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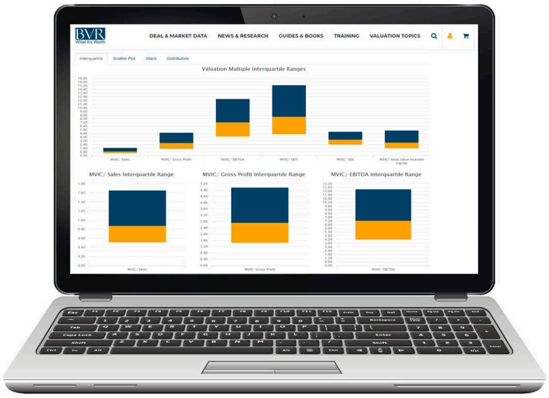

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BUSINESS VALUATION UPDATE

TIMELY NEWS, ANALYSIS, AND RESOURCES FOR DEFENSIBLE VALUATIONS

A Method for Quantifying Contract Renewal Risk in Valuations

By Matthew Gold, CFA, and
Matthew Ashby, CA
(Ferrier Hodgson, Queensland, Australia)

This article presents a formula that explicitly incorporates the assumed probability of renewal in the valuation of businesses that depend on contracts, licenses, or permits for their future cash flows. The formula builds on the Gordon growth model and the formula for the future value of a growing annuity and has broad application subject to certain conditions being met. We suggest the mathematical quantification of renewal risk based on an assessment of the probability of contract renewal offers a more intuitive and reliable approach than making subjective adjustments to cash flows, capitalization multiples, or discount rates to account for the risk of nonrenewal.

continued on page 7...

Stale Fairness Opinions in Related Party Transactions Should Be Updated

By Gilbert E. Matthews, CFA

It is common practice for proxy statements to contain fairness opinions that are dated weeks (or months) prior to the mailing date. Typically, they are not reviewed in the interim. This is the case even though the Delaware Court of Chancery has stated:

> The financial advisor's opinion of financial fairness for a proposed transaction is one of the most important process-based underpinnings of a board's recommendation of a transaction to its stockholders and, in turn, for the stockholders' decisions on the appropriateness of the transaction.[1]

1 *David P. Simonetti Rollover IRA v. Margolis*, 2008 Del. Ch. LEXIS 78 (June 27, 2008) at *25.

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BUSINESS VALUATION UPDATE

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A fairness opinion is customarily dated on the day it is rendered to a board of directors or to a special committee, usually immediately prior to the board's vote to approve a transaction. The mailing date of a proxy statement or similar document sent to shareholders is often two months or more after the opinion was originally given.

Adverse changes in a company's recent operations or prospects, in market conditions, in industry conditions, and in other factors could cause a transaction that had been fair when an opinion is initially rendered to become unfair by the mailing date. However, the inclusion of a fairness opinion in a mailing to shareholders implies that the opinion is still valid at that later date.

If a fairness opinion is no longer valid when a proxy statement is sent to shareholders, the proxy statement becomes misleading. If a material change in market conditions or in factors intrinsic to the target company (or to the acquiror in a stock-for-stock merger) occurs after a fairness opinion has been rendered, the issuer of the opinion should consider whether or not its opinion is still valid and, if appropriate, it should withdraw its opinion.

The withdrawal of a fairness opinion is uncommon but not unprecedented. In rare cases, opinions have been withdrawn subsequent to mailing of a proxy statement. For example, Bear Stearns withdrew a fairness opinion in 1984 that it had rendered to Far West Financial Corp. in a going-private transaction because a takeover battle for Gulf Oil, in which Far West had a major investment, resulted in a material increase in Far West's value shortly before the shareholder vote. The shareholders meeting was cancelled, and the proposed transaction aborted.

In the past, a small number of firms had a policy of requiring that fairness opinions be updated before their inclusion in proxy statements. A 1993 Delaware decision noted that Goldman Sachs then had this policy,[2] and it was Bear Stearns' policy for more than two decades.[3]

The author searched the SEC's EDGAR database for proxy statements from 1998 through mid-2018 in which fairness opinions were updated to a date proximate to the mailing date (other than transactions where the terms of the deal were changed subsequent to the initial opinion).[4]

2 "Goldman Sachs's policy is to update its analyses at the time of mailing of proxy materials and to permit the distribution of its [fairness] opinion only if it continues to be valid." *Behrens v. Utd. Investors Mgt. Co.*, 1993 Del. Ch. LEXIS 217 (Del. Ch. Oct. 1, 1993) at *28.

3 The author was chairman of Bear Stearns' Valuation Committee from 1970 through 1995.

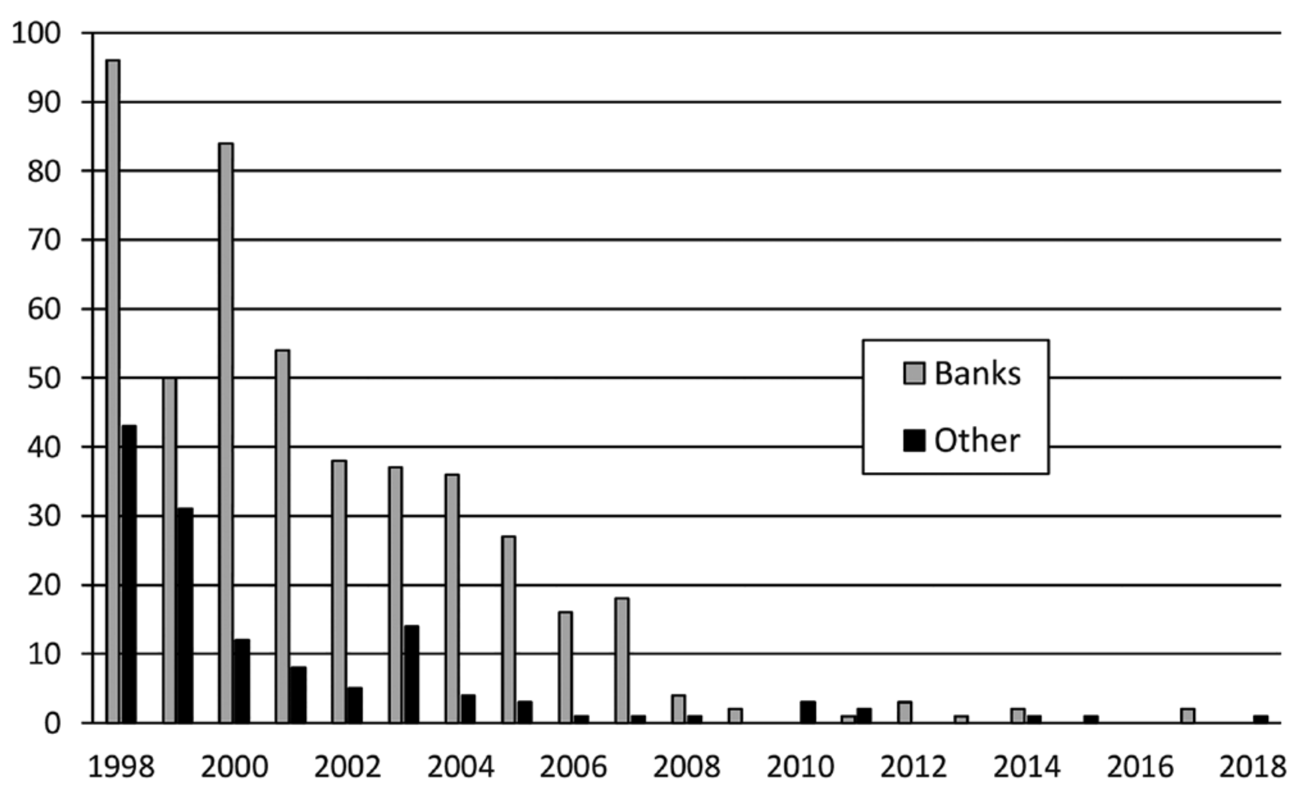
4 The search used numerous keywords to identify updated fairness opinions. It is likely that the search found most, but not all, of the relevant opinions.

The results are summarized in the exhibit. It shows that a substantial majority of the opinions that were updated were for bank acquisitions. (Ninety-seven percent of the bank fairness opinions and 59% of the others were in arm's-length transactions.) It also shows that the practice of updating fairness opinions declined after 2000 and that it has become much rarer in recent years.

In 2007, the NASD (now FINRA) requested comments on its pending Rule 2290 (now FINRA Rule 5150) regarding disclosures and procedures for fairness opinions broker-dealers issue. It rejected a proposal establishing procedures with respect to updating fairness opinions:

> One commenter suggested that NASD should require members to establish

Fairness Opinions Updated in Proxy Statement



> procedures to determine under what circumstances their fairness opinions should be updated, and to address, prior to public distribution of an opinion, whether that opinion should be reaffirmed or withdrawn. The commenter further suggested that in the event a non-updated fairness opinion is included in materials sent to shareholders, the member should be required to disclose the basis on which it determined not to update the opinion. The need to update fairness opinions is not germane to the primary purpose of the proposed rule, which is to address potential conflicts of interest.[5]

Federal courts have ruled that a fairness opinion is false only if the party rendering the opinion does not sincerely believe it to be correct:

> A fairness opinion is "objectively false" if the subject matter of the opinion is not, in fact, fair, and is "subjectively false" if the speaker does not, in fact, believe the subject matter of the opinion to be fair.[6]

> While material statements of fact are false if they are contradicted by true facts, material statements of opinion are false only if the opinion was not sincerely held…. In the case of a fairness opinion, then, the plaintiff must plead with particularity why the statement of opinion was objectively and subjectively false.[7]

More recently, a federal court found that the investment banker had been retained only to provide a fairness opinion and that its opinion was not false or intentionally misleading.[8] It commented:

> Under New York and Texas law, the elements of a fraud cause of action are: (1) a material representation was made; (2) it was false when made; (3) the speaker either knew it was false, or made it without knowledge of its truth; (4) the speaker made it with the intent that it should be acted upon; (5) the party acted in reliance; and (6) the party was injured as a result.[9]

In that case, the investment banker's opinion survived the court's scrutiny. In a situation where material developments subsequent to the initial rendering of the fairness opinion make the opinion clearly incorrect, might a court rule differently? Would the standard disclaimers[10] protect an investment banker who knew, or should have known, that the transaction was no longer fair? Even if the investment banker was protected, would the directors have liability? An updated fairness opinion would protect the prospective defendants.

Investment banks often include in their engagement letters a specific provision that their fairness opinion will not be updated, and these provisions have been upheld in court. There is no legal requirement that fairness opinions be updated. The U.S. Court of Appeals rejected a claim that a fairness opinion by Credit Suisse First Boston had been grossly negligent when it did not update a

5 NASD response to comments on proposed NASD Rule 2290 [now FINRA Rule 5250], June 7, 2007, p. 19.

6 *Shurkin v. Golden State Vintners, Inc.*, 471 F. Supp. 2d 998, 1013 (N.D. Cal. 2006), citing *In Re McKesson HBOC, Inc. Securities Litig.*, 126 F. Supp. 2d 1248, 1265 (N.D. Cal. 2000).

7 *McKesson HBOC* at 1265.

8 *Seven Seas Petroleum, Inc. v. CIBC World Markets,* 2010 U.S. Dist. LEXIS 54946 (S.D. Tex. June 4, 2010) at *76.

9 Ibid. at *25-26.

10 E.g., "This opinion addresses only the fairness from a financial point of view as of the date hereof," "Our opinion is based on economic, monetary and market conditions as they exist and can be evaluated as of the date hereof and we assume no responsibility to update or revise our opinion based upon circumstances and events occurring after the date hereof," and "Our opinion does not constitute a recommendation to any stockholder as to how such stockholder should vote with respect to the Merger."

fairness opinion when its engagement letter addressed this point:

> The engagement contract says that CSFB has … no duty to update its opinion. CSFB did what it was hired to do. The Trust's belief that CSFB should have been hired to do something different is not a basis of liability.[11]

Similarly, the Delaware Court of Chancery has ruled that when "the opinion clearly states when the opinion was rendered and that [the investment banker] was not asked to and was not under an obligation to update its fairness opinion, … one cannot say that the opinion is misleading even though one might consider it of little value."[12]

However, directors have a responsibility to ask whether market changes have caused a transaction to become unfair:

> Perhaps some set of intervening changes in public markets would be such as to require diligent directors to, in effect, say, "How could it be that the deal we earlier negotiated is still fair to the minority?" In that event, the directors' duty of care would require them to inquire into the grounds of the advisor's view, and in such circumstances, then make appropriate disclosure with respect to any material facts they learn. In such a case if the board failed to make that inquiry, its members may have failed in the execution of their duty to make an informed judgment.[13]

By extension, material changes to the target company or, in stock deals, to the acquiror should be similarly addressed.

