date and identified subperiods (including, for example, prototype completion, testing, submission preparation, and a regulatory review period). That calculation results in a probability distribution of approval dates from which a success rate can be determined.

The period buildup approach can add significant informational value relative to the simple estimation of success/failure percentages as of a cut-off date. Among other things, the estimation of the

length of one or more of the subperiods may well be informed by on-point publicly available data or business-specific documentation. Moreover, if the associated financial performance is relevant to the timing of the associated cash flows (for

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example, subsequent cash flows from a product introduction may result in both a milestone payment and incremental EBITDA), those can also be more granularly modeled using a period buildup approach. The timing of cash flows can impact the value of the earnout directly (through the impact of discounting or the cut-off at the end of the earnout period) as well as through interaction with other elements (such as annual caps).

Additionally, there may be situations where the duration of the earnout period is flexible—for example, if financial sharing related to a specific project continues until a defined threshold is met or if the earnout payments are subject to partial holdbacks for which the release dates are variable.

In such situations, the financial analyst may want to: (i) include an extended projection period in the model (to catch all possible outlier scenarios); (ii) populate data through the entire model period for each scenario as an interim step; and (iii) implement a variable date cut-off and eliminate the excess data from the calculation in a subsequent model step. The benefit of this approach is that it will often result in a model that is less mechanically complex and more robust relative to an approach that directly implements a variable date cut-off. The downside is that individual scenarios may have some interim data included that can appear nonsensical and may potentially confuse others. Especially in litigation, the analysts would be well-served by clearly indicating this effect.

Financial and business performance. Modeling and analyzing future business performance often includes evaluating the coherence of the projection and the underlying assumptions. Generally, each of the model iterations the computer runs should be internally consistent and coherent. Model coherence can be a significant modeling pitfall when it comes to MCM models as the valuation analyst defines overall assumptions without reviewing each individual model iteration.

Example—Product Launch:

- Situation—The earnout payment relates to a product launch, for which the valuation analyst has determined the expected annual sales can range from 10 to 1,000 units; and
- Modeling pitfall—Simply modeling each year as a distribution between 10 and 1,000 would result in many scenarios that have no informational value. Generally, the sequence—1,000 (Year 1), 10 (Year 2), and 1,000 (Year 3)—will not be appropriate.

One solution is to focus on modeling the sequence. Instead of projecting individual years, the valuation analyst can select overarching variables. In the case of expected growth, the valuation analyst can, for example, define first-year sales, a growth rate, and a sales cap. One or more of those variables can be defined as MCM assumptions. Naturally, the valuation analyst can customize this approach to fit the situation at hand through, for example, the inclusion of a post-launch failure toggle. The valuation analyst can also choose another modeling mechanic to build in appropriate cohesion and path dependence.

When considering the implementation, the valuation analyst can benefit from carefully considering the selected variables as taken together. For example, exponential growth is often intuitively perceived as more aggressive. In the context of a product introduction that is modeled using a defined beginning and ending, however, assuming linear growth would result in both more front-loaded sales as well as additional total sales during the ramp-up period.

Whatever the selected implementation, the model needs to be robust. By means of illustration, if the valuation analyst includes the possibility of negative growth, he or she needs to make sure that the model does not inadvertently permit negative sales in subsequent years. The computer will simply do as instructed.

EARNOUTS AND THE MONTE CARLO METHOD: PRACTICE TIPS FOR IMPLEMENTATION

Next, the valuation analyst may want to model some of the performance assumptions on a discrete scenario basis. (*Note: If all assumptions are discrete scenario-based, there is generally no need for a MCM model.*) Again, model robustness should generally prevail: It may be preferable to have the computer calculate through all scenario assumptions for each model iteration and then select the value associated with the correct input scenario for that iteration from the model outcomes (i.e., only that value is included in the outcome distribution for that model iteration).

Furthermore, some earnout payments may be dependent on specific future decisions. For example, the seller may be contractually entitled to a defined midterm buyout of the earnout at its option. A major modeling pitfall is the inadvertent optimization of this decision by using data that are not available as of the decision moment. In other words, the valuation analyst cannot simply model both options for each iteration entirely and then select the option with the higher ultimate outcome for each iteration. Rather, assuming the valuation analyst incorporates the decision directly into the MCM model, the valuation analyst should model the decision as of the future decision moment, i.e., with the

information available in that iteration as of the decision date (which may include projected expectations based on that information).

Finally, valuation analysts are generally well versed in modeling cash flows for valuation purposes. Generally, the value of an earnout provision is also tied to the associated cash flows, i.e., the earnout payments. To determine those earnout payments, however, the contractually defined earnout metric is the one that matters. That metric may be, for example, based on GAAP or some contractually adjusted version of EBITDA. The valuation analyst should be careful to understand and correctly implement the agreed upon metric.

Variable selection, probability distributions, and correlations. The selection of the variables to be included in the model as MCM assumptions requires judgment by the valuation analyst and depends on the facts and circumstances of the earnout.

The analyst should generally resist the temptation to turn too many model assumptions into MCM assumptions. He or she should carefully evaluate what it is that he or she is modeling, then select and define assumptions accordingly.

May Tip From the Field

When Valuing a Manufacturer, Scrutinize Cost of Goods Sold

Be aware that with manufacturers there may likely be quite a bit of disparity of practice among industry participants as to what they define as cost of goods sold. Some may load up their cost of goods with costs that could arguably be classified as an operating expense. If that's the case, you will see that the firm has a gross margin that is way below the industry average. Is that a red flag for increased risk? Not if they simply classify some outlays as cost of goods sold that other firms classify as operating expenses. If that's what they did, their operating margin will be right at industry average.

Source: Valuing Manufacturing Companies: Value Drivers and Industry Risk, BVR webinar, March 14, 2018. Available at sub.bvresources.com/bvstore/cd3.asp?pid=CD596.

For example, when modeling gross profit risk, there can be sales quantity risk and/or the risk of margin compression through price competition or cost of goods sold escalation.

The financial analyst will also have to decide the appropriate level at which to include an MCM assumption. For example, one variable may underpin multiple other variables through definable relationships. Also, the model may benefit from splitting up certain assumptions, as we discussed previously in relation to the buildup of periods.

After selecting the MCM assumptions, the valuation analyst can choose from a variety of probability distributions to model them. Commonly used probability distributions include: (discrete and continuous) uniform distributions, triangular and BetaPERT distributions, and normal and log-normal distributions.

When a *uniform distribution* is applied, each value within the defined range is equally likely to occur for each run of the model. Such distributions can be used to express classic chance events such as the outcome of the roll of a dice. In the context of earnout models, there are many situations in which the value of a (financial or period) variable is equally likely to be one of many across a defined range. In addition, uniform distributions can be practically useful to, for example, implement scenario toggles or model percentage-based probabilities.

Triangular and *betaPERT* distributions are defined by minimum, maximum, and most-likely values. Such three-point estimates can be useful to model a variety of schedule-based and financial performance variables (for example, sales estimates). In many situations, the three values necessary to define the distribution are either known or can be estimated by the valuation analyst, while other statistical information is absent or too limited.

Compared to the triangular distribution, the betaPERT distribution has a smoother, curved shape (the betaPERT distribution has a mean that

is calculated in a manner that places more weight on the most likely outcome). *Note: That does not mean the probability of both the minimum and the maximum value occurring are always lower relative to a triangular distribution.* This is a misconception that appears to stem from visually comparing charts of (vertically) symmetrical distributions.

Normal and *lognormal* distributions can be useful to model variables such as certain natural phenomena, investment returns, or stock prices (or other variables for which the parameters are available and one of the distributions is a fit). The parameters of the normal distribution are the mean and standard deviation. The lognormal distribution is a probability distribution in which the logarithm of a variable is normally distributed.

In addition to the above distributions, there are a variety of other options. Dependent on the facts, circumstances, and available data, the valuation analyst may even want to define a custom distribution. To add further modeling options, the valuation analyst can also model the distribution that flows into the model by mathematically manipulating the outcomes from a selected distribution or by combining multiple defined distributions.

Finally, model coherence can often be largely achieved by carefully selecting variables and constructing a robust model. In certain situations, however, the valuation analyst will have to implement statistical correlations between MCM assumptions. Oracle's Crystal Ball allows for the implementation of such statistical correlations. The valuation analyst should approach the implementation of such correlations with due care as it can be complex. ♦

Erica Wilson and **Vincent Biemans** are both at Berkeley Research Group LLC, a global strategic advisory and expert consulting firm. Biemans is a managing director in the firm's Dallas office and is also the co-author of *M&A Disputes: A Professional Guide to Accounting Arbitrations* (Wiley 2017). Wilson is a senior associate also in the firm's Dallas office.

Letter to the Editor

Response to Article on Separating Active and Passive Appreciation in the Value of a Marital Asset

In the May 2016 issue of *BVU*,¹ you published an article on Dr. Ashok Abbott's approach to segregating passive from active increases in the value of a marital asset. That article is well thought out and clearly written—however, it suffers from three fatal flaws, which I will describe below.

I think it is well agreed that the ultimate sales results for any consumer good are occasioned by the conjunction of macroeconomic forces and management's response to those forces. Whether we use shoe sales or automobile sales, we know that, in the aggregate, macroeconomic factors are baked, or priced, into the sales results, as are the average efforts of management. We do not need to know which particular macroeconomic factors are at play nor do we need to know what specific knowledge, skills, and abilities management has used to thwart or take advantage of those factors. However, if we wish to disaggregate either set of factors to insert them into a regression model, we need to disaggregate both sets, not just one, as Dr. Abbott did with macroeconomic factors alone and then call the unexplained portion of variation a result of marital, and management, effort.

For example, if we know that zero-to-60-miles-per-hour acceleration times are a function of horsepower and car weight, we would not regress acceleration against one of those factors and then suggest that $1 - R^2$ is the effect of the other variable on the results. To correctly specify the model, one would need to put both independent variables into the model (and driver skill as well, if one could measure it). To do otherwise would be to misspecify the regression model as to content. By not specifying and including a set

of independent variables to represent management effort, Dr. Abbott has committed the sin of misspecifying his regression model.

Second, his model cannot be generalized to fit all situations uniformly. When his macroeconomic factors add to more than 100%, he must then go find another variable that is negatively correlated with sales and plug that into the formula. He cannot explain why certain industries get the result he wants with only one independent variable, while others need at least two or even, in some cases, three independent variables. This makes his model very industry-specific and very subjective as to the choice of independent variables, such that the results are not reliable. This will result in the exclusion of his testimony in a court of law under Rule of Evidence 702.

