



Exploring Methodologies and Discount Rates in Valuing Intangible Assets

Presented by:

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Experience

W. James (Jim) Lloyd is a Shareholder with Pershing Yoakley & Associates (PYA), a management consulting and accounting firm specializing in the healthcare industry. Jim's primary areas of expertise includes valuation (entities, joint ventures, complex business arrangements, and physician services agreements), transaction advisory, hospital-physician alignment, affiliations and alliances, and litigation/expert testimony services.

Jim regularly assists clients with structuring complex business transactions and arrangements and has lead multiple projects involving trade names and/or the "brand" value of organizations. He has broad healthcare industry experience that includes a wide range of provider organizations such as ambulatory surgery centers, cancer centers, dialysis facilities, imaging centers, hospitals, long-term care facilities, and physician practices. Other relevant industry experience includes managed care organizations, pharmaceutical manufacturers, pharmacies, manufacturing, real estate, and wholesale distribution, among others. Additionally, he has substantial litigation/expert testimony experience related to a broad range of disputes involving antitrust, diminution of value, fraud, intellectual property, lost profits, marital dissolution, post and failed acquisition transactions, and shareholder oppression matters.

Jim has published multiple articles on valuation related topics and is a frequent speaker at conferences and other venues across the U.S.

Professional & Civic Organizations

- American Institute of CPAs - Past Chair, ABV Credential Committee
- American Society of Appraisers - Past Member, Board of Examiners
- Tennessee Society of CPAs – Past Member, Valuation and Litigation Service Committee
- American Health Lawyers Association – Past Member, Fair Market Value Affinity Group
- Helen Ross McNabb Foundation – Board of Directors

Education & Credentials

- Bachelor of Science in Business Administration
 - University of Tennessee
- Certified Public Accountant (CPA)
 - Licensed in Tennessee
- Accredited in Business Valuation (ABV)
 - American Institute of CPAs
- Certified Fraud Examiner (CFE)
 - Association of Certified Fraud Examiners
- Accredited Senior Appraiser (ASA)
 - American Society of Appraisers

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Experience

Brian leads the DHG Forensics and Valuation practices in Virginia and serves clients across the Mid-Atlantic region. He practices in the areas of valuation and forensic accounting, including financial investigations and litigation support and consulting services. He has been designated as an expert witness and qualified to testify by report, deposition, and/or trial testimony in various venues in commercial and domestic matters. Brian frequently presents to professional and trade organizations and has presented at venues such as the AICPA's National Forensic and Valuation Services conference, state CPA society conferences, and a national webinar. Brian has also authored articles on forensics and valuation presented in various professional publications.

Brian assists businesses and individuals with valuation services in the areas of family law, financial reporting, stock-based compensation, litigation and shareholder disputes, transaction consulting, tax matters, and employee stock ownership plans. The focus areas of his forensic accounting services include consulting services in commercial and family law matters involving matters such as shareholder disputes, breach of contract, breach of warranties, misappropriation of trade secrets, post-acquisition disputes, tortious interference, statutory conspiracy, business interruption claims, employee embezzlement, investment scams, and fraud.

Brian has served both public and private businesses in industries including, but not limited to: real estate, construction, healthcare, technology, food service, auto dealerships, manufacturing, distribution, government contracting, retail, insurance, and banking.

Licenses & Certifications

- Certified Public Accountant, VA (CPA)
- Accredited in Business Valuation (ABV)
- Certified in Financial Forensics (CFF)
- Accredited Senior Appraiser in Business Valuation (ASA)
- Master Analyst in Financial Forensics (MAFF)

Industry/Service Focus

- Valuation services
- Commercial Matters
 - Economic damages
 - Business Interruption
- Family law
 - Asset/income valuation and classification
- Fraud and Forensics Accounting

Professional & Civic Organizations

- AICPA, Business Valuation Committee and Former Task Force Member
- American Society of Appraisers, Former Richmond Chapter President
- VSCPA, Top 5 Under 35 Award, Past Recipient
- VSCPA, Annual BVFLS Former Conference Task Force Member
- Junior Achievement Worldwide, Past volunteer and presenter

Education

- Virginia Tech
 - Bachelor of Science, Finance, *Magna Cum Laude*
- Virginia Commonwealth University
 - Post Baccalaureate Certificate in Accounting