A plaintiffs' counsel could cite this decision in a situation where an outdated fairness opinion has become inappropriate because of subsequent events. If directors have ignored the changed circumstances (or are blissfully unaware of them), plaintiffs could argue that they have breached their fiduciary duties by failing to make

11 *HA2003 Liquidating Trust v. Credit Suisse Secs. (USA) LLC*, 517 F.3d 454, 458-9 (7th Cir. 2008).

12 *Ince & Co. v. Silgan Corp.*, 1991 Del. Ch. LEXIS 20 (Del. Ch. Feb. 7, 1991) at *16.

13 *Behrens v. Utd. Investors Mgt. Co.*, 1993 Del. Ch. LEXIS 217 (Del. Ch. Oct. 1, 1993) at *43-*44.

an informed judgment as to the fairness of the transaction at the time the shareholders' votes are being solicited.

Courts have considered whether fairness opinions may have become outdated due to subsequent events. In a Delaware case where plaintiffs alleged that a material change in the price of natural gas made a squeeze-out of shareholders of a natural gas producer unfair, the court ruled for the defendants:

> The evidence at trial made clear that full bring-down opinions are the exception, not the rule. Naturally, changes between the date of a fairness opinion and the date of merger completion can be so great as to render an earlier fairness opinion unreliable.... In the circumstances [of this case], there was no reason to incur the expense of a completely new fairness opinion.[14]

The long-running *Emerald Partners* case, which spawned a dozen Chancery decisions and seven Supreme Court decisions in 16 years, addressed the special committee's obligation to seek an updated opinion. In this case, the fairness opinion had been updated for the proxy statement, but the closing of the transaction had been materially delayed. Plaintiff alleged that an updated opinion should have been obtained before closing because of changed circumstances, but the Court of Chancery ruled that "the defendants could have decided the updated-fairness opinion issue, in perfectly good faith, either way" and that "whether or not that decision turned out to be correct or wise, the Court is satisfied … that the board's decision was made on a rational basis."[15]

14 *Glassman v. Unocal Exploration Corp.*, 793 A.2d 329, 350 (Del. Ch. 2000); aff'd, 777 A.2d 242 (Del. 2001).

15 *Emerald Partners v. Berlin*, 2003 Del. Ch. LEXIS 42 (Del. Ch. Apr. 28, 2003) at *66; *aff'd*, 840 A.2d 641 (Del. 2003).

Directors should consider whether their engagement letter with its financial advisor should obligate the advisor to update or reaffirm its fairness opinion. Admittedly, this may be impractical in many arm's-length transactions where an acquiror does not want the failure to receive an updated opinion to be an "out" under a merger agreement. In practice, it may be difficult for a seller to negotiate a provision that would make the transaction conditional on an updated fairness opinion.

However, there is little reason for directors not to demand an updated opinion in a related party transaction, particularly when a control shareholder is squeezing out minority shareholders. Courts understandably apply greater scrutiny to conflicted transactions than to arm's-length transactions. An updated opinion would significantly reduce the risk that shareholders accept a transaction that, although fair when negotiated, has become unfair because of subsequent corporate or market developments and would reduce the risk of an adverse decision in litigation.

A fairness opinion should serve to protect not only directors, but also the interests of shareholders. Directors and special committees in related party transactions would be better protected, and shareholders would be better informed, if a fairness opinion was updated shortly prior to mailing of a proxy statement. In the absence of an updated letter, directors would be well advised to ascertain whether the firm that rendered the opinion continues to believe the transaction would be fair. However, it would be more helpful both to directors and shareholders if the fairness opinion were updated prior to mailing. ◆

Gilbert E. Matthews, *CFA, is chairman of the board and a senior managing director of Sutter Securities Inc. (San Francisco). He has more than 50 years of experience in investment banking and has spoken and written extensively on fairness opinions, corporate valuations, and litigation relating to valuations.*

Contract Renewal Risk

... continued from front page

To request a free copy of an Excel workbook demonstrating the use of the formulas in this article, visit ferrierhodgson.com/au/valuationupdate.

Renewal risk in valuations. The valuation of businesses is commonly performed using a capitalization of future maintainable earnings (CFME) method or a discounted cash flow (DCF) method. The CFME method and DCF method (where a terminal value is applied) reflect an estimate of the ongoing cash flows or earnings into perpetuity. However, where a business's earnings are reliant on a contract, license, or permit[1]—and that contract is subject to renewal at discrete intervals—the estimate of ongoing earnings or cash flows beyond the current contract period is subject to the risk of nonrenewal. The valuation of such businesses should take account of the uncertainty—however great or small it may be—that, at some point in the future, the contract may not be renewed.

Situations where this may arise include:

- Operations and maintenance contracts;
- Permits or licenses government authorities issue (e.g., quarrying permits, broadcasting licenses); and
- Franchise agreements.

Common practice. Some approaches seen in practice include applying a percentage discount to the cash flows or capitalization multiple, increasing the discount rate for the added uncertainty, or extending the cash flow period to allow for an explicit number of contract renewal periods and attributing no value to potential cash flows thereafter.

While all of these approaches have the appropriate effect of discounting business value for contract renewal risk, the magnitude of such discounts may be mathematically inconsistent with the valuer's view about the probability of contract renewal at each renewal interval, resulting in an overestimation or underestimation of the business's value.

1 Hereinafter, "contract."

We suggest that, as an input to a business valuation, the probability of contract renewal is something that can be more intuitively estimated than a discount to the cash flows or the capitalization multiple, or an adjustment to the discount rate. It is also less arbitrary than attributing value to a limited number of contract renewal periods.

While it is important to note that no valuation method is free from uncertainty, it is possible to apply a more refined valuation approach in relation to the business value beyond the current contract period if the following parameters are reasonably well understood:

- Length of the contract period;
- Annual cash flows the business or contract generate; and
- Ongoing probability[2] of contract renewal.

Terminal value—Gordon growth model. The terminal value of a business is generally determined using the constant growth perpetuity formula (Gordon growth model), which is summarized in Exhibit 1.

Exhibit 1. Gordon Growth Model

$$TV = \sum_{t=1}^{\infty} \frac{CF_0(1+g)^t}{(1+r)^t} = \frac{CF_0(1+g)}{1+r} + \frac{CF_0(1+g)^2}{(1+r)^2} + \cdots + \frac{CF_0(1+g)^\infty}{(1+r)^\infty}$$
$$= \frac{CF_0(1+g)}{r-g}$$

Where:

CF_0 = Sustainable cash flow into perpetuity

g = Sustainable cash flow growth rate into perpetuity

r = Required rate of return[3]

2 Conditional upon earlier renewals occurring.

3 Either WACC or cost of equity depending on the nature of the cash flows.

Terminal value–single-period contract term. The simplest way to show the effect of contract renewal risk in the terminal value is to start with a contract subject to renewal after each cash flow period.[4]

The Gordon growth model is a geometric series,[5] where the first term is

$$\frac{CF_0(1+g)}{1+r}$$

and the common ratio is

$$\frac{1+g}{1+r}.$$

Assuming a constant conditional renewal probability of P, no costs of renewal, and ignoring any realization cash flows in the event of nonrenewal, the growth rate in the terminal value formula can be adjusted to incorporate the conditional probability of renewal by substituting "$P(1+r)$-1" for "r" in the Gordon growth model, as shown in Exhibit 2. In some cases, the adjusted formula will reflect a negative growth rate.[6]

Exhibit 2. Terminal Value Adjusted for Renewal Risk (Single-Period Contract Term)

$$TV_{renewal} = \frac{CF_0P(1+g)}{(1+r)-P(1+g)}$$

Where:

P = Probability of contract renewal

Terminal value–multiple-period contract term. In the event the contract renewal period is longer than one period, the above formula is no longer appropriate. The adjusted terminal value cash flow series is set out in Exhibit 3.

4 For example, after each year, if cash flows are modelled annually.

5 A geometric series is given by $\sum_{k=0}^{\infty} ar^k = \frac{a}{1-r}$, for |r|<1, where a is the first term of the series and r is the common ratio.

6 Where $g<^1/_P$-1.

Exhibit 3. Terminal Value Adjusted for Renewal Risk (Multiple-Period Contract Term)–Cash Flow Series

$$TV_{renewal} = \frac{CF_0P(1+g)}{1+r} + \frac{CF_0P(1+g)^2}{(1+r)^2} + \cdots + \frac{CF_0P(1+g)^n}{(1+r)^n} + \frac{CF_0P^2(1+g)^{n+1}}{(1+r)^{n+1}} + \frac{CF_0P^2(1+g)^{n+2}}{(1+r)^{n+2}} + \cdots + \frac{CF_0P^2(1+g)^{2n}}{(1+r)^{2n}} + \cdots + \frac{CF_0P^{\infty/n}(1+g)^{\infty-n+1}}{(1+r)^{\infty-n+1}} + \frac{CF_0P^{\infty/n}(1+g)^{\infty-n+2}}{(1+r)^{\infty-n+2}} + \cdots + \frac{CF_0P^{\infty/n}(1+g)^{\infty}}{(1+r)^{\infty}}$$

Where:

n = Length of each contract renewal period

An example of the series is presented in Exhibit 4 where the cash flow CF_0 is \$100, the required rate of return (r) is 10% per annum, the growth rate (g) is 2% per annum, the renewal probability (P) is 80%, and the contract term (n) is five years.

The series in Exhibit 4 on its face does not appear to reflect a geometric series. However, if each individual contract renewal series is grouped as a future value of a growing annuity, where each annuity represents the future value of the cash flows from each contract renewal at the end of each contract period, Exhibit 5 is derived.

The same inputs from the previous example expressed in terms of a series of growing annuities are summarized in Exhibit 6.

The adjusted terminal value formula now represents a geometric series where the first term is

$$\frac{FV_{CF}P}{(1+r)^n}$$

and the common ratio is

$$\frac{P(1+g)^n}{(1+r)^n}.$$

Substituting these terms into the geometric series formula and multiplying by

$$\frac{(1+r)^n}{(1+r)^n}$$

derives the adjusted terminal value of probability-weighted cash flows from contract

Exhibit 4. Adjusted Terminal Value Cash Flow Series

	TV–100% probability			TV–80% prob.–5-year contract renewal			
Year (i) [1]	CFi [2]	DCFi [3]	ΣDCFi [4]	Probability [5]	$CF_{adj,i}$ [6]	$DCF_{adj,i}$ [7]	$\Sigma DCF_{adj,i}$ [8]
1	102	93	93	80.0%	82	74	74
2	104	86	179	80.0%	83	69	143
3	106	80	258	80.0%	85	64	207
4	108	74	332	80.0%	87	59	266
5	110	69	401	80.0%	88	55	321
6	113	64	464	64.0%	72	41	361
7	115	59	523	64.0%	74	38	399
8	117	55	578	64.0%	75	35	434
9	120	51	629	64.0%	76	32	467
10	122	47	676	64.0%	78	30	497
11	124	44	719	51.2%	64	22	519
12	127	40	760	51.2%	65	21	540
13	129	37	797	51.2%	66	19	559
14	132	35	832	51.2%	68	18	577
15	135	32	864	51.2%	69	16	593
…	…	…	…	…	…	…	…
196	4,849	0	1,275	0.0%	1	0	710
197	4,946	0	1,275	0.0%	1	0	710
198	5,045	0	1,275	0.0%	1	0	710
199	5,146	0	1,275	0.0%	1	0	710
200	5,248	0	1,275	0.0%	1	0	710

Notes:

[1] Year (i), [2] $CF_0 \times (1+g)^i$, [3] $CFi/(1+r)^i$, [4] $\sum_{i=1})DCF_i$,

[5] $P^{i/n(\text{rounded up to nearest integer})}$, [6] $CF_i \times Probability$,