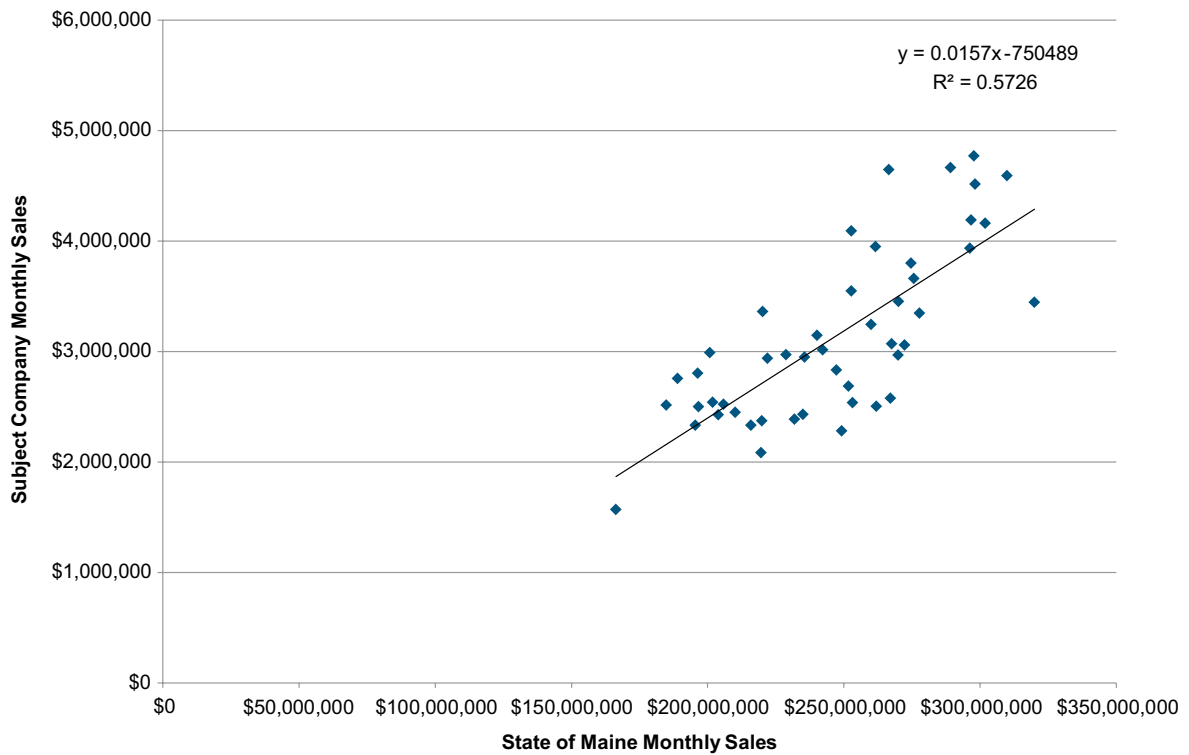
Third, his model measures macroeconomic effects on an industry as a whole, rather than on the subject company. Consequently, the percentage of increase in value attributable to marital effort is the same for all companies in that industry. That is, the sales results for 100 different auto dealerships are caused by the identical amount of management knowledge, skills, and abilities across the board—it is the same degree of marital effort for all of them. This result is absurd on its face. All people are different, all managers are people, ergo, all managers are different in their skill sets. By not taking into account both management effort at the subject company level along with the effect of macroeconomic factors on that subject company, he has not reliably applied his methodology to the facts of the case. This, too, will cause the exclusion of his testimony under Rule of Evidence 702.

Is there no solution to the passive-versus-active appreciation conundrum? At the risk of asking R^2

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

RESPONSE TO ARTICLE ON SEPARATING ACTIVE/PASSIVE APPRECIATION IN THE VALUE OF A MARITAL ASSET

Exhibit 1. Monthly Sales: Maine Auto Dealer vs. All Maine Auto Dealer



Auto Trans State of Maine	Subject Dealer Taxable Sales	Auto Trans State of Maine	Subject Dealer Taxable Sales	Auto Trans State of Maine	Subject Dealer Taxable Sales	Auto Trans State of Maine	Subject Dealer Taxable Sales
166,301,520	1,567,853	184,857,800	2,514,345	195,458,782	2,331,977	188,985,527	2,753,190
203,914,080	2,424,666	196,697,120	2,498,605	201,808,218	2,538,249	220,220,018	3,361,755
231,884,340	2,385,750	240,247,080	3,146,606	247,344,218	2,830,659	261,690,545	3,946,725
219,607,280	2,082,690	249,201,180	2,280,784	270,159,527	3,452,058	289,215,545	4,663,143
235,036,920	2,429,569	267,538,460	3,068,804	277,868,182	3,344,469	297,840,836	4,768,389
242,337,760	3,014,073	253,181,500	2,535,180	269,988,545	2,964,895	320,027,127	3,444,988
219,922,620	2,370,681	267,202,600	2,574,952	272,275,764	3,058,648	301,884,673	4,160,141
251,785,300	2,683,746	275,673,980	3,659,431	296,737,218	4,188,274	309,864,655	4,591,129
228,815,780	2,969,574	261,966,100	2,489,763	274,696,509	3,797,085	298,271,709	4,513,471
215,920,500	2,330,929	235,664,255	2,947,747	260,074,236	3,242,868	296,260,927	3,933,215
200,836,740	2,988,500	210,173,564	2,449,565	222,055,273	2,936,493	252,789,673	4,089,600
196,418,640	2,802,206	205,857,473	2,522,617	252,858,236	3,544,975	266,578,109	4,646,079

RESPONSE TO ARTICLE ON SEPARATING ACTIVE/PASSIVE APPRECIATION IN THE VALUE OF A MARITAL ASSET

to perform a role it was never intended for, let us try another approach. Going back to the idea of macroeconomic and management factors being baked, or priced, into the sales results of both the industry and the subject company, perhaps a different regression model that takes these facts into direct consideration will be helpful. In the instant case, the subject company is a Maine domestic auto dealer that, by any metric and against any comparative base, has turned in above-average sales, profit size, and growth over a four-year period. This is not a divorce matter, but the defense has made an issue of how much of the subject company's success is attributable to my client, the dealership manager, over the relevant period. If we make the simplifying assumptions that sales growth is the defining factor and that macroeconomic factors have a de minimis effect on costs and expenses and thus operating profits, then we can gather sufficient data to create a simple linear regression model.

Using 48 months of sales data for the subject company and the combined sales results for the other approximately 135 auto dealers in the state of Maine, I regressed the former against the latter (see Exhibit 1).

This resulted in a statistically significant slope at the less than 0.001 level, an x coefficient, or beta, of 0.0157, and a coefficient of variation of 16.5%. Since total Maine sales are in hundreds of millions and the subject company's sales are only in the millions, we convert the regression beta to 1.57 by multiplying by 100 so that we can now state that, for every dollar increase in statewide auto sales, our subject company's sales go up \$1.57. This has resulted over the four-year period in statewide sales increasing 18.50% arithmetically and 12.12% geometrically, while our subject company has increased 50.32% and 28.09%, respectively. These are differences of 172.00% and 131.90%, respectively, for the arithmetic and geometric averages for 48 months. Since the regression model has accounted for all the appropriate macroeconomic forces that impinge on auto sales, including auto loan interest rates,

gasoline prices, changes in per-capita income and consumer sentiment, as well as including the average effect of auto dealer management efforts, what is left to explain this extraordinary performance? If macroeconomic forces coupled with just average dealer performance at the subject company were the only things at play, then R^2 would be 1 and beta would also be 1. However, this is far from the case. So what is it?

The answer must be the above-average managerial knowledge, skills, and abilities of the general manager of our subject company. R^2 is 0.5726, which means that 57.26% of the variation in the subject company's sales is explained or accounted for by the variation in statewide auto sales, which includes macroeconomic factors and average auto dealer managerial input, which are baked into those monthly sales taken together. Therefore, I think we can say with little doubt that 42.74% of the net positive variation in the subject company's sales can be accounted for by its general manager's efforts. Notice that our methodology has been applied to the subject company, ergo to the facts of the case, and that the methodology is a "one-size-fits-all" model, and hence its reliability cannot be called into question.

Like market betas, our beta and other regression outputs give the best results when created using the most granular data available. In our case, this meant monthly data, as weekly or daily sales were not available at the statewide level. Annual data, which often are the only independent variable available, are not recommended for use with this methodology. Even though quarterly, semiannual, or annual data reduce noise relative to monthly data, by reducing variance, they also eat up a lot of information—in fact, the very information we need to segregate management's performance from the results of macroeconomic forces.

In conclusion, what we have here is a very simple way to account for passive versus active appreciation or, put another way, the effect of market forces versus marital effort on the growth in value of a family-owned business. If marital effort for a

RESPONSE TO ARTICLE ON SEPARATING ACTIVE/PASSIVE APPRECIATION IN THE VALUE OF A MARITAL ASSET

Exhibit 2 Facts and Assumptions Concerning the Case Maine Domestic Auto Dealer	
Value at Date of Marriage Dec. 31, 2011	\$3,500,000
Value at Date of Divorce Dec. 31, 2015	13,300,000
Appreciation During the Marriage	9,800,000
Annual Sales, 2011	27,177,350
Annual Sales, 2015	51,578,438
Increase in Sales	24,401,088
Profit Before Taxes, 2011	625,079
ROS (Return on Sales)	2.3%
Profit Before Taxes, 2015	2,372,608
ROS	4.6%
<u>Using R² as Dividing Metric</u>	
Proportion of Sales Increase Attributable to Marital Effort (Management)	42.74%
Proportion of Sales Increase Attributable to Market Forces (Macroeconomic Factors)	57.26%
<u>Using Jensen's Alpha as Dividing Metric</u>	
Proportion of Sales Increase Attributable to Marital Effort (Management)	61.94%
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%, 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.	
<u>Method 1</u>	
Sales, 2015	51,578,438
Marital Effort Factor	× 42.74%
Sales Attributable to Marital Effort	22,044,624
ROS for 2015	× 4.60%
Profits Attributable to Marital Effort	1,014,053
Increase in Value During the Marriage	9,800,000
Base Marital Effort Factor	× 42.74%
Increase Attributable to Marital Effort	4,188,520
Profits Divided by Increase in Value	24.21%
Combined % Attributable to Marital Effort	66.95%
<u>Method 2</u>	
Sales, 2015	51,578,438
Increase in ROS	× 2.30%
Profits Attributable to Marital Effort	1,186,304
Increase in Value During the Marriage	9,800,000
Base Marital Effort Factor	× 42.74%
Increase Attributable to Marital Effort	4,188,250
Profits Divided by Increase in Value	28.32%
Combined % Attributable to Marital Effort	71.06%

subject company is no greater than the industry average, then beta and R^2 will be one, indicating that market forces alone have accounted for the increase in value. In other words, only superior marital effort will cause any of the appreciation to be included in the marital estate. Just showing up every day at the place of business and doing no better than average does not constitute enough marital effort to cause a change in value.

At the same time, consistently outperforming the market will not cause 100% of the increase in value to be treated as the sole result of marital effort. For example, if we add 2% to the monthly change in statewide sales growth and grow the subject dealership's monthly sales by same, beta multiplied by 100 equals 3.35 and R^2 is 0.683. This indicates that even a very consistent top-performing manager relies on the springboard of full market activity to propel his or her sales into the above-average range. Assigning random monthly growth rates between 0.1% and 5.0% results in similar metrics, again demonstrating that superior performance for any particular dealership depends on the performance of the market as a whole. How much superior performance is explained by the R^2 of the model. Of course, this methodology works best in established industries with little intellectual property rights at work in the business.

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 (see Exhibit 2) 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.

Thank you for your consideration.

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Letter to the Editor

Comments on an Article on the Use of Statistics in the Transaction Method

Editor's note: This letter is in response to the article "Valuation Experts Clash Over Analysis of Transactional Data" and accompanying supplement that appeared in the April 2018 issue of BVU. The comments are from Gary Trugman (Trugman Valuation), the author of Understanding Business Valuation: A Practical Guide to Valuing Small- to Medium-Sized Businesses, 5th edition.

I have been reading the back and forth between Toby Tatum and Ronald Rudich and Howard Lewis about how many transactions should be used in the application of the transaction method of appraisal and can no longer stay a silent observer. Let me start by respectfully disagreeing with the position Rudich and Lewis take.

Anyone with a basic knowledge of statistics knows that five transactions is not a statistically valid sample, particularly when there are so little data known about the underlying transactions. After doing this work for 35 years, I can definitively state that using only five transactions is like playing with fire; you can only get burned. In a courtroom, there is an excellent chance that the expert will not survive a *Daubert* challenge based on there being an insufficient sample size.

