

The Fair Value Valuation of Intangible Assets for Acquisition Accounting Controversy Purposes – Part 3

In the last issue of *FVLE*, Part 2 of this article presented illustrative examples of typical income approach and cost approach intangible asset fair value valuations. In the prior issue, Part 1 summarized many of the forensic analyst's considerations in a review of the acquisition accounting intangible asset valuation. Part 3 of this article presents an illustrative example that summarizes a market approach analysis of acquired trademarks and trade names. It concludes with the attributes of a fair value valuation report and points out errors to avoid in such a report.

Trademarks and trade names are common marketing-related intangible assets considered in many acquisition accounting valuations. In this example let's assume that Gamma Company (Gamma) is a telecommunications company. The Gamma stock was acquired by Consolidated Telecom Company. This acquisition was accounted for as a business combination under the provisions of ASC 805. The appropriate business combination valuation date was January 1, 2017.

The Gamma trademarks and trade names are an important identifiable intangible asset for the target company. For ASC 805 acquisition accounting purposes, the appropriate standard of value is fair value. Based on the analyst's highest and best use (HABU) analysis, the appropriate premise of value is value in continued use.

Gamma retained an analyst to estimate the fair value of the acquired trademarks and trade names intangible asset. The analyst decided to use the market approach and the relief from royalty (RFR) method to value the subject intangible asset.

Gamma management provided the analyst with a long-term financial forecast. The analyst performed a rigorous due diligence process, and the

analyst concluded that the appropriate economic useful life (EUL) is 20 years for the subject trademarks. The reasons for this EUL estimate were described in the fair value valuation report and documented in the fair value valuation work papers.

Let's assume that the Gamma weighted average cost of capital (WACC) is 11 percent. This 11 percent Gamma WACC is also the weighted average return on assets (WARA) that results from the analyst's total purchase price allocation. And, let's assume that the analyst proved that 11 percent is also the overall acquisition price/deal structure internal rate of return (IRR).

COMMON INTELLECTUAL PROPERTY LICENSE TRANSACTION DATABASES

First, the analyst performed due diligence with regard to the Gamma ownership of the subject trademarks and with regard to the subject intellectual property ownership interests. Second, the analyst performed due diligence with regard to the Gamma operation of the subject trademarks and with regard to the economic benefit of the trademarks to Gamma.

After selecting the RFR method as the most appropriate valuation method, the analyst searched for arm's-length trademark license agreements between independent parties that could serve as comparable uncontrolled transactions (CUTs). The analyst consulted several commercially available databases in the search for trademark CUTs that would provide empirical evidence of market participant trademark/license royalty rates.

The analyst researched CUT intellectual property license agreements by accessing the following databases:



ROBERT F. REILLY, CPA

Willamette Management Associates
Chicago, IL
rfreilly@willamette.com

RoyaltySource

www.royaltysource.com—The AUS Consultants database provides intellectual property license transaction royalty rates. The database can be searched by industry, technology, and/or keyword. The information includes royalty rates, name of the licensee and the licensor, a description of property licensed (or sold), the transaction terms, and the original information sources.

RoyaltyStat, LLC

www.royaltystat.com—RoyaltyStat is a subscription-based database of intellectual property license royalty rates and license agreements, compiled from Securities and Exchange Commission documents. The database is searchable by SIC code or by full text.

Royalty Connection

www.royaltyconnection.com—Royalty Connection™ provides online access to intellectual property license royalty

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expert TIP

Regulatory and litigation challenges often focus on the fair value valuation of—and the acquisition accounting for—the intangible assets acquired in the business combination.

rate and other license information on all types of technology, patents, trade secrets, and know-how. Users can search this database by industry, product category, or keyword.

ktMINE

www.bvmarketdata.com—ktMINE is an interactive database that provides direct access to intellectual property license royalty rates, actual license agreements, and detailed agreement summaries. In this database, intellectual property license agreements are searchable by industry, keyword, and various other parameters.

SELECTED CUT TRADEMARK LICENSE AGREEMENTS

The analyst documented the CUT search criteria. The analyst documented the reasons for each potential CUT that was selected. And, the analyst documented the reasons for each potential CUT that was rejected. The analyst reviewed each CUT license agreement. The analyst confirmed the CUT license pricing formula. The analyst documented the selected comparison methods (e.g., territory, products covered, exclusivity, licensor requirements, license rights, renewal options, license terms, etc.). And, the analyst assembled (and normalized) the relevant royalty-related pricing data with regard to the selected CUT licenses.