Agenda

▶ Intangible Asset Valuation for Financial Reporting

- ASC 805 *Business Combinations*
- Private Company Council Alternatives

▶ Identifying Intangible Assets

- Types of Intangible Assets
- Distinguishing Intangible Assets from Intellectual Property
- Management Responsibility and Auditor Testing/Opinions

▶ Overview of Valuation for ASC 805 Purposes

- Steps to the Valuation
- Company Valuation, WACC, and IRR
- Intangible Assets' Contribution to Enterprise Value

Agenda, continued

- ▶ **Valuation Approaches and Methods for Identifiable Intangible Assets**
 - Common Valuation Approaches and Methods
 - Example
- ▶ **Discount Rates**
 - WARA, WACC, & IRR Reconciliation
 - Key Assumptions
 - Studies and Benchmarks
 - Common Pitfalls
- ▶ **Attrition Analysis and Useful Lives**
 - WARA, WACC, & IRR Reconciliation
- ▶ **Guides and Resources**

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Financial Reporting Standards ASC 805 *Business Combinations* and Private Company Council Alternatives



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ASC 805 – Acquisition Method

- ▶ **Under Topic 805, all business combinations are accounted for by applying the acquisition method, which requires**
 - Identifying the acquirer
 - Determining the acquisition date and the fair value of the acquisition price
 - Recognizing identifiable assets acquired, liabilities assumed and non-controlling interests at accounting date fair value
 - Recognizes goodwill, or in the case of a bargain purchase, a gain
- ▶ **Fair value of the consideration transferred:**
 - Cash
 - Note payable
 - Equity interests
 - Contingent consideration
- ▶ **Goodwill**
 - Residual amount that represents the future economic benefits
 - Has not met the criteria for being individually identified and separately recognized.

Total Consideration

+ FV of any Non-Controlling Interest in Target

+ FV of any Previously Held Equity Interest in Target

- Net acquisition date FV of identifiable assets and liabilities

= Goodwill

ASU 2014-18 Business Combinations

▶ **Alternative, not required, election for private companies**

- Non-compete would not be separately recognized
- Customer relationship intangibles would only be recognized if it capable of being sold or licensed independently of other assets
 - Mortgage servicing rights
 - Commodity supply contracts
 - Bank core deposits
- If elected, then ASU 2014-02 (goodwill) must be elected as well.
However, electing ASU 2014-02 (goodwill) does require electing ASU 2014-18 (business combinations).

PCC Alternative Accounting Considerations

▶ **Consideration of Potential Exits**

- Likely to elect
 - Remain private
- Unlikely to elect
 - Undergoing IPO in future
 - Acquired by public company
 - Concerns about restatements

▶ **Certain assets and liabilities are measured in business combinations under either accounting standard**

- Patented and unpatented technology
- Trade names
- Other identifiable intangible assets excluding customer relationships and non-competes
- Contingent consideration

Identifying Intangible Assets



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Intangible Assets – ASC 805

▶ **ASC 805 provides examples of identifiable intangible assets acquired in a business combination:**

- Marketing-related intangible assets
- Customer-related intangible assets
- Artistic-related intangible assets
- Contract-related intangible assets
- Technology-related intangible assets

Types of Intangible Assets

▶ Marketing-related intangible assets

- Trademarks, service marks, or trade names
- Internet domain names
- Non-compete agreements

▶ Customer-related intangible assets

- Customer lists
- Customer contracts and relationships
- Expected customer contract renewals
- Non-contractual customer relationships
- Contract backlog

▶ Artistic-related intangible assets

- Books, magazines, newspapers, and literary works
- Plays, operas, and ballets, Musical works such as compositions, song lyrics, and advertising jingles
- Photographs and drawings
- Video and audiovisual material including movies, music videos, and TV programs

Types of Intangible Assets

▶ Contract-related intangible assets

- Franchise and licensing agreements
- Construction permits
- Broadcast rights
- Favorable supplier contracts
- Employment agreements

▶ Technology-related intangible assets

- Computer software
- Trade secrets
- Product patents (cover actual physical products)
- Process patents (govern the process by which products are made)

Intellectual Property

- ▶ **An IP is an intangible asset that enjoys special legal recognition and legal protection.**
- ▶ **Created under and protected by specific federal or state statutes**
- ▶ **There are four types of IP:**
 - Patents
 - Trademarks
 - Copyrights
 - Trade Secrets
- ▶ **Often other intangible assets associated with the subject IP**
- ▶ **Specific subset of intangible assets**