With that being said, if all that an appraiser has to work with is five transactions, it may serve as a sanity check on another indication of value if the data points are close in terms of the dates and multiples. As to the 30 transactions that Tatum suggests, more is definitely better, but I think that the appraiser needs to run statistics on the data to see how widely dispersed the multiples are before feeling a false sense of security by having 30 transactions. I have found that five good transactions are better than 30 bad transactions, but

I would still have trouble hanging my hat on only five transactions that I really know very little about.

If the data came from public filings, such as Form 8-K, I may be able to perform a similar analysis as to a guideline public company method if there is enough information about the target company. With smaller transactions, that is rarely possible.

Bottom line: Using five transactions makes no sense in most of the databases, but blindly being content with 30 transactions may be almost as bad. The appraiser really needs to analyze the data. The transaction method for smaller businesses should be little more than a sanity check on other methods unless you have no choice. I have used the transaction method when valuing a restaurant that had no books and records other than sales data based on 2,600 transactions from the IBA database after slicing and dicing the information by size, geographic region, decade of the sale, and more. I ended up with multiples that had a very small standard deviation no matter how I sliced the data, and, since this was being used in a courtroom, I explained to the judge that this would not have been my first choice on how to proceed with a valuation, but the lack of records left me with no choice. She felt pretty good about my having 2,600 data points. If I only had five, I never could have convinced the court that I was probably in the correct vicinity of value. My suggestion to all is be careful and use your head.

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Phone: 844-Trugman ♦

New Tax Legislation Consequences on U.S. Transfer Pricing and Intangibles

By Guy Sanschagrín, CPA/ABV, MBA,
WTP Advisors (Minneapolis, Minn., USA)

The Tax Cuts and Jobs Act of 2017 (the Act) brought sweeping changes to the international tax landscape, including the transfer pricing arena. Intangible property is at the core of many of these changes. The impact of the new provisions generally furthers the trend of transfer pricing becoming more prescriptive, placing additional strain on and creating potential contradictions with the arm's-length standard, and may have the unintended consequence of creating double taxation for U.S. multinationals (MNCs)—situations in which U.S. MNCs may be taxed more than once on the same income. So while the Act lowered the headline tax rate to 21%, it also broadened the base that will be taxed, with the result that the Act's effect on each company's tax bill will be determined by the company's specific facts and circumstances.

Intangible property transfers. Importantly, the Act expands the definition of intangible property for outbound transfers of intangibles. This change is consistent with prior IRS efforts to prohibit U.S. multinationals from transferring intangibles tax-free. Previously, U.S. MNCs would take the position that the definition of "intangible property" under Section 936(h)(3)(B) did not include goodwill, going-concern value, workforce in place, or any other item the value or potential value of which is not attributable to tangible property or the services of an individual. The Act eliminates this position.

Here's what else the Act does:

1. It legislatively overturns several recent Tax Court cases holding that assets such as workforce in place and goodwill are beyond the scope of the statutory definition of

"intangible property" (see, for example, the *Veritas* and *Amazon* Tax Court cases); and

2. It removes the qualification that intangible property under Section 936(h)(3)(B) must have substantial value independent of the services of an individual.

As a result, certain transfers of such assets by a U.S. person to a foreign corporation will be subject to Treas. Reg. Section 367(d) and also Section 482.

The Act also explicitly requires Treasury to issue regulations that would, for purposes of applying the outbound transfer rules under Section 367(d) or the transfer pricing rules under Section 482, require the valuation of intangible property on an aggregate basis or, in a nod to the U.S. cost sharing regulations (Treas. Reg. Section 1.482-7), on the basis of realistically available alternatives to such transfers.

These features of the Act will likely result in a broadening of the tax base. But, at the same time, the Act reduced the tax rate, meaning that the final impact on a company's tax bill could go either way. The exhibit illustrates this.

	Old Law	New Law	Difference
Taxable value	100.00	125.00	25.00
Tax rate	35.0%	21.0%	-14.0%
Tax	35.00	26.25	-8.75

In the example above, an outbound intangible transfer might have a higher taxable value under the new law due to the inability to transfer some intangible property tax-free. However, depending on the overall taxable value, the tax cost to move the entire, more broadly defined bundle of intangible property might be significantly lower

than the cost to transfer the “old law” intangible property bundle.

Foreign derived intangible income (FDII). The Act’s FDII provision is intended to encourage U.S. MNCs to maintain their ownership of intangible property in the United States. The Act specifies a 13.125% corporate tax on U.S. taxable income related to “foreign income earned from intangibles.” FDII defines intangible income as income

in excess of 10% of U.S. depreciable asset tax bases.

This is the U.S.’s attempt at mimicking the incentives of a “patent-box” regime—an incentive many foreign countries (e.g., the U.K. and the Netherlands) use to reward companies for maintaining ownership of intangible property in their jurisdictions. FDII is only available to U.S. C corporations—non-C corporation

IRS Cracking Down on Valuing Intangibles for Transfer Pricing

Under the new tax law, intangibles are more broadly defined than under prior law (see accompanying article). Everything that is not tangible is considered intangible and taxable under the new law, including goodwill, according to Kash Mansori and Guy Sanschagrín, who are both with WTP Advisors. During a recent webinar on transfer pricing, they pointed out that this new definition has an important impact on the valuation of intangible property transferred across borders. With few exceptions, just about everything of value will be taxed.

IRS crackdown. The IRS and tax authorities of other countries are going after ill-prepared small and medium-sized firms over transfer pricing issues, they say. The IRS has two initiatives related to transfer pricing on its recent list of Large Business and International (LB&I) division campaigns: one on related party transactions and the other on in-bound distributors. Here is some advice Mansori and Sanschagrín gave during the webinar:

- Just because a company was audited in the past does not mean the IRS has OK’d its transfer pricing policies and results;
- A company needs to be clear regarding the entities that are the owners of the intangibles within the company and which entities use the intangibles;
- Be aware of the local country’s laws—they may restrict licensing and transfers of intangibles;
- Audits and resulting adjustments to taxable income typically involve multiple years—that often quickly add up;
- Transfer pricing has (at least) two sides, so, depending on the risks, it may be advisable to consult with local transfer pricing specialists based in the other countries to take into account different perspectives, rules, and enforcement approaches; and
- Develop and maintain transfer pricing documentation that’s updated annually—better to be prepared for an audit than to react to possible pricing adjustments and penalties.

(Source: *Transfer Pricing and the Valuation of Intangibles*, BVR webinar, March 15, 2018; available at sub.bvresources.com/bvstore/cd3.asp?pid=CD598.)

taxpayers specifically do not benefit from this regime.

The computations to determine FDII are fairly complex. These calculations meld together many new and legacy international tax concepts to arrive at FDII. For instance, the computations include application of Treas. Reg. Section 861-8 Allocation and Expense Apportionment, the new "GILTI" Provisions (see next section), and Subpart F.

The IRS and tax authorities of other countries are going after ill-prepared SMEs over transfer pricing issues.

Global intangible low-taxed income (GILTI). In conjunction with FDII, the Act's GILTI provisions are intended to discourage U.S. MNCs from owning intangible property offshore. GILTI is defined as current income of a controlled foreign corporation (CFC) in excess of a 10% return on the CFC's depreciable assets (as defined in Section 167) less certain adjustments. This income is taxed in the U.S. on a current basis. The tax results under GILTI have significantly different tax implications for C corporations versus pass-through entities. C corporations will be taxed at 10.5% and can claim foreign tax credit for 80% of the deemed paid foreign taxes of the CFC related to the GILTI income. If a CFC has GILTI income and an effective tax rate of at least 13.125%, the corporate taxpayer will not pay any tax on GILTI. Other taxpayers will pay as much as 37% tax on GILTI.

Territorial system. The new hybrid territorial regime abolishes deemed paid foreign tax credits on income on post-2017 dividend income received from 10% specified foreign corporations and instead allows for a "dividends received deduction" to domestic C corporations

only. This regime will have numerous implications on company transfer pricing systems. Companies should determine the extent to which their current transfer pricing system supports their tax planning and risk management objectives. There are also implications associated with the phase-in process where there are foreign tax credits (FTCs). For example, a new foreign branch FTC basket will allow for income of a foreign branch to enable FTC utilization as long as the FTCs are generated in a foreign branch. U.S. MNCs will need to perform transfer pricing studies to support the disregarded entity (e.g., under the check-the-box regime) income for both foreign and U.S. purposes to support the sourcing of the branch income for U.S. tax purposes.

Implications. We note the Act focuses FDII and GILTI computations on the tax basis of depreciable assets—moving away from fair market value. This focus on tangible property computations may cause U.S. MNCs to consider using asset-based profit level indicators (PLIs) as opposed to operating income PLLs to align with this trend, simplify administration, and potentially manage the risks of double taxation. The Act continues the trend for the emergence of more prescriptive rules in transfer pricing—these rules tend to create tension with the arm's-length principle. Finally, the Act is clearly intended to encourage U.S. MNCs to locate their valuable global intangible property in the U.S. These are among the reasons why it behooves U.S. MNCs to take a closer look at the implications of the Act and perform the analysis, planning, and restructuring required to manage their global effective tax rates and exposure to tax risks. ♦

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Case Study Reveals How to Use Neuroscience to Collaborate With the IRS

By Michael Gregory, Michael Gregory
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Many business valuers may view the IRS with apprehension or in a negative light. Others may view the IRS as a necessary evil and hope to not have to interact with the agency on their appraisals. Either way, there's a practical way to work with the IRS (or any other party) that may take exception to your work. It involves the use of neuroscience, a topic of which I deal with in my weekly blog¹ on conflict resolution and also in my new book, *Business Valuations and the IRS: Five Books in One*.² I will illustrate this with recent real-life cases where an eight-step process (see sidebar) was used in a negotiation with the IRS. The facts have been changed to maintain confidentiality.

Concept in action. A very competent appraiser from a nationally recognized firm that does high-quality work did an appraisal that was being challenged in an audit. He recommended that the attorney on the case give me a call regarding his appraisal. When I spoke with her, she was very assertive with me. She told me how she and a team of five other attorneys were engaged in a dispute with the IRS. She indicated she was the lead attorney on the case and that she was being paid over \$1,000 an hour.

She told me of a legal issue and a discount for lack of marketability (DLOM) issue that she had with an IRS estate and gift (E&G) tax attorney. The IRS had a 10% DLOM. The client had a qualified appraisal from a qualified appraiser that recommended a DLOM of 30% to 35%, but the taxpayer

had elected to use a 30% DLOM on the return. The attorney planned to prepare a 40-page brief on the legal issue, "blow away" the IRS E&G attorney by attacking her position on the DLOM issue, and then take the case to appeals. She wondered what I could do to help. I told her if she proceeded the way she intended, I was not needed. She asked me what I would do. I told

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CASE STUDY REVEALS HOW TO USE NEUROSCIENCE TO COLLABORATE WITH THE IRS

her I would recommend a completely different approach. I would suggest that she develop a good working relationship with the IRS E&G attorney and try to work collaboratively with her. She asked how I would do this.

I suggested that she learn all she could about the IRS E&G attorney through professional sources, social media, and other contacts as a starting point. We want to develop a good working relationship with her. Once you have that information, call her and ask her whether you can discuss the legal issue, but first ask her something like this: "If we are going to work together, we need to develop an element of trust with one another. Would you be willing to share some of your background with me?" With that, I counseled her on the types of questions to ask. She agreed that when she called the IRS attorney she would spend up to 15 minutes asking questions on items such as:

- Where she went for undergrad;
- Where she went to law school;
- Where she was from originally;
- Where does she live now;
- What did she like to do for fun;
- Was she married or single;
- Any children;
- Any pets;
- Was she a morning or afternoon person;
- Did she drink coffee and, if so, does she have a preference; and
- Similar types of questions.