Exhibit 16 on page 15 summarizes the relevant license pricing and other data with regard to the analyst's selected CUT trademark licenses. (The Exhibit 16 data are hypothetical and were materially modified for the purposes of this illustrative example.)

Exhibit 17 on page 16 summarizes the analyst's quantitative analysis of the CUT license agreement royalty rate data.

Comparing (1) the Gamma trademarks to (2) the selected CUT license trademarks, the analyst considered trademark use, territory, products, market size, market growth rate, user size, user profitability, trademark-related profit potential, and other factors. Based on this comparative analy-

sis, the analyst concluded that the Gamma trademarks deserved a royalty rate that was slightly below the mean and median royalty rates—but higher than the first (i.e., the low) quartile royalty rate.

The analyst selected a 2 percent of revenue royalty rate to apply to the Gamma trademark RFR method analysis. The analyst also selected this royalty rate so as to consider the expense to the licensor of maintaining the licensed trademark over the expected 20-year trademark EUL period.

Exhibit 18 on page 17 summarizes the analyst's market approach RFR method fair value valuation analysis. This analysis incorporates the royalty relief analysis over both (1) a 5-year discrete projection period and (2) a 15-year trained value projection period. The total 20-year term of this projection period equals the analyst's estimate of the Gamma trademark EUL.

Based on this market approach and relief from royalty method valuation analysis, the analyst concluded the fair value of the Gamma trademarks and trade names as of the business combination valuation date for acquisition accounting purposes.

RECONCILIATION OF WACC, WARA, AND IRR

The prior three examples illustrated the application of the income approach, the cost approach, and the market approach, respectively, in the fair value valuation of acquired intangible assets. At the conclusion of the intangible asset valuation process, there is an additional procedure that is important in the acquisition accounting valuation.

In the earlier stages of the fair value valuation, the analyst mathematically concluded (and documented in the valuation work papers) that the target company WACC was consistent with the acquisition price implicit IRR. In this concluding stage of the fair value valuation, the analyst should also quantitatively prove (and document in the valuation work papers) that the purchase price allocation

implied WARA is consistent with both (1) the WACC used in the fair value valuation and (2) the deal IRR expected by the corporate acquirer.

In particular, the mandatory performance framework (MPF) indicates that this WACC/IRR/WARA reconciliation is an important part of the fair value valuation process for acquisition accounting purposes. Therefore, the following example presents an illustration of the analyst's comparison of (1) the target company-based WACC, (2) the acquirer company-based IRR, and (3) the purchase price allocation-based WARA. This illustrative example relates to the hypothetical Delta Company that was acquired in February 2017. The analyst was retained to perform the fair value valuation for acquisition accounting purposes.

ILLUSTRATIVE RECONCILIATION OF WACC TO WARA TO IRR

Let's assume that 100 percent of the Delta Company (Delta) stock is acquired by Acquirer Corporation (Acquirer) for a total acquisition purchase price of \$7,283,850. Let's assume that the business combination transaction closes on February 5, 2017.

Let's assume that the analyst performed (and documented) a rigorous review of the Acquirer's target company cash flow projections. The analyst performed this due diligence in order to calculate the transaction price-implied IRR. The analyst performed a target company WACC calculation in order to conclude the appropriate present value discount rate (and direct capitalization rate) to use in the intangible asset income approach valuation analyses.

The analyst concluded the fair value for all of the acquired Delta net working capital assets, tangible assets, and intangible assets (including the residual amount for the acquired goodwill). The analyst concluded the purchase price allocation WARA based on the concluded fair value indications for each of the categories of acquired

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EXHIBIT 16

Gamma Company
 Trademarks and Trade Names
 Market Approach Relief from Royalty Method
 CUT Trademark License Transactions