[7] $CF_{adj,i} / (1+r)^i$ [8] $\sum_{i=1} DCF_{adj,i}$

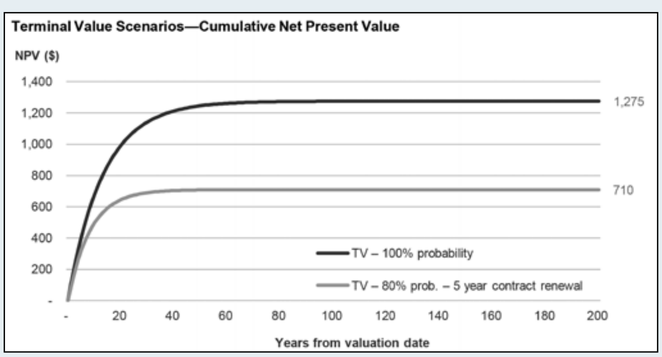


Exhibit 5. Terminal Value Adjusted for Renewal Risk (Multiple-Period Contract Term)– Annuity Series

$$TV_{renewal} = \frac{FV_{CF}P}{(1+r)^n} + \frac{FV_{CF}P^2(1+g)^n}{(1+r)^{2n}} + \cdots + \frac{FV_{CF}P^{\infty/n}(1+g)^{\infty-n}}{(1+r)^{\infty}}$$

Where:

$$FV_{CF} = \frac{CF_0(1+g)}{r-g} \times [(1+r)^n - (1+g)^n]$$

Exhibit 6. Series of Growing Annuities

Contract renewal (j) [1]	TV–80% prob.–5-year contract renewal			
	Probability [2]	$FV_{CF,j}$ [3]	$PV_{CF,j}$ [4]	$\Sigma PV_{CF,j}$ [5]
1	80.0%	646	321	321
2	64.0%	713	176	497
3	51.2%	787	96	593
4	41.0%	869	53	646
5	32.8%	959	29	675
6	26.2%	1,059	16	691
7	21.0%	1,170	9	700
8	16.8%	1,291	5	704
9	13.4%	1,426	3	707
10	10.7%	1,574	1	709
11	8.6%	1,738	1	709
12	6.9%	1,919	0	710
13	5.5%	2,119	0	710
14	4.4%	2,339	0	710
15	3.5%	2,583	0	710
16	2.8%	2,851	0	710
17	2.3%	3,148	0	710
18	1.8%	3,476	0	710
20	1.2%	4,237	0	710

Notes:

[1] Contract renewal (j)
[2] P^j
[3] $\frac{CF_0(1+g)}{r-g} \times [(1+r)^n - (1+g)^n] \times (1+g)^{(j-1)\times n}$
[4] $FV_{CF,j}/(1+r)^{j\times n}$
[5] $\sum_{i=1}^{j} PV_{CF,j}$

renewals for greater than one year as summarized in Exhibit 7.

Substituting the inputs from the previous example into the above formula results in an adjusted terminal value for contract renewal risk of \$710, which was the limit from each series using Exhibit 3 and Exhibit 5.

This formula includes the original Gordon growth formula and a contract renewal factor that incorporates the additional terms P and n. The contract renewal factor ranges between 0 and 1 and can be viewed as the adjustment factor to apply to the terminal value to incorporate contract renewal risk.

Contract renewal factor. The contract renewal factor effectively represents the ratio of the value of a business that faces contract renewal risk to the traditional terminal value for an otherwise identical business without contract renewal risk.

The conditional contract renewal probability, P, and the contract renewal period, n, positively impact it, meaning that higher values for these inputs increase the contract renewal factor and in turn the adjusted terminal value.

The two other inputs to the contract renewal factor are also present in the Gordon growth formula and have opposite effects on both components of the adjusted terminal value formula:

- The required rate of return, r, has a *negative* impact on the Gordon growth formula and a *positive* impact on the contract renewal factor (Exhibit 8). This is because the cumulative contract renewal probability in later years has a minimal incremental effect on value where high rates of return are already heavily discounting the cash flows.
- The growth rate, g, has a *positive* impact on the Gordon growth formula and a *negative* impact on the contract renewal factor (Exhibit 9). This is because the cumulative probability of contract renewal compared with lower growth rates affects the positive effects from higher growth rates on cash flows in later years more.

Exhibit 7. Terminal Value Adjusted for Renewal Risk (Multiple-Period Contract Term)–Simplified Formula

$$TV_{renewal} = \frac{CF_0(1+g)}{r-g} \times P\,\frac{(1+r)^n - (1+g)^n}{(1+r)^n - P(1+g)^n}$$

Exhibit 8

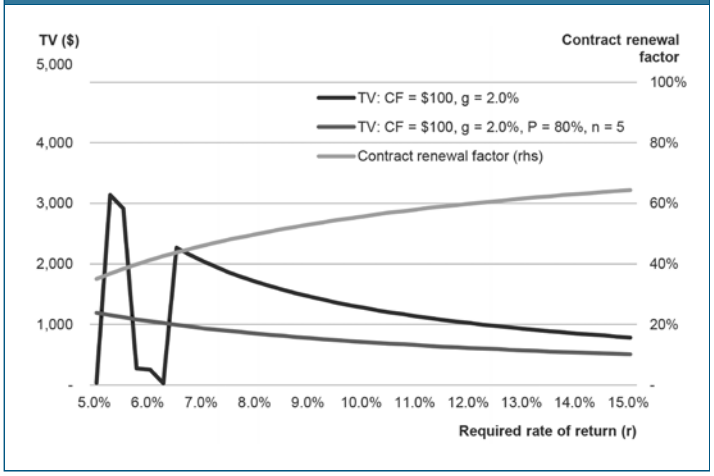
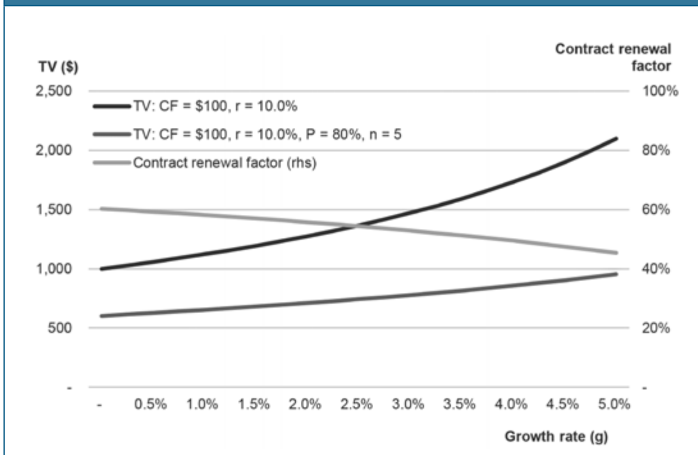


Exhibit 9



Realization of cash flows on nonrenewal. The adjusted terminal value formula assumes no realization cash flows in the event the contract is not renewed. However, there will be cases where a business can realize net cash flows upon winding up operations if the contract or licence is not renewed (e.g., from disposal of property, plant, and equipment).

An adjusted terminal value formula can be written to model the nonrenewal side of the equation where net cash flows can be realized. For simplicity, it is assumed that cash flows are realized immediately following the nonrenewal of the contract (i.e., at t=0), the contract is lost to the business forever if not renewed, and the net cash flow on realization (CF_{nr}) grows at the same rate (g) as the cash flows from the contract in the adjusted terminal value formula.[7]

The probability-weighted nonrenewal cash flow series is described in Exhibit 10.

Exhibit 10 is a geometric series where the first term is CF_{nr} (1-P) and the common ratio is

$$\frac{P(1+g)^n}{(1+r)^n}.$$

Substituting these terms into the geometric series formula derives the present value of the probability weighted net cash flows on nonrenewal as summarized in Exhibit 11.

7 Although it is possible to incorporate a different growth rate.

Exhibit 10. Terminal Value of Cash Flows on Nonrenewal (Multiple-Period Contract Term)–Cash Flow Series

$$TV_{nr} = CF_{nr}(1-P) + \frac{CF_{nr}P(1-P)(1+g)^n}{(1+r)^n} + \frac{CF_{nr}P^2(1-P)(1+g)^{2n}}{(1+r)^{2n}} + \cdots + \frac{CF_{nr}P^{\infty/n}(1-P)(1+g)^{\infty}}{(1+r)^{\infty}}$$

Exhibit 11. Terminal Value of Cash Flows on Nonrenewal (Multiple-Period Contract Term)–Simplified Formula

$$TV_{nr} = \frac{CF_{nr}(1-P)(1+r)^n}{(1+r)^n - P(1+g)^n}$$

Assumptions and limitations. While the adjusted terminal value formula can more precisely quantify contract renewal risks where the inputs are well understood, it is subject to the following assumptions and limitations:

- *The probability of contract renewal is conditioned upon the contract being held and is fixed.* In reality, the probability of contract renewal may change with economic conditions, which the formulae do not accommodate.

- *Annual cash flows in real terms are fixed.* This does not allow for lumpy capital expenditure, which may be required early in a contract, or tendering costs in order to win the contract. However, these once-per-contract costs can be modelled and simplified into a single formula the same way as the realization cash flows if they are considered material.

- *In the event the contract is not renewed, it is lost forever.* It may be possible to resecure a contract in the future if it is lost to a competitor. The adjusted terminal value formula cannot incorporate the probability of securing the contract after it is lost; however, this could potentially be modelled using a binomial tree method. Another complexity is that the probability of resecuring a contract after it is lost may not be the same as the probability of renewing the contract if it is already held.

Case study. Consider a hypothetical transport company that provides school bus services in a regional location. Assume the following in relation to the company's operations:

- The company is the sole provider of these services in the region and operates pursuant to a perpetual-lived contract the local government issues;
- The company generates annual free cash flows to firm of $5 million, which are expected to grow at 3% per annum into perpetuity; and
- The company has a weighted average cost of capital of 12%.

Applying the Gordon growth formula,[8] the company has an enterprise value of $57.22 million.

Consider the same company, but, instead of a perpetual contract, it was operating pursuant to a five-year contract that was put to tender on each renewal. The following assumptions are applicable.

- There is no change to the free cash flow or weighted average cost of capital assumptions outlined above;
- The company has a 90% probability of contract renewal every five years;
- The current contract is due for renewal today; and
- The net realizable value of the company's assets is $10 million, which is expected to grow at 3% per annum.

Applying the above assumptions in both the adjusted terminal value formula[9] and terminal value on nonrenewal formula[10] derives the following results:

- Adjusted terminal value of $43.20 million, reflecting a contract renewal factor of 75.5%;
- Terminal value of nonrenewal cash flows of $2.45 million;
- Total enterprise value of $45.65 million, reflecting a discount of 20.2% to the enterprise value of the same company operating pursuant to a perpetual contract.

The adjusted terminal value formula provides a refined approach to determining the effect of contract renewal probabilities on business values where certain criteria are met.

This demonstrates that even a low risk of contract nonrenewal (in this case, 10%) can have a significant impact on enterprise value (in this case, 20.2%).

Conclusion and potential extensions. The future cash flows (and hence, enterprise values) of many businesses depend, to a significant extent, on the renewal of contracts, licences, permits, or similar instruments. The adjusted terminal value formula derived in this article provides a refined approach to determining the effect of contract renewal probabilities on business values where certain criteria are met. The formula has the potential to be further developed into a model that incorporates the probability of regaining a contract after it has been lost. ◆

__Matthew Gold,__ CFA, is a senior manager in the forensic accounting practice of Ferrier Hodgson in Queensland, Australia. __Matthew Ashby,__ CA, is a partner of Ferrier Hodgson's forensics practice also in Queensland.

8 Exhibit 1.

9 Exhibit 7.

10 Exhibit 11.

New Board and Pending Standards Highlight PCAOB Update

At the recent ASA/USC 13th Annual Fair Value Conference in Los Angeles, George Wilfert, deputy director of the Public Company Accounting Oversight Board (PCAOB), gave an update on the organization's activities. He was interviewed by Thomas Ryan, professor (USC Leventhal School of Accounting), who was a co-organizer of the event, along with Ray Rath (Globalview Advisors). Wilfert prefaced his remarks with the standard disclaimer that the views he expressed were his own and not necessarily those of the PCAOB members of the board or the PCAOB staff. Here are some of the main points in what was a very informative session.

New board. The PCAOB is not a federal agency but rather a nonprofit that's run by a board that has five members. Unlike most federal agencies, where the president of the United States appoints the chairperson, the Securities and Exchange Commission appoints the PCAOB board in consultation with the Treasury and the Federal Reserve. Interestingly, Wilfert pointed out, the bylaws say that no more than two CPAs can be on the board. The non-CPAs tend to be lawyers: One of them has an accounting degree, another is a law professor, and the other is an attorney who worked at the SEC and is a cyber security expert. "A good combination," said Ryan.