Based on the answers to these and other questions, and by sharing her own information, an

initial professional relationship was established. Then and only then did my client bring up the legal issue. They were able to discuss that issue and resolve it in about 15 minutes.

**The old adage that
'prior planning prevents
poor performance' is
directly on point.**

With that, my client set up a meeting to discuss the DLOM issue at her office a couple of weeks later. This is how that meeting was organized and set up. It was very well planned, including what questions to ask and by whom. We also focused on the nature and the tone of the interactions. All were to be positive, professional, and with an emphasis on understanding and learning. There was to be no negative or contrary commentary during the next face-to-face meeting. The goal was to develop a very good relationship, really listen, and then and only then begin to educate the IRS on additional facts related to the case to move toward a collaborative negotiation.

As it turns out, our brains are hardwired to do several things. For example, we view all new things as a foe versus a friend,³ and we are oriented to really focus on food, water, shelter, sex, and safety.⁴ Knowing this, we need to develop a friendly atmosphere, and we need to address the other five items as well. Here is how we

3 ncbi.nlm.nih.gov/pubmed/18633856 and ncbi.nlm.nih.gov/pubmed/16806506 (retrieved Sept. 1, 2017).

4 books.google.com/books?id=8AVY93xD4cgC&pg=PA48&lpg=PA48&dq=neuroscience+food+sex+shelter&source=bl&ots=_QHelo8G-u&sig=E25IBTdTDDv7eWzO0wvDco0cE4&hl=en&sa=X&ved=0ahUKEwjr9bz04TWAhWM54MKHd_SCvoQ6AEINTAF#v=onepage&q=neuroscience%20food%20sex%20shelter&f=false (retrieved Sept. 1, 2017).

Eight Steps to Use When Conducting a Negotiation

1. Find a pleasant, quiet, neutral location conducive to conversation;
2. Provide relationship-enhancing snacks, antioxidants, dark chocolates, and beverages keyed to each party's preferences researched in advance;
3. Provide circular, trust-enhancing seating arrangements with only the key decision-makers present;
4. Research parties in advance; engage in small talk during breaks and show you care about each of the parties personally;
5. Listen carefully, take notes, show empathy, and use paraphrasing to demonstrate you understand and care about each party's perspective;
6. Show respect and deference; when it is your turn, humbly educate the other party; consider simple, attractive handouts; candidly share your details via bullet points indicating concerns and interests;
7. Work collaboratively with the other party to address all stakeholder interests to come to a win-win solution; and
8. Make and follow a physical budget with ample time available for nutrition, timeouts, emotions, and bathroom breaks.

Source: Michael Gregory, *Business Valuations and the IRS: Five Books in One*, 2018, Birch Grove Publishing (available at bvresources.com/products/business-valuations-and-the-irs-five-books-in-one).

addressed these with the eight items listed in the sidebar.

When conducting a negotiation:

1. *Find a pleasant, quiet, neutral location conducive to conversation.* The meeting was set up in a very nice conference room with a pleasant view with no distractions at the client's office.
2. *Provide relationship-enhancing snacks, antioxidants, dark chocolates, and beverages keyed to each party's preferences researched*

in advance. The IRS E&G attorney was a runner and ate healthy. The client had cut up fruit, blue berries, celery sticks, carrot sticks, dark chocolate, peanut butter, and Starbucks coffee. She learned on the initial call that the IRS E&G attorney liked Starbucks coffee, so this was provided. It turns out that having healthy snacks like this makes the brain more receptive to listening rather than bagels or donuts.⁵ Keep that in mind for your next negotiation or meeting.

⁵ draxe.com/15-brain-foods-to-boost-focus-and-memory/ (retrieved Sept. 1, 2017).

CASE STUDY REVEALS HOW TO USE NEUROSCIENCE TO COLLABORATE WITH THE IRS

3. *Provide circular, trust-enhancing seating arrangements with only the key decision-makers present.* Instead of six attorneys, my client only came with one additional attorney. He was a young, good-looking attorney whose primary role was to be friendly and professional to develop a positive relationship, take notes, and ask clarifying questions.
4. *Research parties in advance; engage in small talk during breaks and show you care about each of the parties personally.* From the initial research and the phone call, my client knew to have a morning meeting rather than an afternoon meeting. She made sure to offer the food and beverages at the beginning of the meeting and knew the IRS E&G attorney would likely only take the coffee, but my client and her associate made a point of taking some of the food and having some dark chocolate and peanut butter to allow the aroma to fill the air. They then took about 30 minutes to expand upon the small talk from what they had learned earlier.
5. *Listen carefully, take notes, show empathy, and use paraphrasing to demonstrate you understand and care about each party's perspective.* We wanted to make this a safe and collaborative environment and truly listen with open-ended and inquiring questions. After the small talk and developing a relationship, my client listened very carefully, asking good open-ended questions to really understand why the IRS E&G attorney thought the DLOM should be 10% and to understand her background and interests related to this position. This took about 30 minutes.
6. *Show respect and deference; when it is your turn, humbly educate the other party; consider simple, attractive handouts; candidly share your details via bullet points indicating concerns and interests.* Working with my client and having authored the book,

*Discount for Lack of Marketability and the IRS*⁶ that critiques the IRS Job Aid on DLOM,⁷ I wrote a 12-page document that included eight additional factors from the IRS Job Aid that were not initially included in the client's appraisal for consideration. As my client explained each, the IRS E&G attorney was asked whether, given the clarification of additional facts with the additional clarification of the factors, each might increase the DLOM. The IRS E&G attorney indicated "yes" in each instance. This is very important to have the other party state that they agree with what you are presenting. There was no coercion. Rather this interaction was as if helping a judge understand and making sure the judge understood before going to the next point. This was turned into a collaborative interaction.

7. *Work collaboratively with the other party to address all stakeholder interests to come to a win-win solution.* As a result, there was a collaborative effort between my client and the IRS E&G attorney to determine the proper DLOM. After about 30 minutes and after having addressed all eight points, my client indicated that she thought with this new information the DLOM should now be at 35% rather than 30%, but she wanted to get the reaction from the IRS E&G attorney to this proposal. The IRS E&G attorney asked if 34% might be acceptable. It was.

The case became a refund case to the client in this instance. That does not always happen, but I wanted to share this with you, which is what actually happened in this case. It saved the client millions of dollars. The point was to work collaboratively after having developed the relationship and listen—I mean really listen—to understand where the other party was coming from.

6 bvresources.com/products/discount-for-lack-of-marketability-and-the-irs.

7 irs.gov/pub/irs-utl/dlom.pdf.

Just to share with you, according to the *IRS Data Book for 2016*,⁸ Tables 9A and 12 indicate that, of 36,130 estate tax returns, 3,187 were audited, resulting in 19% with refunds, 21% with no change, and 60% owing additional tax, with the average refund of \$166,000 and the average additional tax of \$413,000. I offer this to you to let you know a refund case is possible if the facts so indicate and you are able to work positively using this type of process.

8. *Make and follow a physical budget with ample time available for nutrition, timeouts, emotions, and bathroom breaks.* Note that originally my client thought the meeting should take an hour. As a result, the meeting was actually scheduled for twice the duration that we thought was needed, so we set it for two hours. In meetings that have been scheduled for a full day, plans were made for breaks and lunch. Also planned were things to discuss during the breaks and lunch given the interests of the IRS party

that were designed to work on building the relationship throughout the day.

Not all clients “get this” and not all appraisers do, either. It does not work out this well every time. The point is to carry out the eight steps and to truly plan who will do and say what in detail to help promote the process. This does not take place by “winging it.” The old adage that “prior planning prevents poor performance” is directly on point. It takes a real effort and practice beforehand to determine what might be an appropriate plan and then adjust the plan as needed depending on the actual developments. Some clients have a hard time de-escalating themselves from the situation. De-escalation is covered in an entire chapter in my book, *Peaceful Resolutions*.⁹

I would also offer that not all IRS employees are receptive to trying to work out and discuss differences. The techniques offered here are based on neuroscience and work most of the time when applied properly. Make sure you know your rights

8 irs.gov/pub/irs-soi/16datbk.pdf.

9 mikegreg.com/peaceful-resolutions.

Ask the Experts

Q: For family limited partnerships, what should be the range for a reasonable combined discount for control and marketability?

A: Generally, somewhere in the 30%-to-50% range depending upon the makeup of assets. Partnerships that are all cash or a combination of cash and government bonds, municipal bonds, and possibly marketable securities are usually going to be somewhere in the 29%-to-32% range. At the other end of the range would be a partnership with real estate and less liquid assets. You might have assets that make little to no income (or even a loss) every year. For example, it could be a cattle ranch that has been in the family for years and there are no plans to ever sell it. For that, you could reasonably argue a discount way above 50%, but, in most cases, you’ll be somewhere in the 45%-to-50% range in a situation such as that.

Source: Using Pricing Multiples and Rates of Return to Value Family Limited Partnerships, BVR webinar, March 21, 2018. Available at sub.bvresources.com/bvstore/cd3.asp?pid=CD599.

WORK FILE CHECKLIST FOR OPERATING RIGHTS

as a taxpayer¹⁰ and don't be afraid to escalate in management if you are concerned that the IRS representative is not being professional with you.

If you have a receptive client (and you are receptive to this technique), you may want to keep this article handy and consider how you can help your client using neuroscience, your technical background, and your experience to collaborate with the IRS or the other party to come to an amenable solution that all parties can live with for closure. You don't need to be or want to be the smartest person in the room. You want to be the most reasonable and willing to work with the other party. This brings credibility to you professionally. Consider this approach one of the tools in your tool box. In this instance, the value added

¹⁰ [irs.gov/pub/irs-pdf/p1.pdf](https://www.irs.gov/pub/irs-pdf/p1.pdf).

in providing eight reasons why the DLOM should be higher with information from the IRS Job Aid was very helpful to help educate the IRS representative. That is where your technical expertise can come in. ♦

Michael Gregory, CVA, ASA, NSA, Qualified Mediator with the Minnesota Supreme Court, is the founder of Michael Gregory Consulting LLC, a firm that focuses on valuation, dispute resolution, and collaboration. Mike has a BS, MS, MBA, and a passion to help clients resolve conflict and negotiation winning solutions with the IRS, business to business and within businesses. Mike has conducted more than 2,500 mediations and negotiations, has written 11 books, and is an international speaker who makes over 50 presentations a year. He may be reached at mg@mikegreg.com and at 651-633-5311.

Work File Checklist for Operating Rights

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. For holders of the new CEIV credential, a work file will be reviewed within the first year they receive the credential and then periodically after that. For those without the CEIV credential, they will be expected to comply with the new requirements that are designed as overall best practices. In other words, anyone doing fair value for financial reporting should comply with these new rules.

The new requirements are contained in the Mandatory Performance Framework (MPF), which is designed to make sure that the valuation expert adequately documents his or her work and thought processes. The guidance does not explain "how to" perform a valuation but rather "how much" documentation is required.

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 operating rights for certain intangible assets. Intangible assets deemed to be operating rights typically include the following (the list is not exhaustive):

- Licenses granted by the government, such as wireless or broadcast spectrums, casino licenses, and certificates of need;
- Commercial franchises, such as fast-food restaurants, fitness centers, printers, and shipping services; and
- Government-granted monopolies or franchises, such as in the cable industry.