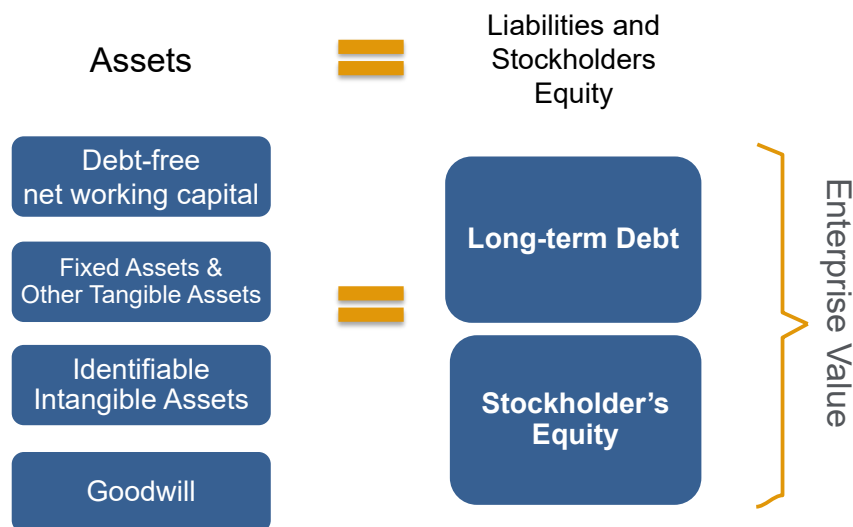
Overview of Valuation for ASC 805 Purposes



Summary of Valuation Engagement Steps

- ▶ Analyze fair value of consideration transferred – Purchase Price
- ▶ Identify fair value of tangible assets and liabilities assumed
- ▶ Analyze Prospective Financial Information (PFI)
- ▶ Calculate Internal Rate of Return based on PFI and Purchase Price
- ▶ Calculate Weighted Average Cost of Capital and Fair Value of Business Enterprise – Market Participant Assumptions
- ▶ Valuation of Identifiable Intangibles
- ▶ Valuation of Contingent Consideration
- ▶ Putting it all together - Calculation of Weighted Average Return on Assets

Enterprise Value and Asset Value



Company Valuation

▶ Estimating the enterprise value of the acquired company

- Assess purchase price relative to fair value
 - Bargain purchase
 - Overpayment and large balance of goodwill
- Assess reasonableness of the cash flow projections
 - Key input to valuing certain intangible assets
- Assess reasonableness of the discount rates applied in the valuation of the intangible assets
- Assess the estimated fair values of the assets are reasonable relative to the business enterprise value of the acquired company

Company Valuation and IRR

▶ Practical Guidance and Issues:

- Interrelation of
 - IRR
 - PV of contingent consideration
 - Non-controlling interest
 - DCF
 - WACC
- Reasonableness of projections and DCF
- Taxable or non-taxable transaction and tax amortization benefit
- Understand differences in purchase price and fair value of enterprise
 - Composition of acquired assets

Company Valuation and IRR

▶ Practical Guidance and Issues:

- Market participant assumptions
 - Revenue growth
 - Cost structure
 - Tax rates
 - Working capital requirements
- Tax basis depreciation
- Adjust the projections, if necessary, to match the probability-weighted projections used in the contingent consideration calculation.

WACC and IRR Comparison

▶ IRR and WACC Relationship – What is it telling us?

- $IRR = WACC$
 - PFI likely properly reflects market participant assumptions
 - Transaction consideration is likely representative of the fair value
- $IRR > WACC$
 - PFI may include some or all of the impact of entity-specific synergies
 - May reflect an optimistic bias
 - May reflect a bargain purchase
- $IRR < WACC$
 - PFI may exclude some or all of the impact of market participant synergies
 - May reflect a conservative bias
 - May reflect an overpayment

Valuation Approaches and Methods Identifiable Intangible Assets



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Common Intangible Asset Valuation Approaches

▶ Cost Approach

- Reflects the amount that would be required currently to replace the service capacity of an asset (referred to as **current replacement cost**)
- Assumes fair value would not exceed what it would cost a market participant to acquire or construct a substitute of comparable utility, **adjusted for obsolescence**

▶ Market Approach

- Reflects **observable prices** and other relevant information generated from **market transactions** involving identical or comparable assets

▶ Income Approach

- Converts future amounts to a single current (discounted) amount
- Reflects **current market expectations about future amounts**
 - **Income** implies anticipated future benefits (**economic earnings**) in the form of **free cash flows** or distributable earnings as opposed to accounting earnings or net income