A key point here is that the current board was recently put in place, so everybody is relatively new. Therefore, there is some uncertainty as to exactly how the new PCAOB board will look at things in the future and the direction it will take. Wilfert believes that the new board intends to review and evaluate the effectiveness and efficiency of all different aspects of the organization before it decides to make changes, if any.

Deficiencies. Wilfert pointed out that the level of audit deficiencies with respect to fair value has improved over the last few years, but they are still relatively high. "There's certainly room for improvement," he said. Putting it in context for the valuation audience, the nature of the deficiencies is much broader than fair value. The most prevalent deficiencies are with respect to internal controls over financial reporting and risk assessment standards. Auditing fair value measures and estimates is third on the list in terms of the number of overall deficiencies.

Wilfert cited the "2017 Survey of Fair Value Audit Deficiencies"[1] conducted by the valuation and litigation consultancy firm Acuitas Inc. The survey examines seven years of PCAOB inspection reports on auditing firms, and the key findings are:

- The percentage of audit deficiencies has dropped since its dramatic peak in 2013—but remains quite high, at 31.6% of audits and other engagements examined.
- Audit deficiencies related to fair value measurements are increasingly attributable to a surge in business combination engagements. Fair value deficiencies cited related to business combinations increased to 68% in 2015, up from 56% in 2014. This is due to a surge in deal-making activity.
- Failures to assess audit risks as well as test internal controls and assumptions underlying prospective financial information are the root causes of most fair value and impairment audit deficiencies. Improvements in this area can be tied to more quality control measures and ensuring due professional care.

1 acuitasinc.com/documents/2017_PCAOB_Fair_Value_Audit_Deficiencies_Survey-FINAL.pdf.

To get a clearer idea of what might trigger an audit deficiency, Ryan posed the scenario of a DCF valuation that does not include any documentation as to the source of the financial projections, although the projections look to be thorough. Wilfert noted that the PCAOB rarely writes up comment forms just because of lack of documentation when there's persuasive evidence that sufficient work was done.

Pending standard. In terms of the relevant auditing standards the PCAOB issued, there are currently three standards:

- Auditing Accounting Estimates (AS 2501);
- Auditing Fair Value Measurements and Disclosures (AS 2502); and
- Auditing Derivative Instruments, Hedging Activities, and Investments in Securities (AS 2503).

There is a proposal pending that will combine all three of these standards and streamline them into one that will use the existing AS 2501 designation but will be retitled Auditing Accounting Estimates, Including Fair Value Measurements (AS 2501). The other two will be folded Into AS 2501.

There are three approaches in the existing auditing standards that will be retained in the combined standard, Wilfert noted. They are: (1) you can audit management's process and then assess the reasonableness of the methods and the assumptions; (2) you can develop an independent expectation and then corroborate it; and (3) you can look at subsequent transactions for corroboration. Generally, a lot of auditors will pick the first approach, he said.

Also of interest to valuation specialists would be the standards that apply when a firm engages an outside specialist. There are a few different standards depending on the different relationships the specialist has with the auditor. These will also be combined into one standard for all specialists. Both projects appear to be moving forward without much controversy, based on the comment letters received.

For more information: You can watch the full interview as part of the BVR webcast of the entire ASA Fair Value Conference. Go to sub.bvresources.com/bvstore/cd3.asp?pid=CD606. ◆

Ask the Experts

Q: *Do you consider liquidity discounts when valuing cryptocurrency?*

A: Arik Van Zandt and John Sawyer, who are both with Alvarez & Marsal, tackled this question during a recent webinar. Technically, if you want to dispose of cryptocurrency, you can go to an exchange, they pointed out. It does take a little while for the transaction to settle, but it can essentially be characterized as an over-the-counter-type market. You can think about the same discounts that may or may not be applied in that context and use that same framework in thinking about cryptocurrency. Be aware that there are a lot of less actively traded cryptocurrencies, so you are probably subject to some risk in those cases.

Source: Cryptocurrency—Price versus Value, BVR webinar, July 19, 2018. Available at sub.bvresources.com/bvstore/cd3.asp?pid=CD617.

Letter to the Editor: Comments on Adequate Sample Size 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 in this letter are from Mark Filler (Filler & Associates PA).*

In the April 2018 edition of *BVU*, you published a colloquy between Toby Tatum and Ron Rudich and Howard Lewis concerning, inter alia, the idea of adequate sample size. I think that both sides made points that could mislead your readers if they are unaware of certain statistical concepts that further explore and explain the arguments the authors bandied about.

The idea that needs further elucidation is that of the requirement to use a sample size of approximately 30. Mr. Tatum quotes a well-known textbook to support this assertion, but he doesn't tell us either the context of the quote, nor its meaning. The quote concerns itself with the central limit theorem, which says that, if the size of repeated samples taken from a population is large enough, the distribution of the averages of those samples will be approximately normal, regardless of the distribution of the population. For example, the distribution of the roll of one die is uniform, as each of the six sides has an equal chance of occurring each time we roll the die. But if we were to roll the die 30 times, and then compute the average of those 30 rolls, and then repeat the process 100 times, the sampling distribution of the 100 averages would be approximately normal. This is true even though the distribution of each of the 30 rolls, the samples themselves, is uniform, and remains so regardless of sample size. It's the sample averages that are approximately normal. By the way, so that you know where I am headed, substitute five rolls of the die for each sample instead of 30, and the sampling distribution of the mean will still be near-bell-shaped.

The average of the 100 sample averages will be equal to the population average, and the standard deviation of the 100 sample averages will be equal to the population standard deviation divided by the square root of the sample size. What is most amazing is that each sample average, if the sample size is large enough, will approximate the sampling distribution average, and the sample standard error, computed by dividing the sample standard deviation by the square root of the sample size, will approximate the standard deviation of the sampling distribution. What this means is that we have no need to draw more than one adequate sample to compute confidence intervals about a mean or do tests of hypothesis.

An obvious question is: How large should the sample size be in order for the central limit theorem to hold? A rule of thumb in place for years is that the central limit theorem will hold when the sample size is as least 30. However, one should not apply the rule blindly. If the population is heavily skewed, the sampling distribution of the average will still be skewed even if the sample size is greater than 30. On the other hand, if the population is symmetric, the central limit theorem holds for sample sizes less than 30. Let's take a look and see whether the sample size of 30 rule of thumb applies to either the total BIZCOMPS database or to the lawn maintenance SIC code subset.

Let's begin with the BIZCOMPS transaction database as a whole. But first we need to create some metrics to see whether the sampling distribution of the mean is approximately normal so as to conform to the central limit theorem. Since confidence intervals and hypothesis tests are robust as to non-normality, we do not need to attain perfectly normal distributions as measured by skewness and kurtosis values of zero. Therefore, if skewness and kurtosis lie between -0.5 and +0.5, we will assume the distribution is approximately normal. If skewness and kurtosis lie between -1 and +1, we will assume a near-bell-shaped distribution, the minimum requirement needed for confidence intervals and hypothesis testing. Any distribution with skewness and kurtosis beyond -1 and +1 will be rejected as nonconforming to the requirement of normality. Returning to the 12,767 transactions in the complete BIZCOMPS database referenced above, we note that this population's SP/SDE ratio is highly kurtic and skewed, with metrics of kurtosis and skewness of 643 and 21, respectively. With so much skewness and kurtosis, a sample size of 200 fails to produce even a near-bell-shaped sampling distribution of the mean with 1,000 samples, never mind a sample size of 30.

I next removed 73 transactions to bring the SP/SDE ratio down to less than 10, which reduced the total count to 12,694 transactions. Kurtosis and skewness remained very high, at 19.1 and 3.4, respectively. It took a sample size of 84 to get 1,000 samples to attain approximate normality, while a sample size of 15 produced a near-bell-shaped distribution for 1,000 samples.

Finally, I removed another 259 transaction to bring the SP/SDE ratio down to less than 6.45, which further reduced the total count to 12,435 transactions. Kurtosis and skewness remained high, at 2.0 and 1.2, respectively. In this case, it took only a sample size of eight to get 1,000 sample averages to attain approximate normality.

Turning now to the lawn maintenance SIC code subset, I began with 266 transactions but had to remove four transactions that had no SDE. The 262 remaining transactions had kurtosis and skewness values of 7.5 and 2.1, respectively, indicating that the database is neither approximately normal nor near-bell-shaped. It took a sample size of 83 to get 1,000 sample averages to be approximately normal and a sample size of 54 to get near-bell-shaped results.

I then removed nine transactions that were more than three standard deviations from the mean. This brought the total count down to 253 transactions, with kurtosis and skewness values of 0.12 and 0.57, respectively. With kurtosis and skewness values, this is low. We should not be surprised when a sample size of five produces approximately normal results for 1,000 sample averages.

Next, I took one each of the randomly chosen samples of size five and 10 from the population of

253 transactions and tested both of them for normality. They both passed as expected because, if the population is approximately normally distributed, then any sample of any size derived therefrom will also be approximately normally distributed.

As a final step, I searched the BIZCOMPS database for an SIC code number with a small number of data points. I selected the 16 transactions in SIC code number 1623, Construction—Utilities and then removed the necessary number of transactions to get skewness and kurtosis to between +1 and -1. I created 500 samples of size 10 for both price/revenue and price/SDE and then computed the sampling distribution of the mean. In both cases, the results were normally distributed. This implies that, even if the number of transactions chosen is relatively small, the central limit theorem will hold if certain requirements are met.

So much for the rule of thumb that says one needs a sample size of at least 30 for the central limit theorem to be invoked. Such a count is neither necessary nor sufficient. Like most things in life, it all depends—especially on how symmetric the population is. If you clean up your transaction database sample by removing the outliers and obvious errors, thereby getting your kurtosis and skewness values to be between -1 and +1, you can obtain good results with sample sizes of less than 10, as Ray Miles preached for years.

One more thought: Lest you think I am promoting the use of small samples, let me say that, ceteris paribus, larger samples are always the better choice. But they should not be too large—try not to exceed 400 observations as too large a sample tends to find differences of little practical significance in hypothesis testing. Small samples, too, have their problems, and the one most relevant to the use of a price/SDE multiple is the effect on the margin of error used to construct a confidence interval about the mean.

For example, with a mean multiple of 2.0, a standard deviation of 0.5, but sample sizes of 75 and 12, the margin of error for the larger sample is 0.113, or 5.66%, and, for the smaller sample, it is 0.283, or 14.14%. This makes the confidence interval about the mean multiple of 2.0 for the larger sample to run from 1.9 to 2.1 and for the smaller sample to run from 1.7 to 2.3. I think this is a spread that any valuation analyst could live with, demonstrating that the adequacy of a sample is determined not by its size but by the decisions one can make using it.

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Valuation Expert Gains Key Insights—By Buying a Small Business

Editor's note: This article is based on a chapter in What It's Worth: Valuing Paving Contractors, *which is available at bvresources.com/publications.*

When Courtney Sparks White decided to buy a company with her family, she brought a unique perspective to the deal. In addition to now being the owner of the company, she also is a partner at Blue Sky Business Valuation. While the company she bought was in the paving industry, the lessons learned also apply when evaluating firms in similar industries.

What to look at. Sparks White reflected on her experience buying the paving company, saying that, when the deal first came across her desk, she loved the financial aspect of it and the margins, as well as the customer base, including the longevity of some of the customers. Those personal experiences informed her viewpoint on how paving companies are sold, including the specific elements to be focused on as the transaction is valued and commenced.

The first thing to keep in mind is that men initially founded many paving companies coming to the market 30 to 35 years ago, maybe with help from their families. As those founders plan their retirement and exit the business, the companies are coming onto the market to be sold. As a result, it's critical to assess the actual value of the assets of the company and whether the founder has leveraged other people to build a salable asset or is just amassing goodwill from being a solo operator, Sparks White says.

In her case, one area she looked at was the volume of recurring customers and the amount of revenue produced from those accounts, the total customer base, and the location. "Let's say I'm looking at an apartment complex or the paving company has a relationship with a guy who owns a bunch of McDonald's or a bunch of gas stations," Sparks White says. "You can see how often their different properties have been paved because that's a longer cycle than some of the more maintenance-type aspects."

Sparks White points out that it is important to look at and realize the revenue and volume of activity from smaller projects that occur in between the paving jobs and the company's ability and success at doing that work. If the company is paving private lots, those lots will only need to be paved every few years, a timing impacted by factors that include how the customers want the lot to appear, the geographic location, the size of the lot, and the weather. However, the company Sparks White purchased also does seal coating, which allows for more touches with the customer because it occurs more regularly and is maintenance of the existing paving job.