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). ♦

Work File Checklist: Minimum MPF Requirements for Operating Rights

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

- ☑ The process applied and conclusions reached on the sufficiency of management's identification and analysis of operating rights and related cash flows;
- ☑ The process applied and conclusions reached by the valuation professional to select the appropriate valuation methodology for the operating rights;
- ☑ When using the MPEEM to estimate the fair value of the operating rights, documentation is needed regarding the identification and valuation of the contributory assets as well as support for the required rates of return with regard to the contributory assets;
- ☑ When using the Greenfield method to estimate the fair value of the operating rights, the rationale and the support for the length of ramp-up period, and the startup costs necessary to bring the entity up to a market participant operating level; and
- ☑ The appropriate requirements in certain other sections of the MPF: "Prospective Financial Information" (Section A1.4), "Identified Assets and Liabilities" (Section A3.2), and "Contributory Asset Charges" (Section A3.7).

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).

S Corp Valuation



Taxes and Value:

The Ongoing Research and Analysis Relating to the S Corporation Valuation Puzzle

Taxes and Value: The Ongoing Research and Analysis Relating to the S Corporation Valuation Puzzle provides a substantive contribution to the controversial issue of how to value pass-through entities.

Authors Nancy Fannon and Keith Sellers present the findings of decades of academic research on the impact of taxes on firm value and demonstrate that historical market returns impound the effects of shareholder taxes.

Order your copy for \$179.00 (+S&H)
bvresources.com/publications

BVU News and Trends

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

Regulators, Standard Setters, VPOs

AICPA offers new certificates in forensics

Business valuation and forensics often go hand-in-hand, but some valuation experts are not qualified to get a certification, such as the AICPA's Certified in Financial Forensics (CFF) credential. Because of this, the AICPA has launched two intermediate-level certificate programs that explore core and specialized forensic techniques. The certificates provide "new options" to CPAs seeking the CFF credential, "as well as to other financial professionals who wish to show competency in financial forensics but are not eligible to get the CFF credential," said the AICPA.

CEIV quality control being finalized

The American Society of Appraisers (ASA) says that "important steps" have been taken to finalize the quality monitoring (QM) requirements for the Certified in Entity and Intangible Valuations (CEIV) credential. The ASA, AICPA, and the Royal Institution of Chartered Surveyors (RICS) offer the credential for professionals involved in fair value for financial reporting. All CEIV credential holders must submit to defined compliance monitoring requirements. "However, revisions are being made to those requirements in terms of timing and the potential integration of a firm's existing QM process into the CEIV QM requirements," says the ASA.

NACVA to launch certificate in healthcare

Health Capital Consultants (HCC) is developing a healthcare valuation training program for the National Association of Certified Valuation Analysts (NACVA) that will launch in 2018. The Certificate of Educational Achievement (CEA) for Advanced Education in Healthcare Valuation training program will consist of 10 four-hour course modules (eight core courses and two electives).

IRS cracks down on transfer pricing

The IRS and tax authorities of other countries are going after ill-prepared small and medium-sized firms over transfer pricing issues. Under the new tax law, intangibles are more broadly defined than under prior law. Everything that isn't tangible is considered intangible and taxable under the new law, including

goodwill, according to Kash Mansori and Guy Sanschagrin, who are both with WTP Advisors. During a recent webinar¹ on transfer pricing, they pointed out that this new definition has an important impact on the valuation of intangible property transferred across borders. With few exceptions, just about everything of value will be taxed. The IRS has two initiatives related to transfer pricing on its recent list of Large Business and International (LB&I) division campaigns: one on related party transactions and the other on in-bound distributors. Among the advice Mansori and Sanschagrin give during the webinar is that just because a company was audited in the past does not mean the IRS has OK'd its transfer pricing policies and results. Also, transfer pricing has (at least) two sides, so consult with local transfer pricing specialists.

Appellate court KOs DOL fiduciary rule

A three-judge panel of the 5th Circuit Court of Appeals has struck down the Department of Labor's fiduciary rule, agreeing with the plaintiffs that the DOL overstepped its statutory boundaries.² The original proposed rules had included appraisers in the definition of fiduciary, but that was changed, first to carve out ESOP appraisals and then to remove all appraisals from the final rule. But the appraiser-as-fiduciary issue was not completely put to rest—there was to be separate future rule-making on the issue of appraisals and fairness opinions in the context of investment advice subject to the fiduciary requirements. The DOL could request that all of the judges in the appeals court hear the case, rather than the three-judge panel. Also, the Supreme Court could eventually weigh in because there was at least one decision in another circuit court that conflicts with the most recent case.

ASA FV Conference to be webcast

BVR is pleased to partner with the American Society of Appraisers and the University of Southern California to present a live webcast of the 13th Annual Fair Value Conference³ at KPMG

- ¹ sub.bvresources.com/bvstore/cd3.asp?pid=CD598.
- ² wealthmanagement.com/sites/wealthmanagement.com/files/DOL-Decision.pdf.
- ³ bvresources.com/events/asa-usc-fair-value-conference-2018.

in Los Angeles on May 10. The conference agenda will feature presentations from nationally recognized speakers who are profession leaders, covering a range of fair value measurement and valuation topics, as well as other current and future expected trends regarding the FASB, SEC, and international accounting standards.

ASB meeting on USPAP online

The Appraisal Standards Board (ASB) of The Appraisal Foundation will conduct a public meeting on April 20 at 9:00 a.m. (Pacific Time) in Las Vegas where you'll have a chance to give input on the Discussion Draft⁴ of Potential Areas of Change for the 2020-21 edition of Uniform Standards of Professional Appraisal Practice (USPAP). You can also submit written comments to ASBcomments@appraisalfoundation.org by April 6. For the first time, the ASB will be live streaming the meeting, and you can register if you go to www.appraisalfoundation.org.

FV efforts seek to unify profession

Unlike accountants and lawyers, valuation professionals do not have common education requirements, a single identification in the marketplace, a single set of standards, nor a disciplinary mechanism, pointed out Mark Zyla (Acuitas) at the Southeast Chapter of Business Appraisers (SECBA) conference in Atlanta. In response to criticisms about fragmentation of the profession, the new Certified in Entity and Intangible Valuations (CEIV) credential for fair value for financial reporting has been developed to bring more consistency to the profession and reduce the number of questions auditors raise about the valuations. Plus, new guidance is being issued addressing fair value measurements. Zyla is the author of *Fair Value Measurements: Practical Guidance and Implementation*, 2nd edition⁵ (Wiley), among other publications and articles on fair value. He will conduct the AICPA Fair Value Measurements Workshop,⁶ a two-day event, on April 26-27 in New York City, which qualifies for a substantial part of the credit for the education requirements for the CEIV credential.

4 appraisalfoundation.sharefile.com/share/view/s0263242916d424b8.

5 bvresources.com/products/fair-value-measurements-practical-guidance-and-implementation-second-edition.

6 aicpastore.com.

Fund managers puzzled over QBI

A flash poll⁷ conducted by Baker Tilly Virchow Krause LLP (Baker Tilly) reveals that 36% of fund managers specify qualified business income (QBI) deductions as the greatest challenge faced from the passage of tax reform. New IRC Code Section 199a allows a 20% write-off of QBI for sole proprietors, owners of S corporations, and members of partnerships/LLCs. "When calculating QBI deductions, the mathematics behind it can be exceedingly complicated," Gregory Kastner, CPA, senior tax manager with Baker Tilly's financial services practice, said. "Since you need to calculate the deduction at each trade or business level, structures having several partnerships can find this calculation to be a tedious process."

Methods and Approaches

Royalties for university-bred technology

Many universities rely on the money they earn by licensing intellectual property they develop as part of their research activities. Analysis of data on eight universities show they received royalties at an average of between 3.5% and 4.6% and a median of about 3% of net sales, according to ktMINE.⁸ The license agreements negotiated by these universities (which include MIT, Stanford, Ohio State, and others) generally trend toward the healthcare industry. The three most active fields for licensing activity are pharmaceuticals, biotechnology, and healthcare products and supplies. All of the eight universities have licensing agreements for manufacturing and process intangibles, which makes sense because they typically patent their innovations.

Stout Restricted Stock Study updated

The most widely used restricted stock transaction database is the Stout Restricted Stock Study⁹ (formerly FMV Opinions), which is updated quarterly and contains 780-plus screened transactions with up to 60 data fields. It provides empirical support for a discount for lack of marketability (DLOM). The database includes the Stout Calculator that makes it easy to use Stout's methodology and determine a DLOM driven by the financial characteristics of your subject company, as well as the volatility of the market.

7 bakertilly.com/insights/tax-reform-for-hedge-funds-private-equity-and-alternative-assets-final-bill.

8 bvresources.com/products/ktmine-royalty-rate-database.

9 bvresources.com/products/the-stout-restricted-stock-study.

After spending a good deal of time reviewing the methodology, Stout has made some enhancements, including a simplified adjustment methodology and more robust sample sizes for adjustments. Also, all transactions occurring at a premium are now excluded. All of these enhancements are embodied in the Calculator, which comes with the database. A free Companion Guide has also been updated.

Cost of Capital

D&P answers (more) questions on the Navigator

Duff & Phelps did a fine job fielding another barrage of probing questions about its new *Cost of Capital Navigator* during a free webinar.¹⁰ The many questions that Jim Harrington, Aaron Russo, and Andrew Vey of D&P answered—and the ones they didn't have time for—will be answered in writing and will be added to the Q&As from the last webinar that will all be compiled into a single document. There were a number of questions about access to the data tables included in the hardcover versions of the *Valuation Handbook*, which the *Navigator* is replacing.

Research Papers, Studies

New paper on statutory appraisal rights

"The Anna Karenina principle is alive and well in the Delaware courts," according to a paper that explores statutory rights of appraisal and the search for the sometimes "elusive" concept of fair value. The Anna Karenina principle says that it is possible to fail in many ways, but you can succeed in only one way, which is to avoid each of the ways to fail. The authors, Arthur H. Rosenbloom (Consilium ADR) and Gilbert E. Matthews (Sutter Securities), present the results of their study of cases and come to a number of conclusions, one of which is that the Court of Chancery has shown a strong preference for the income approach (primarily DCF) over the market approach. There are more details and conclusions in the paper, "Delaware Appraisal Litigation—Non-Arm's-Length Transactions, Arm's-Length Transactions and the Anna Karenina Principle."¹¹

10 sub.bvresources.com/trainingeventpast.asp?WebinarID=632.

11 corpgov.law.harvard.edu/wp-content/uploads/2018/03/Rosenbloom-Matthews-Del.-Appraisal-Litigation.pdf.

Strong prices for SMEs

Owners of small and midsize enterprises (SMEs) are getting good prices for their companies even though they're not spending a lot of time preparing their firms for sale. That's the finding of the "Q4 2017 Market Pulse Report"¹² released by researchers at Pepperdine University's Graziadio School of Business and two industry groups, the International Business Brokers Association and the M&A Source. Owners who sold their companies for less than \$500,000 got 3% more than they originally asked for, according to the survey. Small and midsize businesses overall, with sales prices ranging up to \$50 million, fetched 99% of their asking price compared with 90% a year earlier. The survey questioned 264 business brokers and M&A advisers.

BV niche grows at big CPA firms

Business valuation remains one of the niche services where the most CPA firms reported growth during 2017, according to the "2018 Top 100 Firms"¹³ from *AccountingToday*. (free registration required) About two-thirds of the leading firms report increased growth in their business valuation services, and BV is No. 8 in the rankings of the fastest-growing niche services. The widest growth is reported in attest services and state and local tax, which hold the top two spots on the list, respectively. Rounding out the top 10 are industry specializations, technology consulting, international tax, M&A, estate/trust/gift tax planning, nonprofit organizations, and retirement plans.

What tax reform?

If any of your clients need valuation-related work because of the new tax law, don't wait for them to call you. Over a quarter (26%) of Americans don't even know there was a tax bill in the first place, according to a recent survey.¹⁴ What's more, of those who do know there is a new tax law, they don't know much about it. NerdWallet, a personal financial planning site, did the survey, polling 2,000 U.S. adults on legal and illegal tax-saving strategies, tax bracket knowledge, concerns about filing taxes incorrectly, and understanding the new tax bill.