Trademark Licensor	Trademark Licensee	Comparable Uncontrolled Transaction Trademark License Summary Description	License Start Year	License Term	License Royalty Rate Range % of Revenue		License Upfront/ Other Fees
					Low	High	
Southwestern Bell Telephone Company	Telecom Group	Telecom Group agreed to a royalty for the exclusive right to the name, reputation, and public image of the Southwestern Bell Telephone Company.	2014	10 years	5.0%	5.0%	NA
Cable and Wireless PLC	Hong Kong Telecommunications Ltd.	Cable and Wireless entered into an exclusive agreement with a Hong Kong telephone company for the use of its trademarks (in particular, use of the telecommunication name and logo in connection with international business) on relevant products and services.	2012	10 years	4.0%	4.0%	NA
AT&T Corp.	KIRI Inc.	AT&T grants to KIRI an exclusive license to use the licensed marks (AT&T and globe design logo) solely in connection with the marketing, advertising, promotion, and provision of the licensed services (such as telecommunication and Internet services) in the licensed territory.	2013	5 years	2.5%	4.0%	\$2.5 million minimum guarantee
Nextel	Nextel Partners	A contract between a private U.S. company and a publicly owned U.K. spin-off company includes an exclusive license agreement for the right to use the Nextel brand name. The licensee owns its own spectrum and provides services to the public as Nextel.	2015	5 years	1.5%	2.0%	NA
France Telecom (Orange Brand Services Limited, UK)	PTK CenterTel	PTK CenterTel is rebranding its name from Idea to Orange. Idea, which now holds 32.2% of the market, will change its name and logo (trademark). PTK CenterTel will pay to France Telecom a royalty for the exclusive use of the Orange name and mark.	2016	5 years	1.6%	1.6%	NA
Global Communications International, Inc.	Unical Enterprises, Inc.	Unical licensed from Global an exclusive right to use the following trademarks: Tech-line, Easytouch, Favorite, Classic Favorite, Classic Favorite Plus, Phototouch, Choice, Competitor, Competitor Plus, Roommate, Plaza, Favorite Plus, Easyreach, Big Button, EZ Button, Cleartech, Favorite Messenger II, Digimate, Mountain Bell, B Office, Bell Symbol, Bell Mark, Northwestern Bell. All of the above are in connection with corded telephones, cordless telephones, answering machines, and integrated telephone/answering devices.	2015	10 years	2.1%	2.2%	NA
Virgin Enterprises Limited	NTL Inc.	NTL entered into a trademark license agreement under which it is entitled to use specified Virgin trademarks within the U.K. and Ireland related to Internet, television, fixed line telephony, and mobile telephony.	2015	10 years	1.25%	1.25%	£8.5 million minimum annual royalty

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Delta assets. To confirm the reasonableness of the fair value purchase price allocation, the analyst compared (1) the transaction price IRR to (2) the target company WACC to (3) the fair value purchase price allocation WARA.

Exhibit 19 on page 19 summarizes the analyst’s IRR calculation, based on (1) the total transaction consideration of \$7,283,850 and (2) the Acquirer-prepared financial projections used to price the business combination transaction.

The analyst solved for the IRR that caused the sum of (1) the present value of the discrete projection period net cash flow and (2) the present value of the terminal period to equal (3) the \$7,283,850 total transaction price. That calculated IRR was 11.8 percent. For comparison purposes, the analyst rounded the 11.8 percent calculated IRR to 12 percent.

Exhibit 20 on page 20 summarizes the WACC calculation that the analyst performed to conclude the present value discount rate (and the direct capitalization rate) to use in the Delta fair value valuations. The Exhibit 20 data are hypothetical and are presented for illustrative purposes only.

Based on the WACC analysis, the analyst concluded that the appropriate present value discount rate was 12 percent (rounded). This 12 percent WACC-based discount rate is consistent with the Acquirer’s transaction analysis-based 12 percent IRR.

Exhibit 21 on page 18 summarizes the analyst’s WARA analysis. Exhibit 21 presents each of the Delta acquired asset categories. Exhibit 21 includes the fair value indications for each of the asset categories valued by the analyst—including the residual calculation of the acquired goodwill. Exhibit 21 presents the analyst’s determination of a fair, market-derived rate of return on each of the acquired asset categories. And, Exhibit 21 presents the calculation of the weighted return on assets for each of the acquired asset categories.

Based on the Exhibit 21 analysis, the WARA implied by the analyst’s

EXHIBIT 17

**Gamma Company
Trademarks and Trade Names
Market Approach Relief from Royalty Method
Analysis of CUT Trademark License Data**

Indicated CUT License Agreements License Royalty Rate Range		
	Low Royalty Rate Indications	High Royalty Rate Indications
High Royalty Rate	5.0%	5.0%
Low Royalty Rate	1.3%	1.3%
Mean Royalty Rate	2.9%	3.2%
Median Royalty Rate	2.1%	2.2%
Trimmed Mean Royalty Rate	2.3%	2.8%
First Quartile Royalty Rate	1.4%	2.8%
Third Quartile Royalty Rate	4.5%	4.6%
Analyst’s Selection of the Appropriate Gamma Trademark Royalty Rate = 2%		

purchase price allocation was 12 percent (rounded). That fair value valuation 12 percent WARA compares to the 12 percent Delta WACC and the 12 percent Acquirer IRR. Accordingly, this WARA/WACC/IRR reconciliation gives the analyst comfort with regard to the acquisition accounting fair value conclusions.