Another important factor within the sales process is to consider the additional activities that accompany paving jobs. There are two things to consider, Sparks White says. First, does the company do that work in house or is it farmed out to subcontractors? Second, Sparks White says, if it is farmed out to subcontractors, does the seller have the relationships built with the subcontractors already?

Here's why that's important. Sparks White offers the hypothetical of a paving job for a grocery store parking lot. Other ancillary services will need to be completed, such as putting the line striping back down. If the paving company knows that it has the relationships with the subcontractors to ensure it can complete ancillary services on time, it becomes easier to factor that into the bidding process, Sparks White says.

Essentially, it adds confidence that the company can bid on more work and complete the work it currently has on time and on budget.

As a first-time buyer, it was important to Sparks White to know that those relationships were in place when she bought the paving company. As a second-time buyer, she would also consider the fact that she has an established set of relationships with her own subcontractors. In this instance, even if the seller were to have those relationships already built, she might simply opt to expand the volume of work for her existing subcontractors.

Seasonality and timing. Sparks White's paving company is located in Ohio, and the work season typically runs no longer than from early April to around Thanksgiving. For ease of completing the transaction, it's her experience that the sales transaction of a paving company is more likely to happen in the offseason. That makes it critical for the new operator to have the cash flow to continue to operate the business during the down period. While the expenses of a paving company scale downward during the nonwork period, there are always still some expenses, she points out. It was important to structure a deal to ensure cash flow continued.

One factor in this specific deal that made that aspect so important is that the paving company Sparks White bought owned its own facility, so there was a real estate consideration, including transfer of a mortgage obligation. That mortgage needed to continue to be paid during the nonwork period, Sparks White says.

Doing the transaction during the offseason also makes it easier to value and transfer existing agreements because work is not typically being done on those agreements during the time of the transaction.

Sparks White and the seller had a cutoff date and used that date to consider on which side of the transaction the accounts receivables would fall. She was fortunate that, geographically, the firm had a nonwork period. In a place such as Florida, for example, that might not necessarily be the case, which leads to another important consideration in the sales process: Essentially, the buyer and seller must assess how the firm is performing relative to its current bids if there is ongoing work and contractual obligations in place.

A bid on a job is essentially an estimate by the bidder that factors in its anticipated costs to complete the job, as well as a built-in profit margin for the job. Many companies use bid software for these bids, which factor in special circumstances such as weather delays, issues with subcontractors, and potential delays for things such as obtaining necessary permits and approvals. But these bids are ultimately just estimates, and, once the job begins, it is possible that the job will ultimately be performed for significantly less or significantly more than the bid amount. It's also possible there were very minor variances.

The buyer and seller must make a determination for how each contract in progress would be assessed. This is why it is easier to do these transactions during the offseason because there is a far lower impact and potentially no impact at all, Sparks White says. For example, in this instance, buyer and seller must assess how far along a contract has progressed, how much revenue has been realized, and how much expense has occurred. Factors to consider may include that a particular bid might have a higher upfront expense that has already been incurred against anticipated revenues that won't be realized until after ownership has transferred.

The opposite may be true: Revenues are ahead of expenses, and, following the completion of the ownership transfer, a contract may be expected to incur a higher percentage of cost against a lower relative percentage of revenue.

If the seller's bid process is flawed, this should also become apparent during the sale process by thorough vetting of the deals and deal patterns, Sparks White notes. It becomes important to evaluate the margins being realized on deals, she adds. For example, let's say the seller decides to lower the amount of the bids for certain jobs, essentially to win more contracted work ahead of a sale and make the company appear to be well-sourced with work. The buyer will likely not want to continue to do the volume of the work at the lower margins, which means that the bid amounts would eventually have to be increased, which could in turn affect whether or not the work is retained following the sale. So it's critical to thoroughly assess how the company is performing on its bid work, Sparks White says.

Equipment. As we noted earlier, one of the factors that impacted the sales process for Sparks White was that the company she bought owned its land and headquarters, which added a real estate component to the deal. That's not always the case, she points out—there are paving companies that may lease their headquarters or office facilities. But virtually all paving companies own equipment, she points out. In most cases, and in hers, the paving company owned all of its equipment and didn't have leases. That's a factor because buyer and seller must assess each piece of equipment in the deal, including cost and current value.

The buyer has to be thoughtful about the current state of the equipment. While valuation methods and resources are available to assess market value of owned equipment, depending on the age and state of the equipment, the buyer may need to have access to resources to upgrade equipment.

Deal structure. It's not unusual for paving companies to survive on the strength of a handful of large accounts, Sparks White says. The ability of the buyer to retain those accounts following the transaction is a critical factor in how the buyer values the business and the ability to be successful as an ongoing concern.

As solo operators or families start many paving companies, the transaction represents a key change in the relationships between the business and the customer. This is the provision discussed earlier—if the entire business is built on the goodwill between the original owner and customer, there is no guarantee that the new owner and key customers will establish the same level of rapport and that the company will be able to retain business following the transaction. In terms of how that impacts the actual transaction, Sparks White advises a deal structure that motivates the seller to want the established customer relationships to continue following the completion of the transaction.

"Make sure there are lots of conversations with the seller upfront, and structure the deal so that there's skin in the game for both parties," Sparks White says. "Maybe you structure it with a seller note, maybe you make the deal longer, maybe you can do some sort of earnout or employment agreement. There are lots of ways you can transfer those relationships, or at least hope to transfer those relationships. If that seller has a seller note, they're invested in the business continuing and doing well, so they want to make sure those relationships are transferred."

Sparks White is also very complimentary of the Small Business Administration (SBA) and its role in helping to finance her deal as a buyer. She suggests looking to the SBA as a financing source, as it is a government-backed program intended to help small-business entrepreneurs grow. ◆

September Tip From the Field

Check Nature of Business for State Tax Rate

When applying tax rates to a valuation analysis, state taxes are considered. But what if the subject business is in a state with no state income taxes? "Many companies do business in multiple states, and we use an average blended tax rate," says Chris Mercer (Mercer Capital). "If a company does business only in a nontaxable state, then a lower tax rate might well be justified. But the appraiser would have to justify that based on the nature of the business."

Source: EBITDA Single-Period Income Capitalization for Business Valuation, BVR webinar, June 28, 2018. Available at sub.bvresources.com/bvstore/cd3.asp?pid=CD616.

Work File Checklist for Contributory Asset Charges

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. Those without the CEIV credential will be expected to comply with the new requirements, which 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 contributory asset charges. Contributory assets are those tangible or intangible assets used in the generation of the cash flows associated with the subject intangible asset that is being valued. A contributory asset charge is a charge against revenues to reflect a fair return on or return of contributory assets used in the generation of the cash flows associated with the intangible asset being valued. Once determined, contributory asset charges are typically allocated based on revenues.

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 Contributory Asset Charges

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

- ☑ The identification of all the contributory assets required to support the subject intangible asset that is being valued. In addition, an explanation should be provided if an intangible or tangible asset was valued in the business combination analysis but not included as a contributory asset. The following specifics should be provided, along with rationales for their selection when appropriate:
  - ☑ Working capital:
    1. The appropriate market-participant level;
    2. The required rate of return; and
    3. The working capital charge and an explanation as to how it is calculated for each projected period.
  - ☑ Land:
    1. The appropriate market-participant level of land and its associated fair value;
    2. The required rate of return; and
    3. The land charge and an explanation as to how it is calculated for each projected period.

Checklist continues on next page.

☑ Fixed assets (not including land):

1. The appropriate market-participant level of fixed assets and the economic life for each fixed asset category;
2. The required rate of return;
3. The return *on* fixed asset charge and an explanation of how it was calculated for each projected period;
4. The return *of* fixed asset charge and an explanation of how it was calculated for each projected period (for example, as depreciation, amortization, or in the expense structure of the entity); and
5. Any practical expedient method used (for example, "smoothed" percentage of revenues).

☑ Intangible assets valued using the relief-from-royalty method:

1. The appropriate royalty rate; and
2. An explanation should be provided for instances:
   - When the royalty rate "charge" is different from the royalty rate used to estimate the fair value of the intangible asset such as a trademark or trade name; or
   - When an intangible asset such as a trademark or trade name is not valued but a royalty rate charge is still applied in the valuation analysis.

☑ Assembled workforce and other intangible assets:

1. The assumptions used to estimate the fair value of the assembled workforce and other intangible assets;
2. An exhibit showing the calculation of the value of the assembled workforce or other intangible assets;
3. The required rate of return; and
4. The intangible asset charge and an explanation as to how it was calculated.

☑ An explanation if the number of years the contributory asset charges applied is different from the economic life of the asset, and an explanation if the contributory asset charge varies from year to year.

Important: For any other special situations or assets, explain whatever considerations are used and document those considerations.

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).

BVU News and Trends

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

Regulators, Standard-Setters, VPOs

AICPA stands by ABV decision amid criticism

In a letter[1] to CPA/ABV holders, the AICPA says it has "carefully considered" the concerns about opening up the ABV credential to non-CPAs and that it stands by its decision to do so. A group of prominent CPA/ABVs had criticized the decision, and a survey was taken that found that the vast majority of respondents opposed the change.

The letter, signed by Susan S. Coffey, the AICPA's executive vice president of public practice, discussed the reasons and the need for the change. Addressing criticism that the decision process was not open and transparent, Coffey wrote that the AICPA will enhance the process going forward and is "looking at ways to better capture and assess broader input." The letter thanked ABV holders for their "passion, dedication and volunteer service" over the past 20 years and hoped that the community could look beyond the differences of opinion and work together to build the profession's future.

Shortly after the letter was posted, critics issued a detailed "forensic investigation and rebuttal" of an AICPA-prepared timeline of events leading up to the change, saying that it is inaccurate. The AICPA had previously revised the timeline and apologized for any confusion it may have caused. However, the critics still believe the timeline does not accurately reflect what happened during the decision process leading up to the vote to change the eligibility for the ABV. The timeline rebuttal, almost 4,000 words, is dated July 28, 2018, and was signed by 27 prominent CPA/ABVs who call for the AICPA to: (1) suspend the change to the ABV criteria; (2) consider input from stakeholders and have the Council revote; and (3) if the AICPA still wants to issue a valuation credential to non-CPAs, a second credential should be created separate from the ABV. A full version of the timeline rebuttal will appear in Jim Hitchner's journal *Financial Valuation and Litigation Expert* due out in early August.

1 aicpa.org/content/dam/aicpa/interestareas/forensicandvaluation/downloadabledocuments/aicpa-cpa-abv-letter-2018.pdf.

Treasury guidance on QBI deduction

U.S. Treasury Department rules outlining which pass-through entities can claim the new 20% qualified business income (QBI) tax deduction are being eagerly awaited but still not issued at the time of this writing. New IRC Code Section 199a allows a 20% write-off of QBI for sole proprietors, owners of S corporations, and members of partnerships/LLCs. But Section 199a is 22 pages long with about 20 defined terms, dozens of cross-references within the new section and to other sections, and complicated computations. The long-awaited guidance will hopefully clarify things because many firms aren't sure whether they qualify.

Tax Reform 2.0 in the works

Republicans from the House Ways and Means Committee released a very top-level outline[2] of their plans for what they call "Tax Reform 2.0." The plan has three main parts: (1) It would make permanent many of provisions that had been set to eventually expire in 2026 (but the outline does not specify which ones); (2) it will have several provisions to promote family savings; and (3) it will allow new businesses to write off more of their startup costs and "remove barriers to growth."

Methods and Approaches

Insights into the valuation of cryptocurrency

A big crowd was treated to a fascinating presentation[3] on cryptocurrency by Arik Van Zandt and John Sawyer, who are both with Alvarez & Marsal's Seattle office. Here are a few takeaways:

- There are thousands of different virtual currency mechanisms, known as "tokens";
- Initial coin offering tokens are very different than equity securities startups issue;
- Tokens are traded on exchanges throughout the world, which can be volatile and subject to manipulation due to lack of regulatory oversight; and

2 waysandmeansforms.house.gov/uploadedfiles/tax_reform_2.0_house_gop_listening_session_framework_.pdf.

3 sub.bvresources.com/pastevents.asp.

- To value cryptocurrency, look to a relevant exchange and one that has a good amount of trading volume.

Half of the audience had no knowledge of cryptocurrency and only one in 10 had ever valued it, according to a poll taken during the presentation.

Valuation Data

New *DealStats* platform is now live!