12 bschool.pepperdine.edu/institutes-centers-research/centers/applied-research/research/pcmsurvey/.

13 accountingtoday.com/top-100-firms-and-regional-leaders.

14 nerdwallet.com/blog/taxes/2018-tax-report.

New Books, Guides, Publications

Control premium advisory revisited

A member of the working group involved in the creation of *Valuations in Financial Reporting Valuation Advisory 3: The Measurement and Application of Market Participant Acquisition Premiums*, issued by The Appraisal Foundation, has written an article that reiterates the findings of the advisory. The article, "Market Participant Acquisition Premiums in Valuations for Financial Reporting Purposes,"¹⁵ is by Carla Glass, who is managing director in the Valuation and Litigation Support Services group at Marcum LLP.

Miscellany

Damodaran's new app

The website of Professor Aswath Damodaran (New York University Stern School of Business) has been converted into an app¹⁶ for the iPad and the iPhone. You'll find a treasure trove of valuation data (updated annually), tools, and the classes he teaches. There's also a YouTube video where he talks about the new app, and he welcomes any and all feedback!

Explaining BV to clients

An article¹⁷ gives some tips on how to have preliminary discussions with business owners about the valuation process and how it works. Although written as guidance for CPA personal financial planners, the article is helpful for anyone explaining BV to someone unfamiliar with it. The authors, Sidney Kess, an attorney with Kostelanetz & Fink, and Edward Mendlowitz, a CPA/PFS and accredited valuation expert with WithumSmith+Brown PC, tell CPAs that, if clients need a valuation, an accredited valuation expert should be engaged.

Better bait boosts BV biz

"It's all about having the right bait in the water," says Danielle Berg, chief marketing and corporate communications officer of Aprio, an Atlanta-based CPA and advisory firm that has a BV practice. She says 82% of business-to-business buyers in a recent survey say a firm's content had a significant impact on

its buying decision. "What they're buying is what it's like to do business with Aprio—and is it better than Firm X or Firm Y—and I think through content, you can give them a glimpse of that," she says in an article.¹⁸ The firm produces an article every business day and asks partners for an outline, which gets handed off to a former reporter leading a cadre of writers and a consultant who oversees SEO optimization. "Content marketing really does work," Berg says. One tax partner generated \$750,000 in new business in 2017 through a monthly newsletter. (Note: You don't have to hire a team of writers to produce a lot of strong content. Take a look at BVR's Content License,¹⁹ which gives you unlimited use of content from BVR.)

No takers yet for debate challenge

A few months ago, healthcare valuation experts Mark Dietrich and Tim Smith offered to debate anyone who disagrees with their views on the fair market value of physician compensation. They refute conventional wisdom regarding the compensation hospitals pay to employ physicians and offer an alternative approach to determine fair market value. Two issues are key to this matter: the use of compensation survey data and physician relocation. These issues and their new approach are fully explained in their recently published book, the *BVR/AHLA Guide to Valuing Physician Compensation and Healthcare Service Arrangements*, 2nd edition. They also presented their views in a recent webinar,²⁰ a recap of which is in the March issue of *Business Valuation Update*.

Questions to spark new BV business

While U.S. business owners agree that it's important to have a transition strategy, between 40% and 60% of these same owners say they have no plan at all—even though many of them plan to transition within 10 years, according to an article.²¹ This is an opportunity for business appraisers, who should raise certain questions to prospects, such as: When are you planning to transition? How much is your business worth? How do you know what it is worth? Discussing the questions also gives you a chance to explain how you can help their planning.

15 marcumllp.com/insights-news/market-participant-acquisition-premiums-in-valuations.

16 damodaran.appsstation.com.

17 cpajournal.com/2017/12/12/helping-business-owners-understand-valuation-approaches/.

18 blog.insidepublicaccounting.com/2018/03/marketers-prepare-to-act-as-change-agents-for-their-firms-in-2018/.

19 bvresources.com/products/content-license-subscription.

20 sub.bvresources.com/bvstore/cd3.asp?pid=CD580.

21 cpapracticeadvisor.com/news/12399828/7-questions-to-gain-more-business-valuation-engagements.



Global BVU News and Trends



Business valuation news from a global perspective.

Regulators, Standard Setters, VPOs

First IVSC WAVO event June 25-26

The International Valuation Standards Council (IVSC) and the World Association of Valuation Organisations (WAVO) will be jointly hosting the inaugural IVSC-WAVO Global Valuation Conference¹ on June 25-26 in Singapore. This conference is part of the collaboration between both organizations to develop the valuation profession and enhance its professionalism through joint activities and exchanges.

iiBV adds to committees

Sandesh Hegde (SHCA), based in Mumbai, has been appointed to the marketing and education committees of the International Institute of Business Valuers (iiBV); he's formerly with BDO Consulting India and BizEquity. Also, the iiBV has appointed Angela Sadang (Marks Paneth) to the marketing committee; she's based in New York and is formerly with PwC, BDO USA LLP, and other consulting firms.

IACVS Beijing conference May 28-30

Registration is now open for the 2018 International Business Valuation Conference in Beijing, People's Republic of China, May 28-30. The International Valuation Standards Council (IVSC), China Appraisal Society (CAS), and Beijing Appraisal Society (BAS) support the event. Sessions include: Valuation for the New Era of "Belt & Road," The Continual Globalization of Business Valuation, Developing of a Legacy Profession, and Innovation and Challenges in Global and Cross-Border Valuations. For more information, go to www.iacvs.org.

Research Papers, Studies

New study examines country risk models

Practitioners should carefully choose their country risk model because current models produce a wide range of cost of equity estimates, according to a paper. A case study of reference

1 wavoglobal.org/Download/Call-for-Papers-IVSC-WAVO-Conference.pdf.

firms in emerging markets reveals considerable spreads in the models' estimates of up to 25.6 percentage points for individual firms and 15.4 percentage points on average. Individuals from the Karlsruhe Institute of Technology (KIT), DZ Bank AG, Handelshochschule Leipzig (HHL), and Deutsche Bank AG wrote the paper, "Country Risk—Cost of Equity Measurement: Methodologies and Implications."²

Premier League naming rights

The potential market rates for U.K. stadium naming rights grew to £135.6m in 2017, an increase of over 80% on the 2013 market rates of £74.6m, according to a study³ by Duff & Phelps. However, the market here is underdeveloped, it says. In the U.K., Manchester United's Old Trafford could command over £26m a season to offer seasonal naming rights to its 75,643-seater stadium, more than any of its rivals. Interestingly, the study found that, in North America, where naming-rights deals are very common, new sponsors can be reluctant to take on a ground that's previously had someone else's name on it, which explains why a new stadium is worth a premium.

Country Views

Romanian VPO has silver anniversary

To celebrate 25 years of valuation in Romania, The National Association of Romanian Valuers (ANEVAR) has published a journal⁴ in English. ANEVAR is an independent (not-for-profit, nongovernmental) organization for the real estate, business valuation, personal property, and financial assets disciplines in Romania. ANEVAR supports 6,900 professional members and over 250 associated legal entities, carrying out valuation-related activities in 40 territories and counties and 11 centers in Bucharest.

2 papers.ssrn.com/sol3/papers.cfm?abstract_id=3112934.

3 www.duffandphelps.com/about-us/news/market-rates-of-premier-league-stadium-naming-rights-increase.

4 nou.anevar.ro/sites/default/files/revista-asociatiei/magazine-value-wherever-it-is-nr-04_0.pdf.

BVLAW CASE UPDATE

Featured Case

Chancery Relies on DCF Where Deal Process Is Not 'Dell Compliant'

In re AOL Inc.,
2018 Del. Ch. LEXIS 63 (Feb. 23, 2018)

The Delaware Court of Chancery has not given up on the discounted cash flow analysis yet. Although high court rulings in *DFC Global* and *Dell* have urged the trial court to give great or even exclusive weight to market evidence when determining fair value in a statutory appraisal proceeding, recently the Court of Chancery chose to give full weight to the DCF value. A problematic sales process made the transaction not “Dell compliant,” Vice Chancellor Glasscock decided. What’s more, he found it impossible to ascribe any weight to the transaction price but decided to use it as a reality check.

Committed to Verizon. In 2014, AOL, the global media technology company, bought a number of “content” and “adtech” companies to meet the stiff competition. Also, AOL organized itself into three divisions: membership, brands, and platforms. “Membership” included the old dial-up internet and search services. “Brands” included various content providers. “Platforms” provided online advertising services across multiple devices and media formats.

By mid-2014, AOL’s chief executive officer was in discussions with his counterpart at Verizon Communications about industry trends. By December 2014, company representatives held meetings about different forms of collaborations. AOL also had preliminary discussions with Comcast about a “potential transaction involving all or part of AOL’s businesses.” In January 2015, rumors about a possible transaction involving AOL swirled around and caused the company’s stock price to

rise. In February 2015, AOL’s CEO became aware that AT&T might be interested in a conversation. However, the CEO declined to call AT&T’s CEO, saying that doing so would be “like a bridge too far.” What he meant was that the risk of Verizon walking away from the deal with AOL was greater than any advantage gained from getting involved with AT&T. Around the same time, Fox also expressed interest in AOL’s brands and platforms segments.

AOL’s board members met regularly to discuss “the deal landscape, including the potential transaction with Verizon.” AOL decided not to pursue an auction. An AOL representative later explained that AOL, because of the nature of its business—technology and content provider—was “fragile.” He said that technology and media companies did not have hard assets but were based on relationships “that I think are almost impossible to be managed if a media company or a technology company is for sale.” In early May 2015, AOL indicated to Verizon that it expected a price per share “in the 50s.” Verizon said the price would be “in the high 40s.” Verizon also said it was going to make an employment offer to AOL’s CEO. AOL’s financial results beat market expectations. Shortly afterwards, Verizon agreed to a \$50-per-share price (cash). Verizon let it be known that, if AOL rejected this offer, Verizon would withdraw it. On May 11, 2015, AOL’s board unanimously approved the merger agreement. A day later, on May 12, 2015, the parties announced the deal. In a contemporaneous TV interview, AOL’s CEO was asked why AOL did not pursue an auction. The CEO explained he was “committed to doing the deal with Verizon.” He also said that there had been lots of rumors; after all, AOL was a public company. “If somebody wanted to come do a deal with us, they would have done it.”

The parties’ agreement included a no-shop provision, as well as a three-day matching rights

provision. There was no topping bid. The deal closed on June 23, 2015.

Dissenting shareholders asked the Delaware Court of Chancery for a fair value determination under the state's statutory appraisal rights statute, 8 Del. C. § 262.

'Insufficient' sales process. In a nutshell, an appraisal proceeding requires the court to value the company as a stand-alone "going concern" or as an "ongoing enterprise occupying a particular market position in the light of future prospects." The court must not impose a minority discount and must deduct synergistic value or other value that the parties expect to result from the transaction. In *DFC Global* and *Dell*, the Delaware Supreme Court found that the appraisal statute precluded the adoption of a presumption in favor of the deal price where certain preconditions were met. Rather, the trial court must consider "all the relevant factors" surrounding a transaction, the high court noted. But it also found that, if certain conditions are met, the deal price likely is the best evidence of fair value.

In the instant case, according to the Court of Chancery, the first requirement was to determine whether the sales process was "Dell compliant." According to the court, "Dell compliant" meant:

(i) information was sufficiently disseminated to potential bidders, so that (ii) an informed sale could take place, (iii) without undue impediments imposed by the deal structure itself. In other words, before I may consider the deal price as persuasive evidence of statutory fair value, I must find that the deal process developed fair market value.