The Cost Approach

▶ Costs that should be quantified include:

- Direct costs
- Indirect costs
- Developer's profit
- Opportunity cost/entrepreneurial incentive

▶ Assets that lend themselves to the application of the cost approach:

- Recently developed intangible assets such as custom software
- Internally developed software (i.e. accounting, purchasing, billing, etc.)
- Employee workforce

Income Approach Valuation Methods

▶ Cost Savings Methods

- Relief from Royalty Method (RfR)
- Income Increment / Cost Decrement Methods
 - With and Without Method
 - Price Premium Method
 - Greenfield Method
- Direct Estimates of Cost Savings

▶ Multi-period Excess Earnings Method (MPEEM)

- Split Methods (Revenue, Cash Flows or Profit Split)

▶ Monte Carlo Simulation Analyses

▶ Decision Tree Analyses

▶ Options-based Methods (Real Options)

Relief from Royalty

- ▶ **Costs savings due to ownership**
 - Calculate what the rent would typically have been in terms of licensing fees (also called royalties) for licensing the same right from another business
 - Or calculate what you want to request in license fees, if you were to license your right
- ▶ **Common assets**
 - Patents
 - Utility models
 - Trade names
 - Trademarks
- ▶ **To apply this method, the key input is the hypothetical royalty rate**
 - Observable – royalty rates in negotiated licenses
 - Market based – royalty rates found in available market data for licenses involving similar assets

Multi-Period Excess Earnings Method

- ▶ **An asset's Fair Value is equal to the present value of the incremental after-tax cash flows attributable solely to the intangible asset over its remaining life**
- ▶ **Identify the portion of prospective revenues that is expected to be generated through repeat business from customers existing at the valuation date**
- ▶ **Primary value driver assets:**
 - Customer contracts and relationships
 - Technology

Multi-Period Excess Earnings Method

► Demonstrative Example – Customer Relationships

		2013	2014	2015	2016	2017
Sales to Existing Customers		\$ 10,000,000	\$10,300,000	\$10,609,000	\$10,927,270	\$11,255,088
Annual Loss of Current Customers	-30.0%	85.0%	59.5%	41.7%	29.2%	20.4%
Projected Revenue from Surviving Customers		8,500,000	6,128,500	4,418,649	3,185,846	2,296,995
EBIT excluding mktg cost to new customers	10.0%	850,000	612,850	441,865	318,585	229,699
Less: Income Taxes	40.0%	(340,000)	(245,140)	(176,746)	(127,434)	(91,880)
Net operating profit after tax		510,000	367,710	265,119	191,151	137,820
Less: Return on Contributory Assets	2.5%	(212,500)	(153,213)	(110,466)	(79,646)	(57,425)
Residual After Tax Cash Flow		297,500	214,498	154,653	111,505	80,395
Discount period		0.50	1.50	2.50	3.50	4.50
Present Value Factor	25.0%	0.89	0.72	0.57	0.46	0.37
Present Value of Residual Cash Flows		\$ 266,092	\$ 153,482	\$ 88,528	\$ 51,063	\$ 29,453
Sum of Present Value of Residual Cash Flows		\$ 588,619				
Plus Tax Amortization Benefit		76,533				
Value of Customer Relationships		\$ 665,152				

Discount Rates for Intangible Assets



Intangible Asset Discount Rates

- ▶ **Asset Specific Weighted Average Cost of Capital**
 - Develop cost of debt
 - Develop cost of equity
 - Consider proportion of debt and equity
 - Evaluate risk specific to each asset
 - Tax Affecting Cost of Debt
 - Reconciliation of Assumptions to WACC for overall entity
 - Capital Structure Implied by WACC should match capital structure implied in discount rates by asset type.
- ▶ **WARA, WACC, & IRR Reconciliation – Tie it All Together!**

WARA, WACC, & IRR Reconciliation

- ▶ **Calculate Weighted Average Return on Assets (WARA)**
- ▶ **Compare the WARA, WACC, and IRR**
- ▶ **Assists in assessing the reasonableness of the asset-specific returns for identified intangible assets and the implied return on goodwill**
- ▶ **Should expect alignment and close proximity of rates**
- ▶ **Practical Guidance and Issues:**
 - Analyze on basis of Fair Value or Actual Purchase Price
 - Bargain purchase
 - Overpayment
 - Taxable or non-taxable transaction assumption
 - Consider operating assets only – evaluate excess or non-operating assets acquired