The forensic analyst reviewing an acquisition accounting fair value valuation should look for—and assess—the original analyst’s WARA/WACC/IRR reconciliation analysis and discussion.

ATTRIBUTES OF A FAIR VALUE VALUATION REPORT

The MPF provides considerable guidance with regard to the documentation that should be included in a fair value valuation report prepared for acquisition accounting purposes. This MPF guidance extends to the reporting of intangible asset fair value valuations prepared for ASC 805 compliance purposes.

In order to encourage the valuation report reader’s acceptance and to comply with the MPF, the intangible asset fair value valuation report should be:

- Clear, convincing, and cogent
- Well-organized, well-written, and

well-presented

- Free of grammar, punctuation, spelling, and mathematical errors
- Procedurally and mathematically replicable, without the reliance on any unexplained or unsourced valuation variables

Whether the fair value valuation report is a “comprehensive valuation report” or an “abbreviated valuation report” (as those terms are defined in the MPF), the intangible asset fair value valuation report should tell a narrative story that:

- Defines the analyst’s valuation assignment
- Describes the analyst’s data gathering and due diligence procedures
- Justifies the analyst’s selection of (and rejection of) each of the generally accepted valuation approaches, methods, and procedures
- Explains how the analyst performed the valuation synthesis and reached the final value conclusion
- Defends the analyst’s intangible asset value conclusion
- Describes all of the data sources that the analyst relied on (and includes exhibit or appendix copies of any nonpublic source documents)

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EXHIBIT 18

Gamma Company
 Trademarks and Trade Names
 Market Approach Relief from Royalty Method
 Fair Value Valuation Summary
 As of January 1, 2017

	Projected Calendar Years				
	2017 \$000	2018 \$000	2019 \$000	2020 \$000	2021 \$000
Present Value of Discrete Projection Period Trademark Royalty Expense Relief:					
Management-Provided Revenue Projection [a]	8,634,139	8,358,945	8,042,393	7,720,369	7,377,326
Selected Trademark License Royalty Rate [b]	2%	2%	2%	2%	2%
Projected Pretax Trademark Royalty Expense Relief	172,683	167,179	160,848	154,407	147,547
Less: Projected Income Tax Rate [c]	<u>37%</u>	<u>37%</u>	<u>37%</u>	<u>37%</u>	<u>37%</u>
Projected After-Tax Trademark Royalty Expense Relief	108,790	105,323	101,334	97,277	92,954
Discounting Period [d]	0.5000	1.5000	2.5000	3.5000	4.5000
Present Value Factor @ 11% [e]	<u>0.9492</u>	<u>0.8551</u>	<u>0.7704</u>	<u>0.6940</u>	<u>0.6252</u>
Present Value of Trademark Royalty Relief	<u>103,264</u>	<u>90,061</u>	<u>78,068</u>	<u>67,510</u>	<u>58,115</u>
Sum of Present Values of Trademark Royalty Relief	<u>397,018</u>				
Present Value of Terminal Period Trademark Royalty Expense Relief:					
Fiscal 2022 Normalized Trademark Royalty Expense Relief [f]	\$92,954				
Direct Capitalization Multiple [g]	<u>7.579</u>				
Terminal Value of Trademark Royalty Expense Relief	704,498				
Present Value Factor @ 11% [e]	<u>0.6252</u>				
Present Value of Terminal Value	<u>\$440,452</u>				
Trademark Valuation Summary:					
Present Value of Discrete Period Trademark Royalty Expense Relief	\$397,018				
Present Value of Terminal Period Trademark Royalty Expense Relief	<u>440,452</u>				
Fair Value of the Gamma Trademarks (rounded)	<u>\$840,000</u>				

- [a] Revenue projection provided by Gamma management and subject to analyst due diligence; this revenue projection is consistent with the acquirer's transaction-related long-range financial plan.
- [b] Based on the analyst's review of arm's-length license agreements between parties for similar intellectual property.
- [c] Based on the market participant expected effective income tax rate.
- [d] Calculated as if cash flow is received at midyear.
- [e] Based on the Gamma weighted average cost of capital.
- [f] Based on the 2021 projected after-tax trademark royalty expense relief and an expected long-term growth rate of 0 percent.
- [g] Based on a present value of an annuity factor for an 11 percent discount rate and a remaining 15-year expected EUL (after the 5-year discrete projection period).