Here the sales process accompanying this transaction "was insufficient to this task," the court said. AOL rejected an auction and decided to deal with bidders other than Verizon individually. The court said it understood AOL's reasoning, but when "front-end" information sharing is limited, there has to be a "robust" post-agreement period. Concerning the front end, here rumors seemed to ensure that the market knew that AOL was in

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play; the company received plenty of coverage and various potential buyers expressed interest in doing some kind of deal. Further, the company responded to third parties that indicated a serious interest. The problem, the court found, was the post-agreement period, particularly statements from AOL's CEO about his commitment to doing a deal with Verizon. These statements could prevent other bidders from pursuing a deal, particularly when viewed in tandem with some of the deal protections. The Court of Chancery decided the unique circumstances made it impossible to find the deal price was the best evidence of fair value.

The Court of Chancery went further, emphasizing that it was "unable, in a principled way, to assign [the deal price] any weight" as a portion of the fair value determination. However, the court used the deal price as a "check."

DCF to the rescue. The court agreed with both parties' experts that in this case the DCF analysis was the most reliable method to achieve fair value. Both experts were highly qualified, but, for reasons the court declined to go into, the petitioners abandoned their expert's value determination (\$68.98 per share) and agreed to the court's using the DCF model the company's expert had presented as a starting point. The company's expert arrived at a value of \$44.85 per share.

The court discussed four inputs in the company expert's valuation that had triggered objections from the petitioners.

Cash flow projections. The company's expert used management projections, noting they represented the best estimates of management's expectation of the company's future operating and financial performance. AOL's financial advisor had used them in its fairness opinion.

The court denied the petitioners' request to use different sets of projections, noting that one alternative set was created for tax purposes

(goodwill impairment valuation). Another set of projections seemed to be "aspirational"; there was evidence that these projections were based on the assumption that AOL would be part of Verizon. The court found this set of projections likely served as a "marketing tool" when AOL tried to sell itself to Verizon. "My purpose here is to determine the fair value of AOL and not AOL's value as-advertised," the court said. It, too, used management projections.

Pending transactions. The court explained that a fair value determination must capture the "operative reality" of the company at the time of the merger. Therefore, the valuation must account for "facts which were known or which could be ascertained as of the date of the merger and which throw any light on future prospects of the merged corporation." Here the court considered the value of three potential deals in which AOL was involved at the time of the merger. The company's expert had not given any value to any of these potential deals.

Two of the deals involved Microsoft. One was AOL's plan to replace an expiring contract with Google with a deal for Microsoft's Bing search engine to power advertising and results. This search deal closed shortly after the merger. The court found it was part of AOL's operative reality and that there was evidence to show that there was value, "at least minimally," to be added to the long-term projections. At the same time, the court found there was not sufficient evidence of how to account for the deal. Rather than speculating, the court decided to assign zero value to this deal.

The other potential deal with Microsoft would enable AOL to run the sale of display, mobile, and video ads on Microsoft properties. AOL initially planned to close the deal at the end of May 2015, before the Verizon deal. However, it pushed the deal back until after the Verizon announcement. The petitioners claimed the deal added \$2.57 per share to the company expert's DCF-derived value.

In deciding on whether management's projections accounted (sufficiently) for this deal, the court found AOL and Verizon had discussed this deal and its relation to the projections after the merger. The discussion focused on whether the Microsoft deals should be added to the projections' revenue and margin or should be seen as filling strategic gaps that the projections had assumed. The court said that the evidence showed that AOL viewed the deal as "at least partially additive" to the projections. Given the court's choice between adding the full \$2.57-per-share value proposed by the petitioners and not adding any value for the deal, as proposed by the company, the court chose to add \$2.57 per share to its DCF analysis.

The court found the third deal was not part of the company's operative reality. The deal was in the incipient stages. The parties had not exchanged drafts of a merger agreement, the due diligence process was just beginning, and negotiations had not gotten far.

Projection period. Considering AOL had various business segments with varying prospects, the issue was how to view the terminal period. The company's expert determined the perpetuity growth rate was 3.25%. He noted that the company's membership division was on the decline (the court called this division "senescent"), whereas the company's brands and platform divisions were small but rapidly growing. As the expert saw it, because "AOL Projections do not provide estimates beyond 2018 ... there is some possibility that AOL could experience growth in the short term at a rate higher than inflation due to higher growth in the Platforms and Brands segments or even potential acquisitions."

The petitioners claimed the company expert's DCF insufficiently accounted for the high growth rate prior to reaching steady state. They argued that academic literature, particularly the writings of Professor Aswath Damodaran, "counsels that if the growth in the final forecast year is well above the terminal growth rate, then a three-stage

model is preferred." The "hypergrowth" of two business segments at the end of the two-stage period used by the company's expert made it clear that the latter's model was inadequate.

The court disagreed. It noted that company management believed it could not reliably predict beyond four years. Therefore, using a three-stage DCF or a 10-year projection period "seems particularly brazen," the court said. However, it also found the company expert's 3.25% perpetuity growth rate did not "accurately capture the trajectories of the two divisions of AOL that were in hypergrowth at the end of the Management Projections." The court used a 3.5% perpetuity growth rate.

Cash balance. AOL had \$554 million cash on hand on the date of the merger. The company's expert decided not to add the entire amount to the DCF result but to reserve \$150 million as working capital, calling this amount a "minimum balance." The petitioners claimed the expert's decision was "litigation driven" because, in the past, AOL had dropped below \$150 million in cash. The court found that it was reasonable to withhold \$150 million as working capital.

Conclusion. Based on the various adjustments to the company expert's DCF valuation, the court determined the fair value on the date of the merger was \$48.70 per share—thus, less than the \$50-per-share deal price.

The court also said it was aware of an incongruity in its findings. On the one hand, the court had found the deal price was not reliable evidence of fair value because of the flawed sales process. On the other hand, the court's DCF analysis resulted in a price that was even lower than the deal price. The court explained the discrepancy by pointing to synergies that might have been included in the deal price and that had to be excluded in the fair value determination.

The fair value of the AOL stock was \$48.70 per share, the Court of Chancery concluded. ♦

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 (subscription required).

Latest Cases Added to <i>BVLaw</i>				
Case Name/ Full Citation	Experts	Case Type	State/ Jurisdiction	Digest Summary
<i>In re AOL Inc.</i> 2018 Del. Ch. LEXIS 63 (Feb. 23, 2018)	Dr. Bradford Cornell (petitioners); Prof. Daniel Fischel (company/respondent)	Dissenting shareholder	Delaware	In statutory appraisal, court finds sales process was not "Dell compliant" and declines to assign any weight to deal price; court agrees with parties' experts that DCF best captures fair value on valuation date and arrives at final value below deal price.
<i>Verition Partners Master Fund Ltd. v. Aruba Networks, Inc.</i> 2018 Del. Ch. LEXIS 52 (Feb. 15, 2018)	Paul Marcus (petitioners); Kevin Dages (company/respondent)	Dissenting shareholder	Delaware	In statutory appraisal proceeding, Court of Chancery says unaffected market price provides "direct evidence of the collective view of market participants" as to target's fair value whereas deal price minus synergies is a less reliable "indirect measure."
<i>Goodman v. Goodman</i> 2018 Ind. App. LEXIS 86 (March 6, 2018)	None (wife); none (husband)	Marital Dissolution/ Divorce	Indiana	Appeals court upholds trial court's finding of enterprise goodwill, finding husband's habit of periodically placing business assets in his children's names as well as wife's significant involvement in the business indicate business is "transferable."
<i>Crocker v. Greater Colo. Anesthesia</i> 2018 Colo. App. LEXIS 299 (March 8, 2018)	Unknown (plaintiff/dissenting shareholder); unknown (defendant/company)	Dissenting shareholder	Colorado	Appeals court agrees with trial court that deal price does not reflect target's fair value because price resulting from merger of medical entities compensated shareholders for agreeing to substantial future pay reduction and for making other concessions.
<i>Li v. Aeterna Zentaris, Inc.</i> 2018 U.S. Dist. LEXIS 33246 (Feb. 28, 2018)	Dr. Adam Werner (plaintiffs); Dr. David I. Tabak (defendant)	Damages	Federal/ New Jersey	Court certifies securities fraud class action where plaintiff expert's analysis shows market efficiency and where defense expert fails to perform independent event study to show lack of price impact and disprove effect of alleged misrepresentations.
<i>Congel v Malfitano</i> 2018 N.Y. LEXIS 496 (March 27, 2018)	Unknown (plaintiffs); unknown (defendant)	Breach of Contract	New York	In wrongful partnership dissolution, New York high court finds, under applicable statute, exiting partner's interest may be valued under FMV standard of value; where exiting partner's interest is minority interest, DLOM and minority discount may apply.

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A BVR Live Webcast

May 10, 8:00 a.m.-5:00 p.m. PT/11:00 a.m.-8:00 p.m. ET

Featuring: 15+ top thought leaders

Fundamentals of Financial Modeling

Part 3 of Special Series on Advanced Modeling and Methodologies

May 16, 10:00 a.m.-11:40 a.m. PT/1:00 p.m.-2:40 p.m. ET

Featuring: Mark Shirley (V&L Consultants)

How the IRS Determines Reasonable Compensation and What You Should Do

May 22, 10:00 a.m.-11:40 a.m. PT/1:00 p.m.-2:40 p.m. ET

Featuring: Michael Gregory (Michael Gregory Consulting)

Valuation for M&A

May 23, 10:00 a.m.-11:40 a.m. PT/1:00 p.m.-2:40 p.m. ET

Featuring: Chris Mellen (Valuation Research Corp.)

Healthcare Valuation 101

Part 16 of BVR's Special Series presented by the BVR/AHLA Guide to Healthcare Industry Finance and Valuation

May 29, 10:00 a.m.-11:40 a.m. PT/1:00 p.m.-2:40 p.m. ET

Featuring: W. James Lloyd (PYA) and Kathryn Culver (PYA)

The Market Approach in the U.K. (1 p.m. UK Time)

May 30, 5:00 a.m.-6:00 a.m. PT/8:00 a.m.-9:00 a.m. ET

Featuring: Sandra Mossios (Grant Thornton UK)

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 A. Jacobson (GlassRatner) and

Stephen Selsbt (Herrick Feinstein LLP)

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)

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

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2018 IBBA Annual Conference

May 4-7
New Orleans, LA
www.ibba.org

13th Annual ASA/USC Fair Value Conference

May 10
Los Angeles, CA
www.appraisers.org

71st CFA Institute Annual Conference

May 13-16
Hong Kong, Hong Kong
www.cfainstitute.org

CM&AA Certification

May 21-25
Chicago, IL
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BUSINESS VALUATION DATA SPOTLIGHT