BVR has officially launched *DealStats,* which merges *Pratt's Stats* and *Public Stats* transactions into one powerful platform with state-of-the-art search capabilities, additional data fields, easier saving and report generation, and much more. Current subscribers to *Pratt's Stats* will automatically get access to *DealStats*.

One of the beta testers was Lance Schmidt, CVA, CBI, CBB, former CPA, president of National Business Appraisers Inc., and a valuation instructor with the California Association of Business Brokers (CABB). "The new platform is a valuation analyst's and statistician's dream," he says. "The added conditional 'and/or' capabilities are a boon to those who use *DealStats.* The slide bar (or the use of beginning and end amounts or values for revenues, EBITDA, etc.) saves major time in refining a search."

The *DealStats* web page[4] has more information, a companion guide, videos, and FAQs.

Research Papers, Studies, Reports

Trade war may shift use of tax cut's windfall

The extra cash flow companies will see from the Tax Cuts and Jobs Act will affect valuation depending on how the funds will be used. Some reports said companies would use the windfall for capital investment in both core and new businesses as well as R&D. But the escalating trade war may change that. A report[5] from Reuters says that the trade war between the United States and China may prompt U.S. companies to shift money they had earmarked for capital expenditures into stock buybacks instead, pushing record levels of corporate share repurchases even higher.

4 bvresources.com/learn/dealstats.

5 reuters.com/article/us-usa-funds-buybacks-analysis/trade-war-may-steer-tax-cuts-windfall-to-even-more-buybacks-idUSKBN1K22KH.

Improving fair value audits

Auditor experience—not guidance from regulators—will lead to higher audit quality of fair value measurements, according to a new paper, "Auditor Fair Value Expertise."[6] Researchers examined fair value-related restatements and comment letters to see what can be done about PCAOB inspections that repeatedly uncover deficiencies in audits of fair value estimates. The paper's authors are professors/assistant professors at Northeastern University and Bentley University.

Valuation of power plants

A paper[7] published in the *European Journal of Operational Research* examines the valuation of renewable, conventional, and storage power plants. The paper's authors, who are with the Department of Mathematical Sciences at the University of Copenhagen, include a case study that quantifies the impact of changes in market dynamics on plant values.

Agita at casual dining chains

A *Wall Street Journal* article[8] reveals that many larger casual-dining spots are struggling and, with many under new management, reinventing themselves in order to compete. While this shows promise, more restaurant closures are likely before the sector can fully regain health, according to Josh Benn (Duff & Phelps), who is quoted in the article. By the way, "D&P's Restaurant Quarterly Update—Summer 2018"[9] is now available.

Cost of capital for banks

A new paper[10] analyzes the cost of capital for banks during the financial crisis and in relation to the Dodd-Frank Act and Graham-Leach-Bliley Act. "We find some evidence that stress testing has lowered the cost of capital for the largest stress-tested banks, although not for those added more recently to stress testing," say the authors, who are with the Federal Reserve. The paper is titled "Regulatory Changes and the Cost of Capital for Banks."

6 papers.ssrn.com/sol3/papers.cfm?abstract_id=3192536.

7 sciencedirect.com/science/article/abs/pii/S0377221717309657#!.

8 wsj.com/articles/casual-dining-chains-step-up-to-the-plate-1530619201?mod=mhp.

9 duffandphelps.com/insights/publications/m-and-a/restaurant-quarterly-update-summer-2018.

10 papers.ssrn.com/sol3/papers.cfm?abstract_id=3199941.

Small biz not keen on growth prospects

Although profitability and borrowing success rates are up for small businesses (less than $5 million in revenue), this has not led to increased expectations for business performance or growth, according to the Q2 2018 Private Capital Access Index[11] (PCA Index) from Pepperdine Graziadio Business School and Dun & Bradstreet. Only 27% of businesses expect to perform substantially better than last year, a 23% drop from 35% in Q1 2018, and a 25% year-over-year drop from 36% in Q2 2017. Similarly, only 42% of businesses are confident they will grow this year, down from 47% in Q1 2018 and down 12.5% from 48% in Q2 2017.

New Books, Guides, Publications

New edition of essential guide to damages

The latest thinking on economic damages is in the new 5th edition of *The Comprehensive Guide to Lost Profits and Other Commercial Damages,*[12] edited by Nancy J. Fannon (Marcum) and Jonathan Dunitz, Esq. (Verrill Dana). The two-volume guide blends the financial expert's knowledge of accepted methods and procedures with the attorney's knowledge of legal issues and insights to provide a unique and in-depth analysis and interpretation of the continually expanding body of case law.

Greatly expanded: This new edition is seriously expanded from the last one, with seven new chapters in Volume One, such as theft of trade secrets, apportionment, and damages in cases involving rights of publicity and for franchises. In Volume Two on case law, 100 additional court cases have been added and analyzed. In addition, previous chapters have been revised and updated. In total, this new edition has a total of 43 chapters and over 300 court case digests.

Market research for the cannabis industry

Business appraisers who are valuing firms in the cannabis industry have a new resource for market research: *The State of Legal Marijuana Markets,*[13] which is published by ArcView. There's a discount for BVR customers, so, if you use the discount code "BVR100," you will receive a $100 discount.

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

12 bvresources.com/publications.

13 bvresources.com/products/the-state-of-legal-marijuana-markets-6th-edition.

Willamette's summer issue of *Insights*

The Summer 2018 issue of *Insights*[14] from Willamette Management Associates is titled "Thought Leadership in Intangible Asset Valuation, Damages, and Transfer Price Analyses" and is edited by Scott R. Miller. Here's a sampling of the articles: "A Primer on the Fundamental Elements of Economic Damages Analysis" (Fady F. Bebawy), "Application of the Cost Approach to Value Internally Developed Computer Software" (Connor J. Thurman), "Estimating Trademark Royalty Rates for Intercompany Transfer Price Analyses" (John C. Ramirez and Casey D. Karlsen), and "Applications of the Asset-Based Business Valuation Approach" (Robert F. Reilly).

14 willamette.com/insights/summer2018.html.

What's New on BVResearch Pro

Every month, BVR adds new content to BVResearch Pro, the most comprehensive library of business valuation content available anywhere. Here are some highlights of what has been added this month:

Books, Reports, Transcripts

- *What It's Worth: Valuing Paving Contractors;*
- Healthcare Valuation: Approaches to Value and Common Pitfalls (webinar transcript); and
- What the IRS Looks for in a Business Valuation Report (webinar transcript).

Legal Research

- *Jimenez v. Jimenez,* 2018 Ariz. App. Unpub. LEXIS 442 (March 22, 2018) (Marital—goodwill);
- *Wiegers v. Richards-Wiegers,* 2018 Alas. LEXIS 63 (May 11, 2018) (Marital—asset approach); and
- *Verition Partners Master Fund Ltd. v. Aruba Networks, Inc.,* 2018 Del. Ch. LEXIS 160 (May 21, 2018) *(Aruba II)* (Fair value).

This new content joins over 10,000 other articles, publications, legal digests, webinar transcripts, white papers, and more from the world's foremost thought leaders in business valuation. Not a subscriber? Go to bvresources.com/products/bvresearch for details.

Global *BVU* News and Trends

Business valuation news from a global perspective.

Regulators, Standard-Setters, VPOs

Comment period re: IVS 2017 revisions

The consultation process for proposed revisions to IVS 2017 is now open, and you can download a copy of the consultation document.[1] The International Valuation Standards Council (IVSC) is committed to a fully open and collaborative consultation process, and all comments received will be published (unattributed) on the IVSC website. The deadline for comments is October 16, and you should email comments to aaronsohn@ivsc.org, File Reference IVS 2017 Proposed Revisions.

Two major conferences in Romania

There are two major upcoming events for the international community of valuers in collaboration with the World Association of Valuation Organizations (WAVO) and the International Valuation Standards Council (IVSC). The 9th World Association of Valuation Organizations Congress[2] will be held September 6 in Bucharest, Romania. This year's congress is about ethics in the valuation profession. The IVSC-ANEVAR European Valuation Conference "Business Valuation in a Globalized World"[3] will be held on September 7, also in Bucharest, Romania. The event will feature presentations from leaders in the valuation profession.

Dates set for 2019 New Zealand conference

Business and machinery valuers will come together Sept. 8-11, 2019, in New Zealand for next year's international valuation conference. The International Conference on the Valuation of Plant, Machinery and Equipment (ICVMPE) conference, which began more than 20 years ago as primarily a plant and machinery event, has gradually evolved into a unique meeting place for the world's leading business valuation and plant and machinery experts. Agenda and registration details will be forthcoming. Are you interested in presenting at this conference? Contact conference organizer Richard Berkemeier at richardberkemeier@gmail.com. The conference is supported by IVSC, ASA, China Appraisal Society, and many other national and international valuation organizations. *Business Valuation Review* and *MTS Journal* are the conference media partners.

1 ivsc.org/files/file/view/id/1173.

2 site.anevar.ro/pagini/9th-wavo-congress-ethics-valuation-profession-september-6-2018.

3 site.anevar.ro/pagini/september-7-2018-ivsc-anevar-european-valuation-conference-business-valuation-globalised.

Research Papers, Studies, Data

Global industry betas for 2Q2018

Salvidio & Partners, a Rome, Italy-based business valuation firm headed by Ascanio Salvidio, produces a quarterly report on levered and unlevered industry betas for 134 industries and "regional" betas for 10 geographical areas (including North America, the EU, and Western Europe). Its *Industry Betas* report for the second quarter of 2018 is now available as a complimentary download.[4]

Country Views

Valuation of a Polish e-biz trademark

Grant Thornton of Poland was retained to value the trademark of Fachowcy.pl Ventures S.A., a company listed in Poland engaged in website creation, online advertising, and internet hosting services. The valuation was performed as of June 30, 2017, to support the issuance of a bond. The valuation report,[5] published in the IR section of Fachowcy's website, shows that the relief from royalty method was used, seven directly comparable cases from the MARKABLES database were selected, and a royalty rate of 4.76% was decided upon. MARKABLES[6] is a Switzerland firm that has a database of over 10,000 global trademark valuations published in financial reporting documents of listed companies. By the way, the Fachowcy valuation report is in Polish.

4 sub.bvresources.com/download.asp?DownloadID=1064.

5 ir.fachowcy.pl/static/1213/service/Fachowcy RAP wycena ZT 2017 11 03 OST (3).PDF.

6 markables.net.

BVLAW CASE UPDATE

Featured Case

Claims Against Third-Party Appraisal Crumple Under 'Palpable Error' Standard

***Olli Salumeria Americana, LLC v. Vosmik*,**
2018 Va. Cir. LEXIS 72 (Jan. 5, 2018)

A Virginia case in which the company contested the buyout value a third-party appraiser determined based on an operating agreement shows the high bar the challenger has to clear to make the court invalidate the appraisal. The buyer (company) alleged the appraisal included a number of "palpable" errors, but the court was not persuaded. The decision emphasizes the court's limited role of review and also shows how the highly experienced trial experts who spoke to the soundness of the contested appraisal fit into the picture. Finally, the case makes clear how important it is for the original appraiser to be available at trial. His testimony here helped convince the court that the alleged errors were instances in which the appraiser properly used his professional judgment.

Operating agreement controls. Olli Salumeria, a limited liability company in Virginia, made and sold artisanal slow-cured meats inspired by one of the co-founder's family recipes. In 2010, when the two founders formed the company, they each owned an equal share. Two years later, they executed an amended operating agreement and one of the co-founders bought an additional 1% interest in the company. Under the contract, the 49% shareholder (defendant/seller) had a put right that enabled him to make the company buy his ownership interest. He opted to sell his stake in 2016.

The operating agreement provided that the defendant would be entitled to the greater of $3.75 million or "such amount as is determined by multiplying the percentage which the put notice units bear to all units outstanding as of the date of the put notice, times the Enterprise Value" of the company. The agreement required a value determination by an appraisal company. Eventually, Cornerstone Valuations was selected to do the appraisal. In October 2016 and November 2016, Cornerstone issued two draft reports for review and comments by the parties. Cornerstone responded to feedback from the company. Cornerstone's final report valued the company at $41 million, but, whereas the defendant accepted the valuation, the company sued in state court. The complaint asked the court to set aside the appraisal because Cornerstone's valuation included numerous "palpable errors."

Both parties retained experienced business valuators to testify to the alleged errors in the underlying appraisal. Neither expert performed an independent valuation of the company. Further, the court heard testimony from Cornerstone's appraiser and from the defendant, an experienced business investor.