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FAIR VALUE VALUATION REPORT ERRORS TO AVOID

An intangible asset fair value valuation report prepared for acquisition accounting purposes should avoid these common errors:

- Failure to apply the defined standard of value
- Failure to apply the defined premise of value
- Analytical internal inconsistencies (both within and between valuation approaches)
- Arithmetic errors in the valuation analysis
- Insufficient support for the selected valuation variables
- Reliance on so-called industry or other rules of thumb
- Insufficient data and inadequate market research
- Inadequate analyst due diligence procedures

SUMMARY AND CONCLUSION

This discussion focused on the types of identifiable intangible assets that are

typically considered in an acquisition accounting valuation. This discussion also considered what is not an intangible asset for business combination fair value valuation purposes. In particular, this discussion focused on the forensic analyst’s review of the valuation analyst’s intangible asset valuation for purposes of either contesting or defending the reporting entity’s financial accounting for an ASC 805 business combination.

This discussion described the common elements of the intangible asset fair value valuation. This discussion presented an illustrative income approach valuation analysis of an acquired intangible asset. This discussion presented an illustrative cost approach valuation analysis of an acquired intangible asset. And, this discussion presented an illustrative market approach valuation analysis of an acquired intangible asset.

This discussion summarized the analyst’s considerations with regard to the intangible asset fair value valuation

synthesis and conclusion. With consideration of the MPF, this discussion summarized the analyst’s considerations with regard to documenting the intangible asset valuation variables in the fair value valuation work file. With consideration of the MPF professional guidance, this discussion summarized the analyst’s considerations for reporting the results of the intangible asset valuation in the fair value valuation report.

Forensic analysts are often called on to assess—and opine on—the above-listed issues in the context of an acquisition accounting regulatory agency challenge or a reporting entity shareholder claim of accounting fraud or misrepresentation. These regulatory and litigation challenges often focus on the fair value valuation of—and the acquisition accounting for—the intangible assets acquired in the business combination. *✎*

EXHIBIT 21

**Delta Company
Illustrative Purchase Price Allocation
Weighted Average Return on Assets Analysis
As of February 5, 2017**

Acquired Net Assets Subject to Valuation	Fair Value Conclusion \$	Required Rate of Return on Assets	Weighted Return of Assets
Net Working Capital	1,297,324	3%	0.5%
Tangible Assets	58,902	6%	0.0%
Trademarks and Trade Names	1,103,700	12%	1.9%
Patents	165,900	12%	0.3%
Customer Relationships	2,977,100	12%	5.2%
Trained and Assembled Workforce	241,400	12%	0.4%
Goodwill (excluding assembled workforce)	<u>1,439,506</u>	22%	<u>4.3%</u>
Total Net Assets (equals purchase price)	<u>7,283,850</u>		
Weighted Average Return on Assets (rounded)			<u>12%</u>
Weighted Average Cost of Capital (rounded)			<u>12%</u>
Transaction Price Internal Rate of Return (rounded)			<u>12%</u>

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EXHIBIT 19

Delta Company
Illustrative Purchase Price Allocation
Acquisition-Related Financial Projections
Internal Rate of Return Calculation
As of February 5, 2017

	<u>Projected Fiscal Years Ending December 31,</u>					Normalized
	2017	2018	2019	2020	2021	2021
	\$	\$	\$	\$	\$	\$
Acquirer's Acquisition-Related Financial Projections						
Present Value of Discrete Period Cash Flow:						
Net Operating Income (after tax)	736,209	636,207	654,030	667,110	680,453	680,453
Noncash Expense (i.e., depreciation expense)	3,615	3,723	3,798	3,874	3,951	3,951
Capital Expenditures	(4,016)	(4,137)	(4,220)	(4,304)	(4,390)	(4,390)
Additions (Reductions) to Net Working Capital	(10,093)	(11,869)	(11,583)	(11,815)	(12,051)	(12,051)
Net Cash Flow	<u>725,715</u>	<u>623,924</u>	<u>642,025</u>	<u>654,865</u>	<u>667,963</u>	<u>668,402</u>
Months Remaining in the Initial Projection Year	10.8					
Adjusted Net Cash Flow	677,690					
Discounting Period	0.4517	1.4035	2.4035	3.4035	4.4035	
Deal Present Value Factor @ 11.8%	0.9508	0.8550	0.7647	0.6839	0.6117	
Present Value Discrete Net Cash Flow	644,366	533,453	490,953	447,993	408,591	
Total Present Value of Discrete Period Projected Net Cash Flow	<u>\$2,525,245</u>					
Acquirer Acquisition-Related Financial Projections						
Present Value of Terminal Period Cash Flow:						
Fiscal 2022 Net Cash Flow (2021 NCF + 2%)	<u>\$681,770</u>					
+ Deal Direct Capitalization Rate (11.8% - 2%)	9.8%					
= Terminal Value	6,950,594					
Deal Present Value Factor @ 11.8 Percent	0.6117					
Present Value of Terminal Period Projected Cash Flow	<u>\$4,251,659</u>					
Value Summary:						
Discrete Period Cash Flow Present Value	\$2,525,243					
+ Terminal Period Cash Flow Present Value	4,251,659					
= Business Enterprise Value	6,776,904					
+ Cash and Cash Equivalents	506,946					
= Total Transaction Purchase Price	<u>\$7,283,850</u>					
Transaction Implied Internal Rate of Return	<u>11.8%</u>					
Transaction Price IRR (rounded)	<u>12%</u>					