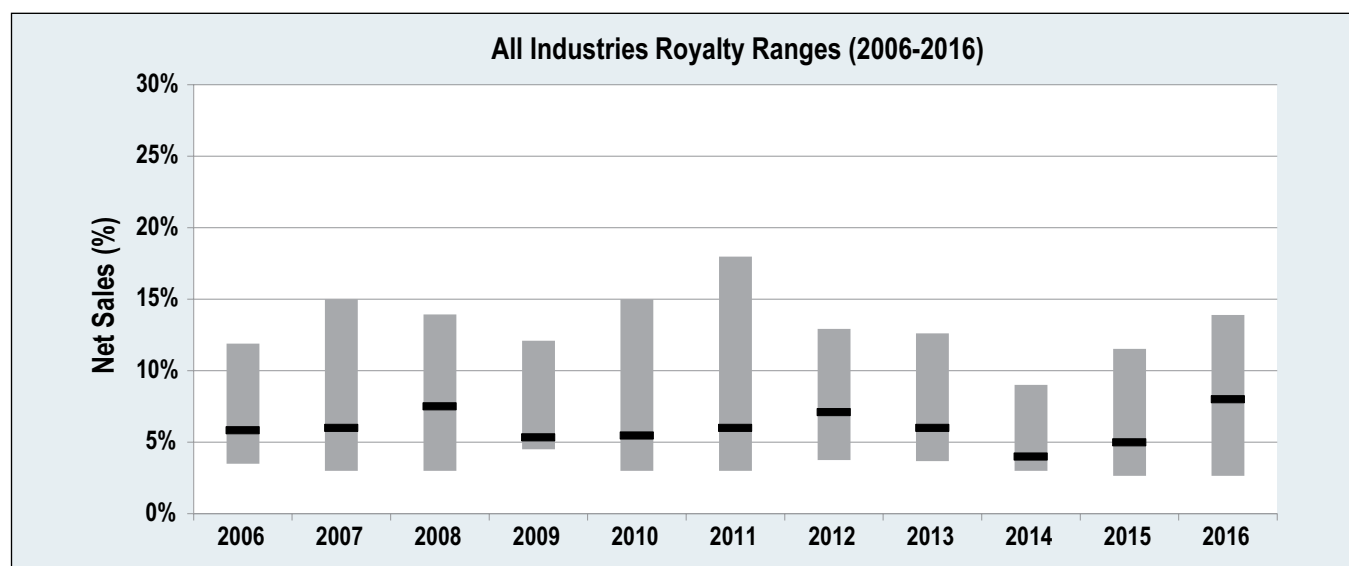
ktMINE Royalty Rate Data

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. 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. 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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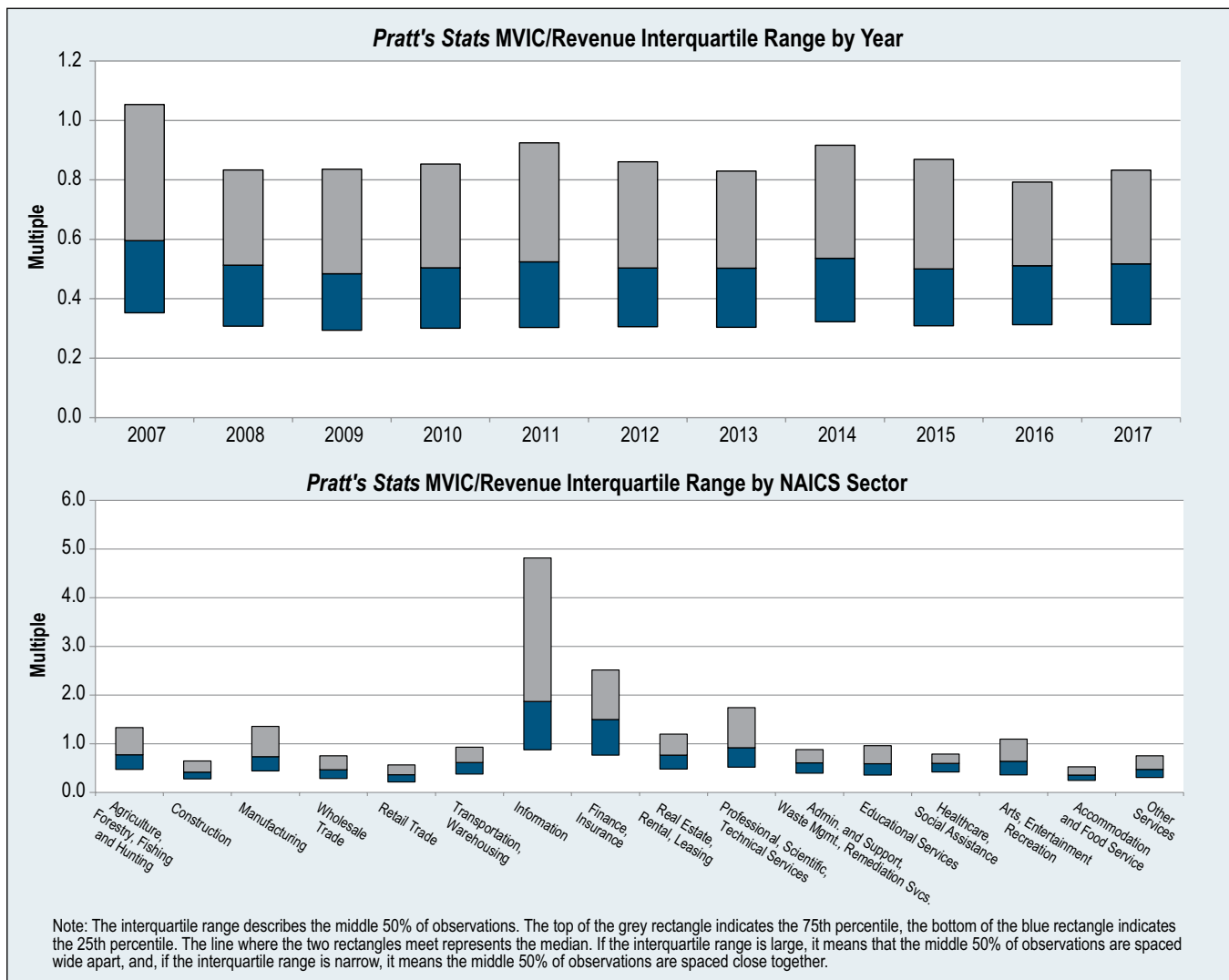
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Pratt's Stats MVIC/Revenue Trends

The graphs below display the interquartile range of the MVIC/revenue multiple by major NAICS sector and by year in the *Pratt's Stats* database.¹ For the period analyzed, the information sector had the greatest median MVIC/revenue multiple and was also the sector with the largest dispersion between its first quartile and third quartile (25th percentile and 75th percentile). The accommodation and food service sector had the lowest median MVIC/revenue multiple and the least dispersion in its interquartile range. When reviewing the data by year, the median MVIC/revenue multiple has consistently been between 0.4 and 0.6. In recent years, it appears that there has been less dispersion in the MVIC/revenue interquartile range when compared to past 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. ♦

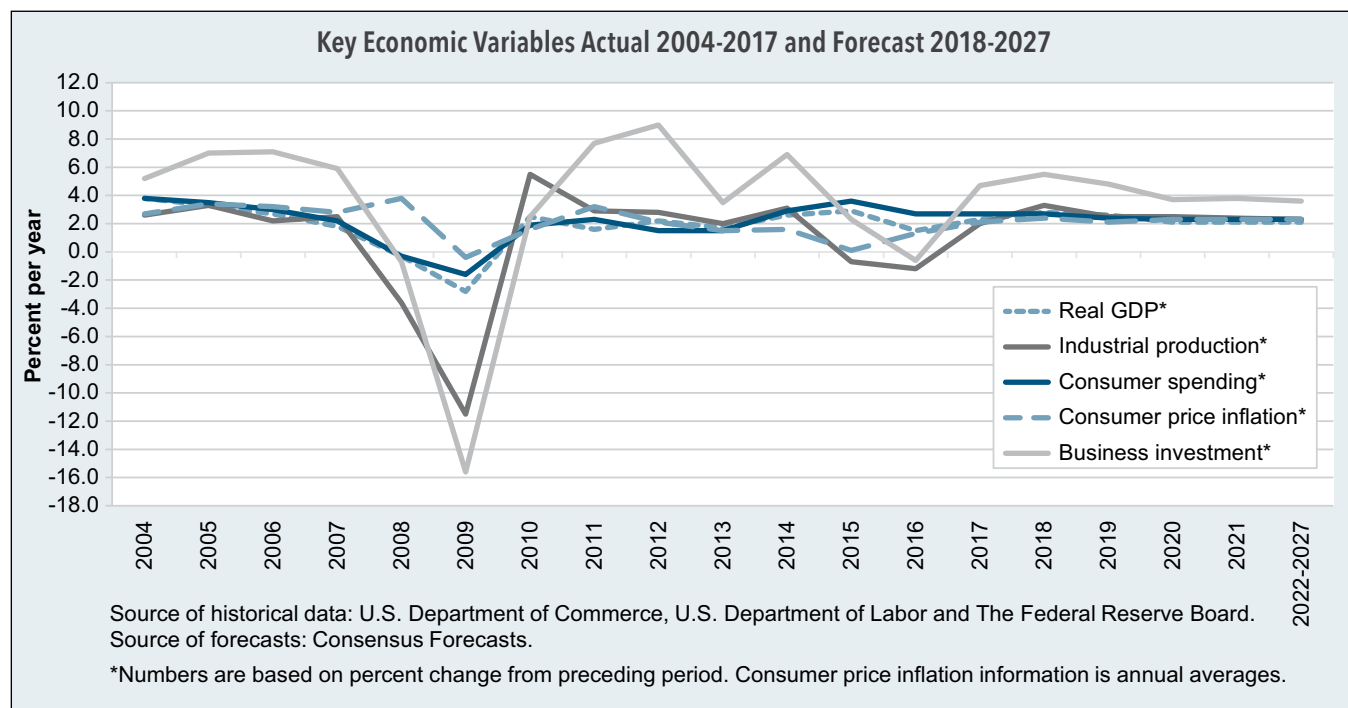
1 In *Pratt's Stats*, market value of invested capital (MVIC) is the term used for selling price. In addition to showing the median MVIC/revenue multiple by sector and year, the interquartile range provides a measure of dispersion.



Economic Outlook for the Month (From BVR's *Economic Outlook Update*)¹

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 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*	3.1	3.0	2.8	2.8	2.8	2.6	2.4
Consumer spending*	2.9	2.7	2.5	2.7	2.8	2.4	2.4
Business investment*	5.5	5.7	5.3	5.5	5.6	4.8	4.7
Consumer price inflation*	1.6	2.1	1.9	2.4	2.3	2.1	2.2
Real disposable personal income*	3.0	3.2	3.1	2.7	2.7	2.9	2.8
Unemployment rate	4.0	3.9	3.8	3.9	3.9	3.6	3.7
Industrial production*	2.6	2.9	2.9	3.3	3.3	2.5	2.5

Source of forecasts: *Consensus Forecasts - USA*, March 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.



Business Valuation Resources, LLC
 111 SW Columbia Street, Suite 750
 Portland, OR 97201-5814

May 2018 Cost of Capital Center

Duff & Phelps' 2018 Cost of Capital Data for BVU

Base U.S. Cost of Equity Capital
 $(R_f + \text{Median } RP_{m+s, \text{ all portfolio 25s}} + \text{ERP Adjustment})^{1,2,3}$
 Source: Duff & Phelps Cost of Capital Navigator,
 Risk Premium Report Study⁴

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

General Monthly Cost of Capital Data

Treasury yields⁷	
30-day:	1.63%
5-year:	2.56%
20-year:	2.85%
Prime lending rate:⁷	4.75%
Dow Jones 20-bond yield:⁸	3.79%
Barron's intermediate-grade bonds:⁸	4.69%
Dow Jones Industrials P/E ratios:⁸ (Represents median figures)	
On current earnings:	24.8
On 2017 operating earnings est.:	18.9
On 2018 operating earnings est.:	15.9
High yield estimate:⁸	
Mean:	9.2%
Median:	8.4%
Long-term inflation estimate:⁹	2.34%
Long-term rate of growth GDP:⁹	2.18%

BVR's Private Company Cost of Capital Index¹⁰ (April 1, 2018)

Company Revenue (\$thousands)	Cost of Capital
1,000	18.7%
5,000	16.9%
10,000	15.1%
15,000	14.2%

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.

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. 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.

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

8 Barron's, March 26, 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.



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