'Palpable error' standard. At the outset, the court explained that, if a valuation contract exists, it is not the court's role to substitute its judgment for that of the appraiser or decide which testifying expert was correct. In the instant case, the court's responsibility was to determine whether Cornerstone, the appraiser, understood and executed the provisions of the valuation contract, i.e., the operating agreement.

Moreover, under applicable Virginia law, a court may only set aside a valuation for "errors apparent on its face, misconduct on the part of the [valuators], some palpable mistake or fraud in one of the parties." The court noted that the palpable error standard applicable in Virginia aligned with the approach courts in other states have taken. Assuming there is an agreement in place, these courts typically have reviewed the contested appraisal for fraud, bad faith, mistake, or failure to complete the appraisal according to the terms of the agreement.

The court cited a 2011 case, *Dawyot v. Catawba Capital Mgmt., Inc.,* 2011 Va. Cir. LEXIS 47 (April 28, 2011) (available soon at *BVLaw*), in which the court found the third-party appraiser had committed a palpable error by failing to take into account the benefits and federally mandated taxes when he normalized earnings. The court in *Dawyot* noted that "a palpable error that may be set aside by a trial court is one that is obvious and easily perceptible and of such nature as to induce a belief that it proceeded from improper bias or from some gross misbehavior or inattention." In contrast, "[e]rrors of judgment, fairly exercised do not constitute palpable mistakes." Although the controlling agreement in *Dawyot* expressly said the appraised value was to be binding and conclusive, the court found the error was apparent on the face of the expert report and invalidated the appraisal. Importantly, the appraiser in the *Dawyot* case did not testify. This meant the court did not obtain a firsthand explanation as to why the appraiser did what the face of the appraisal report showed he did.

Three types of errors. The alleged errors in the instant case fell into three categories. The plaintiff claimed Cornerstone misinterpreted the operating agreement, acted out of bias, and committed numerous errors of commission and omission.

Misinterpretation of operating agreement. A flashpoint was language in the operating agreement that required the appraiser to determine the "enterprise value" of the company. Further, the agreement defined "enterprise value" as "the fair market value of the Company as a going concern."

The company claimed Cornerstone misinterpreted the agreement. The issue was to determine the value of the put units, the plaintiff argued. The appraiser should have determined the company's equity value and deducted the value of the company's debt for its valuation. Both parties' trial experts, as well as the Cornerstone appraiser, agreed that they had never seen a provision addressing the valuation of a shareholder's interest that called for the use of enterprise value rather than equity value. The plaintiff maintained that "fair market value of the company as a going concern" meant the equity interest of the company.

The court said it was bound by the words in the operating agreement. The words were "enterprise value." According to the court, the plaintiff failed to show that the industry considered enterprise value and equity value to be interchangeable. Further, the defense was able to show that there was no one prevailing definition of enterprise value among valuation professionals and that, in a different setting, the plaintiff's expert had accepted the definition of "enterprise value" Cornerstone applied here. Accordingly, Cornerstone's interpretation of the operating agreement was not a palpable error but a "fair and reasonable exercise of business judgment," the court concluded.

Bias allegations. The plaintiff also maintained there was evidence that Cornerstone was biased in favor of the defendant. For one, Cornerstone made changes to its report that the plaintiff did not request during the drafting process. By changing the discount rate and growth rate, Cornerstone allegedly tried to justify a predetermined value that was advantageous to the defendant.

The court noted the operating agreement did not say the appraiser was only entitled to make the changes the parties proposed. Moreover, at trial, Cornerstone's appraiser explained he made the unrequested changes to correct errors he had discovered in his draft. He said that failing to do so would be a violation of his standards of professionalism and would negate the purpose for which Cornerstone was hired, which was to perform the most accurate valuation of the company. The court found the changes were instances in which the appraiser properly exercised its business judgment.

To show bias, the plaintiff also pointed to email exchanges between Cornerstone and the defendant that took place outside the presence of the company. One set of emails suggested Cornerstone was pursuing a business relationship with the defendant, the plaintiff alleged. However, the court noted that Cornerstone and the defendant exchanged the emails after Cornerstone had concluded the appraisal drafting process. Also, the defendant's response emails showed that he declined to engage in the relationship at that time, the court noted. Those emails did not justify vacating the appraisal, the court said.

Another set of emails concerned messages from the defendant to Cornerstone, in which he was highly critical of the company's response to Cornerstone's first draft. The court noted, however, that Cornerstone responded in a way that suggested it actually agreed with some of the company's points by saying the revisions amounted to "a better reflection of my work." The court noted that the company in fact became informed of all of the information in the ex parte emails before Cornerstone released its final report. There was no evidence that the information in the ex parte emails affected Cornerstone's valuation, the court concluded.

Errors of omission and commission. The plaintiff also alleged a number of errors of commission and omission. It claimed Cornerstone, using the income approach, incorrectly determined the cost of goods sold, the cost of selling, and the company's general and administrative expenses. Cornerstone allegedly used an incorrect estimate of capital expenditures. And it erred under the guideline public company method by selecting noncomparable companies and multiples and under the guideline transaction method by selecting noncomparable transactions and multiples.

After hearing from Cornerstone's appraiser, the court found none of these examples rose to the level of palpable error. The appraiser was able to explain the reasoning behind the choices Cornerstone had made and consequently show that Cornerstone "fairly and reasonably exercised its business judgment." The court noted that the operating agreement did not specify which methodologies Cornerstone had to use or which factors it had to consider in the valuation. Therefore, the court would not second-guess Cornerstone's decisions. According to the court: "Where a valuation agreement is silent as to the methodology to be employed, and the appraiser selects a certain methodology consistent with his professional experience as an appraiser, the court will not second-guess that selection."

One alleged palpable error that attracted some attention concerned the appraiser's treatment of historical net operating loss. However, the court noted that the company did not raise this issue with Cornerstone during the drafting process. Therefore, Cornerstone never had an opportunity to explain its reasoning. The plaintiff's expert only identified this issue after Cornerstone had issued its final report and after litigation had started, the court said. Consequently, the error did not meet the requirement of being "apparent," "obvious," or "easily perceptible" on the face of the report.

The court noted that the facts in the instant case were different from those in the *Dawyot* case in which the palpable error had been brought to the appraiser's attention before he issued the final report. However, he did not make corrections or change the report. Because the appraiser did not testify at trial, the court in *Dawyot* was left guessing as to the appraiser's reasons for not correcting the claimed error.

In addition, the court in the instant case pointed out that the challenger's trial expert in *Dawyot* had performed an independent appraisal that showed the alleged error was material, resulting in a difference of $2 million. Here, however, neither of the parties' trial experts conducted his own appraisal.

The court in the instant case concluded the plaintiff was unable to show that any of the alleged errors were material or "so obvious and easily perceptible so as to conclude that they must have been done by gross inattention." Accordingly, the court refused to set aside the contested appraisal and dismissed the plaintiff's complaint. ◆

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 *BVLaw*

Case Name/ Full Citation	Experts	Case Type	State/ Jurisdiction	Digest Summary
Olli Salumeria Americana, LLC v. Vosmik 2018 Va. Cir. LEXIS 72 (Jan. 5, 2018)	Harold G. Martin (plaintiff); Brian Burns (defendant); Cornerstone Valuations (third-party appraiser)	Buy/Sell Agreement	Virginia	In buyout dispute, court rejects plaintiff's request to set aside third-party appraisal performed pursuant to valuation agreement; court notes its limited role and high "palpable error" standard; alleged mistakes were not apparent on face of appraisal and there was no misconduct by appraiser.
Wall v. Bryan 2018 La. App. LEXIS 1257 (June 27, 2018)	Benjamin C. Woods (plaintiff); Stuart Neiberg (defendants)	Buy/Sell Agreement	Louisiana	Appeals court supports trial court's decision to value departing member's minority interest on fair market value basis pursuant to state statute rather than method specified in some existing corporate documents; appeals court affirms lower court's discretion to apply post-*Cannon* discounts.
Rohling v. Rohling 2018 Ala. Civ. App. LEXIS 94 (June 1, 2018)	None (husband); Jeremy Blackburn (wife)	Marital Dissolution/ Divorce	Alabama	Appeals court rejects claim that expert's value determination pursuant to a calculation engagement rather than a valuation engagement was unreliable; trial court properly considered limitations inherent in a calculation engagement when crediting expert's value estimate, appeals court says.
Zaffarkhan v. Domesek 2018 Cal. App. Unpublished LEXIS 3559 (May 18, 2018)	Unknown (plaintiff); none (defendants)	Economic Damages and Lost Profits	California	Appeals court upholds zero damages finding in dispute involving short-lived software startup, where plaintiff's expert had no experience valuing software companies, misapprehended basic facts, and developed multimillion-dollar valuations for a company with no product, no revenue, and no investors.
Athlon Sports Communications, Inc. v. Duggan (Athlon II) 2018 Tenn. LEXIS 310 (June 8, 2018)	Michael Collins (plaintiff); Jaime C. d'Almeida (defendants)	Dissenting Shareholder	Tennessee	Court overrules precedent requiring exclusive use of Delaware block method to determine fair value in dissenting shareholder cases; trial courts may use other, more "modern" methods, including forward-looking DCF analysis, state high court says and remands for reevaluation of earlier ruling.

BVR TRAINING EVENTS

To register for any of our events, or for more information, visit bvresources.com/training or call 503-479-8200. For subscription access to BVR events, please visit bvresources.com/passport.

Calculation Engagements: Risks, Rewards and New Guidance
September 6, 10:00 a.m.-11:40 a.m. PT/1:00 p.m.-2:40 p.m. ET
Featuring: R. James Alerding (Alerding Consulting, LLC)

Veterinary Practices: Unleashing Value
September 26, 10:00 a.m.-11:40 a.m. PT/1:00 p.m.-2:40 p.m. ET
Featuring: Mary Beth Koester (Rea & Associates)

Heavy Construction Companies: Government Contracts, Damages and Valuation
September 27, 10:00 a.m.-11:40 a.m. PT/1:00 p.m.-2:40 p.m. ET
Featuring: James O'Brien (MPI) and Roy Meyers (MPI)

Agree to Disagree: Perils of Bias in Valuation
October 4, 10:00 a.m.-11:40 a.m. PT/1:00 p.m.-2:40 p.m. ET
Featuring Marc Bello (Edelstein & Co.) and Courtney Sparks White (Blue Sky Business Valuation)

How to Value Equity and Debt Securities Using Advanced Lattice Modeling
Part of Special Series on Advanced Modeling and Methodologies
October 25, 10:00 a.m.-11:40 a.m. PT/1:00 p.m.-2:40 p.m. ET
Featuring: John Sawyer (Alvarez & Marsal) and David Dufendach (Alvarez & Marsal)

Valuing Residential and Commercial Builders
October 30, 10:00 a.m.-11:40 a.m. PT/1:00 p.m.-2:40 p.m. ET
Featuring: Pasquale Rafanelli (Grassi & Co.)