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EXHIBIT 20

Delta Company
Illustrative Purchase Price Allocation
Weighted Average Cost of Capital
As of February 5, 2017

Present Value Discount Rate and Direct Capitalization Rate

COST OF EQUITY CAPITAL:

Model #1: Modified Capital Asset Pricing Model:		Source:
Risk-Free Rate of Return	2.3%	20-year Treasury bond, <i>The Federal Reserve Statistical Release</i> , as of February 5, 2017
General Equity Risk Premium	6.0%	Duff & Phelps, LLC, <i>2017 Valuation Handbook: Guide to Cost of Capital</i>
Multiplying by: Raw Small Composite	<u>0.5</u>	Duff & Phelps, LLC, <i>2017 Valuation Handbook: Industry Cost of Capital</i> , SIC code 36
Industry Levered Beta	3.0%	Duff & Phelps, LLC, <i>2017 Valuation Handbook: Guide to Cost of Capital</i> , decile 10
Industry-Adjusted General Equity Risk Premium	<u>5.6%</u>	
Size Equity Risk Premium	<u>10.9%</u>	
Indicated Cost of Equity Capital		
Model #2: Build-Up Model:		Source:
Risk-Free Rate of Return	2.3%	20-year Treasury bond, <i>The Federal Reserve Statistical Release</i> , as of February 5, 2017
General Equity Risk Premium	6.0%	Duff & Phelps, LLC, <i>2017 Valuation Handbook: Guide to Cost of Capital</i>
Industry Equity Risk Premium	0.3%	Duff & Phelps, LLC, <i>2017 Valuation Handbook: Industry Cost of Capital</i> , SIC code 36
Size Equity Risk Premium	5.6%	Duff & Phelps, LLC, <i>2017 Valuation Handbook: Guide to Cost of Capital</i>
Indicated Cost of Equity Capital	<u>14.2%</u>	
Selected Cost of Equity Capital	12.5%	Average of Models #1 –#2

COST OF DEBT CAPITAL:

Model #1: Modified Capital Asset Pricing Model:		Source:
Before-Tax Cost of Debt Capital	5.4%	Moody's Baa Corporate Bond Yield, as of February 5, 2017
Income Tax Rate	<u>38%</u>	Based on the blended federal and state effective income tax rate
Selected Cost of Debt Capital	<u>3.3%</u>	

WEIGHTED AVERAGE COST OF CAPITAL CALCULATION:

Model #1: Modified Capital Asset Pricing Model:		Source:
Selected Cost of Equity Capital	12.5%	
Multiplying by: Equity/Invested Capital (based on SIC code 36)	99.0%	Duff & Phelps, LLC, <i>2017 Valuation Handbook: Industry Cost of Capital</i> , SIC code 36
Equals: Weighted Cost of Equity Capital	<u>12.4%</u>	
Selected Cost of Debt Capital	3.3%	
Multiplying by: Debt/Invested Capital (based on SIC code 36)	<u>1.0%</u>	Duff & Phelps, LLC, <i>2017 Valuation Handbook: Industry Cost of Capital</i> , SIC code 36
Equals: Weighted Cost of Debt Capital	<u>0.03%</u>	
Weighted Average Cost of Capital (rounded)	12%	
Less: Expected Long-Term Growth Rate (rounded)	<u>2%</u>	
Equals: Direct Capitalization Rate (rounded)	<u>10%</u>	