CALENDAR

ANEVAR 9th WAVO Congress: Ethics in Valuation Profession
September 6
Bucharest, Romania
www.ivsc.org

IVSC-ANEVAR European Valuation Conference
September 7
Bucharest, Romania
www.ivsc.org

CM&AA Certification
September 24-28
Chicago, IL
www.amaaonline.com

Valuation Expo
September 30-October 3
Las Vegas, NV
www.ivsc.org

2018 Advanced BV Conference
October 7-10
Anaheim, CA
www.appraisers.org

2018 International Appraisers Conference
October 7-10
Anaheim, CA
www.appraisers.org

CM&AA Certification
October 22-26
Malibu, CA
www.amaaonline.com

AICPA Auto Dealership Conference
October 25-26
Orlando, FL
www.aicpa.org

NACVA Financial Consultants' Accelerated Training Institute
October 29-November 3
Chicago, IL
www.nacva.com

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

BUSINESS VALUATION DATA SPOTLIGHT

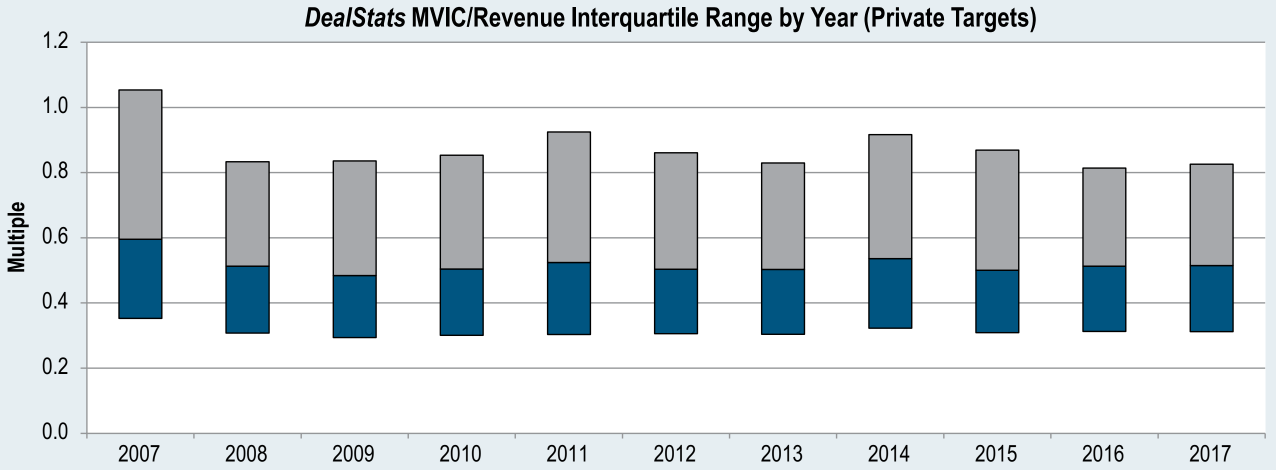
Stout Restricted Stock Study and DLOM Calculator

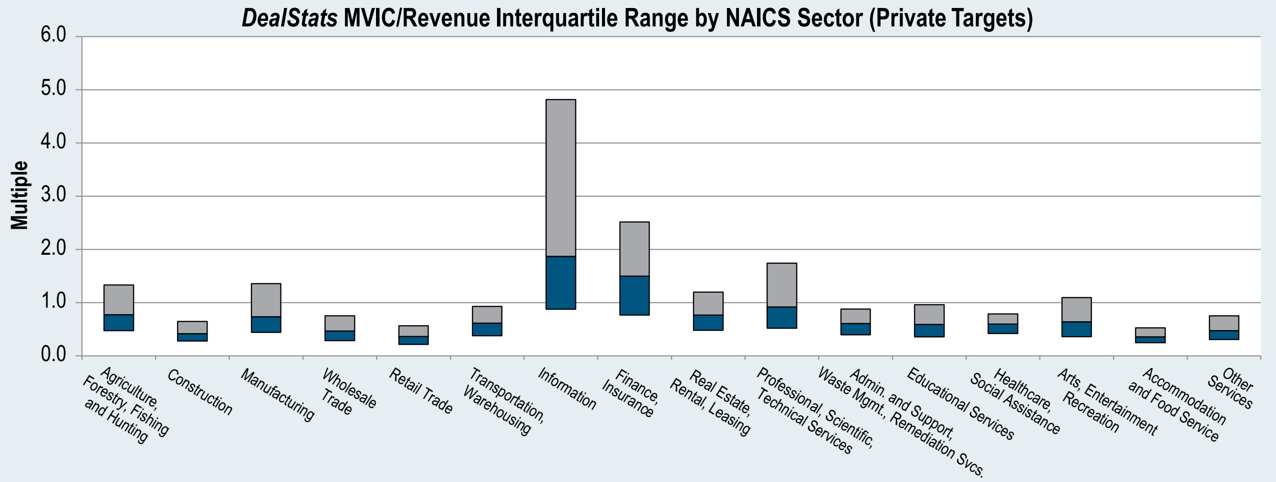
Comparison of Financial Characteristics (*In Millions of U.S. Dollars*)					
	Quintile				
	1	2	3	4	5
Discount					
Low	0.0%	7.4%	12.9%	20.5%	33.4%
High	7.4%	12.8%	20.2%	33.3%	91.3%
Median	4.0%	9.9%	15.8%	26.1%	43.2%
Company Characteristics (Median Statistics)					
Market value	191.2	201.3	121.5	107.5	58.9
Revenues	32.6	43.2	21.7	19.9	8.7
Total assets	117.6	88.0	39.8	24.0	11.6
Book value of equity	50.4	43.2	22.3	13.4	6.7
MTB ratio	2.6	3.3	3.6	5.8	6.1
Net income	-4.7	-2.3	-2.8	-4.9	-2.6
Net profit margin	-6.6%	-5.4%	-6.3%	-23.9%	-38.7%
Volatility	64.0%	65.7%	73.0%	81.4%	104.0%
VIX	17.8	17.3	17.3	18.3	21.3

Note–Transactions are sorted by discount with all statistics adjusted for inflation as of January 2018.

Business Valuation Resources, LLC (BVR) updates the Stout Restricted Stock Study and DLOM Calculator quarterly. Visit BVResources.com/Stout or call 503-479-8200, ext. 2. ◆

MVIC/Revenue Trends





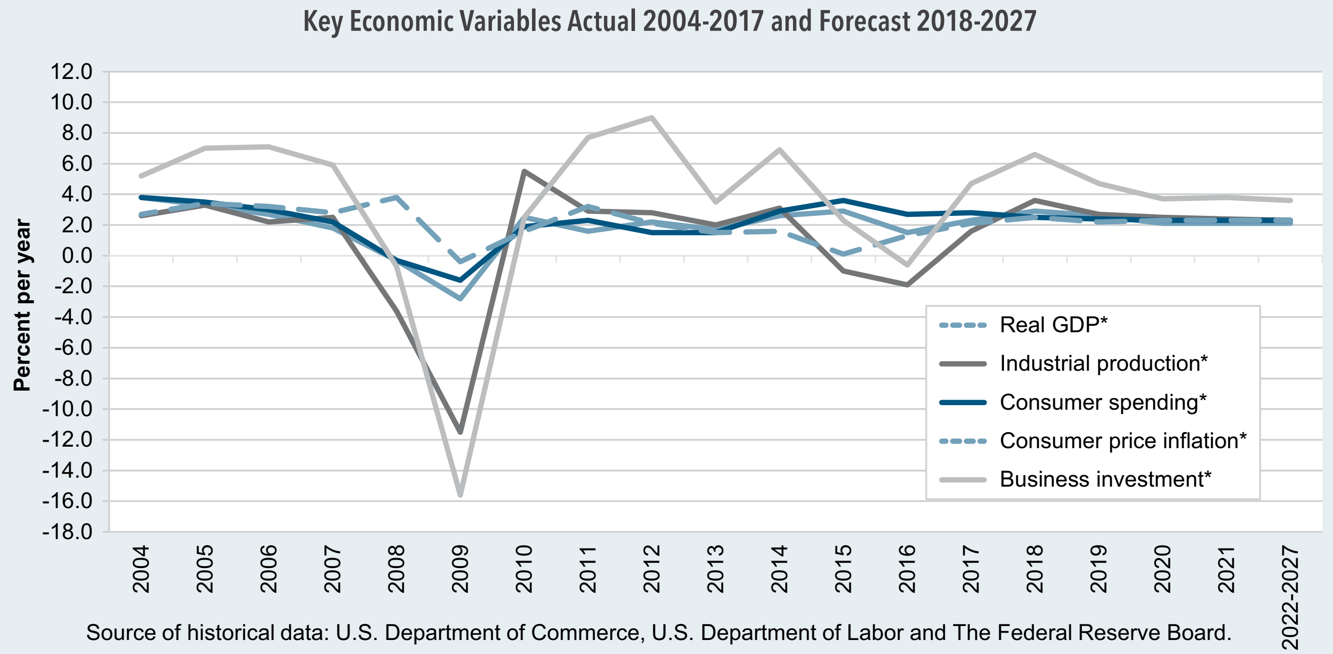
Note: The interquartile range describes the middle 50% of observations. The top of the grey rectangle indicates the 75th percentile, the bottom of the blue rectangle indicates the 25th percentile. The line where the two rectangles meet represents the median. If the interquartile range is large, it means that the middle 50% of observations are spaced wide apart, and, if the interquartile range is narrow, it means the middle 50% of observations are spaced close together.

The graphs above display the interquartile range of the MVIC/revenue multiple by major NAICS sector and by year in *DealStats* (formerly *Pratt's Stats*) for private targets.[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.

DealStats is a private- and public-company transaction database, which provides financial details on over 34,000 acquired businesses. Business appraisers, financial advisors, investment bankers, M&A professionals, and business owners use *DealStats* as a comparable transaction data source for sold businesses across all industry sectors. A subscription to *DealStats* comes with free access to the *DealStats Value Index*, a quarterly publication, which analyzes *DealStats* data trends in selling prices, valuations multiples, and profit margins. To learn more, visit bvresources.com/dealstats. ◆

1 In *DealStats*, 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. *DealStats* is available from Business Valuation Resources, LLC (BVR). Visit BVResources.com/DealStats or call 503-479-8200, ext. 2.

Economic Outlook for the Month



Source of historical data: U.S. Department of Commerce, U.S. Department of Labor and The Federal Reserve Board.
Source of forecasts: Consensus Forecasts.

*Numbers are based on percent change from preceding period. Consumer price inflation information is annual averages.

Quarterly Forecasts 3Q 2018-1Q 2019 and Annual Forecast 2018-2019

	Quarterly			Annual			
	3Q 2018	4Q 2018	1Q 2019	2018	*(prior forecast)*	2019	*(prior forecast)*
Real GDP*	3.0	2.8	2.5	2.9	*2.9*	2.6	*2.6*
Consumer spending*	2.7	2.5	2.3	2.5	*2.6*	2.4	*2.4*
Business investment*	5.4	5.1	4.6	6.6	*6.2*	4.7	*4.7*
Consumer price inflation*	2.5	2.1	2.0	2.5	*2.5*	2.2	*2.2*
Real disposable personal income*	2.5	2.9	3.1	2.4	*2.4*	2.7	*2.8*
Unemployment rate	3.8	3.7	3.6	3.9	*3.9*	3.5	*3.5*
Industrial production*	3.1	2.9	2.6	3.6	*3.6*	2.7	*2.7*

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

This section is an excerpt from BVR's *Economic Outlook Update* (*EOU*)[1]. 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.

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September 2018 Cost of Capital Center

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

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

Source: Duff & Phelps Cost of Capital Navigator, Risk Premium Report Study[4]

	Using the Historical Equity Risk Premium, Spot Rf[5]	Using the Supply-Side Equity Risk Premium, Spot Rf[5]	Using the Duff & Phelps Conditional ERP & Normalized Rf[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 yields[7]	
30-day:	1.93%
5-year:	2.87%
20-year:	3.07%
Prime lending rate:[7]	5.00%
Dow Jones 20-bond yield:[8]	3.93%
Barron's intermediate-grade bonds:[8]	4.88%
Dow Jones Industrials P/E ratios:[8] (Represents median figures)	
On current earnings:	23.3
On 2018 operating earnings est.:	15.9
On 2019 operating earnings est.:	14.6
High yield estimate:[9]	
Mean:	5.4%
Median:	4.7%
Long-term inflation estimate:[10]	2.28%
Long-term rate of growth GDP:[10]	2.20%

BVR's Private Company Cost of Capital Index[11] (2Q 2018)

Company Revenue ($thousands)	Cost of Capital
1,000	18.8%
5,000	17.1%
10,000	15.4%
15,000	14.4%

1 R_f = Risk-free rate

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

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

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

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, August 1, 2018.

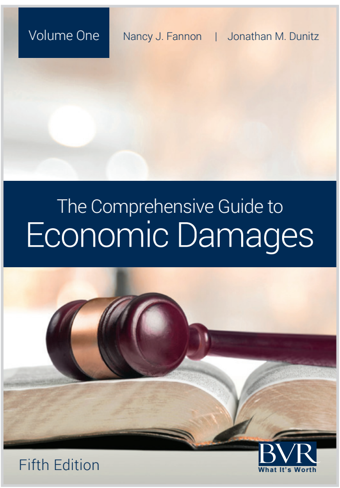
8 Barron's, July 30, 2018.

9 finra.org, August 2, 2018.

10 10-year forecast; Federal Reserve Bank of Philadelphia, Livingston Survey, June 15, 2018.

11 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 *DealStats* data and Dohmeyer, Burkert, Butler and Tatum's Implied Private Company Pricing Line (IPCPL). See the IPCPL page at bvresources.com/ipcpl.

Much expanded guide is about financial evidence: How to gather it, interpret it, and tell its story



Nancy Fannon
Jonathan Dunitz

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