Example

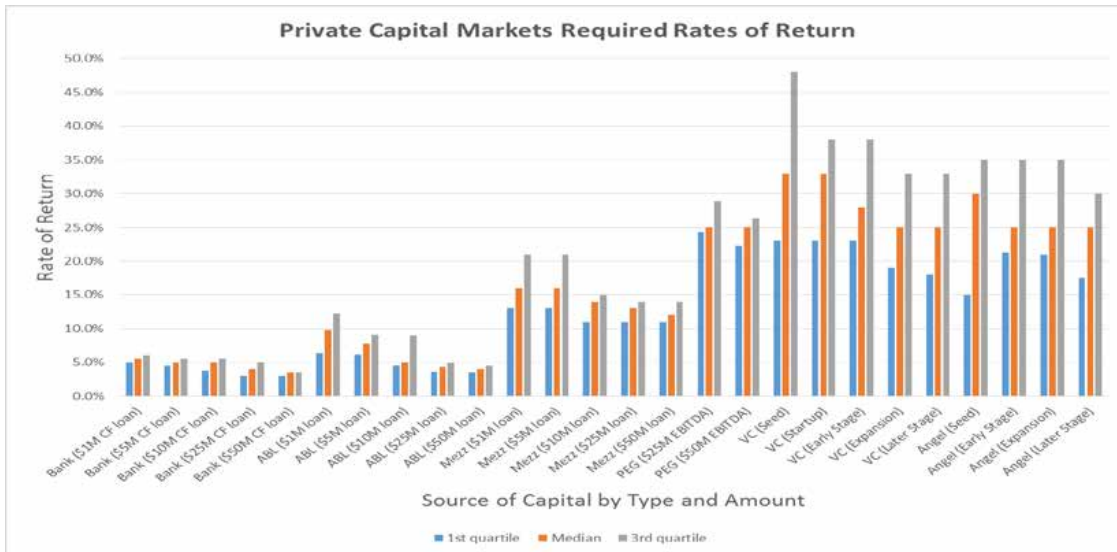
	Operating Fair Value	After Tax Return	Percent of Purchase Price	Weighted Return
Debt-free net working capital	\$ 5,000	6.00%	3.68%	0.22%
Fixed assets	10,000	7.50%	7.35%	0.55%
Assembled workforce	2,000	18.00%	1.47%	0.26%
Trade name	10,000	19.00%	7.35%	1.40%
Non compete	4,000	18.00%	2.94%	0.53%
Customer relationships	40,000	20.00%	29.41%	5.88%
Patented technology	25,000	20.00%	18.38%	3.68%
In process R&D	5,000	23.00%	3.68%	0.85%
Goodwill	35,000	25.00%	25.74%	6.43%
Total	\$ 136,000		100.00%	19.80%
Weighted average return on assets (WARR)				19.80%
Weighted average cost of capital (WACC)				19.50%
Internal rate of return (IRR)				19.00%

Benchmarking Discount Rates

- ▶ Overall Company WACC is Starting Point
- ▶ Adjust based upon risk and debt/equity financing capacity
- ▶ Resources and References:
 - Traditional sources of Cost of Equity and Cost of Debt
 - Duff & Phelps Valuation Handbook – Industry Cost of Capital
 - Other Benchmarks

Benchmarking Discount Rates

▶ Pepperdine Private Capital Markets Surveys - 2015



Benchmarking Discount Rates

▶ AICPA A&V Guide - Stock-Based Compensation

<u>Stage of Development</u>	<u>Plummer</u>	<u>Scherlis and Sahlman</u>	<u>Sahlman, Stevenson, and Bhide</u>
Startup ¹	50%-70%	50%-70%	50%-100%
First Stage or "early development" ²	40%-60%	40%-60%	40%-60%
Second Stage or "expansion" ³	35%-50%	30%-50%	30%-40%
Bridge/Initial Public Offering (IPO) ⁴	25%-35%	20%-35%	20%-30%

¹ As described in the publications referenced in this table, startup-stage investments typically are made in enterprises that are less than a year old. The venture funding is to be used substantially for product development, prototype testing, and test marketing.

² As described in the publications referenced in this table, early development-stage investments are made in enterprises that have developed prototypes that appear viable and for which further and for which further technical risk is deemed minimal, although commercial risk may be significant.

³ As described in the publications referenced in this table, enterprises in the expansion stage usually have shipped some product to consumers (including beta versions).

⁴ As described in the publications referenced in this table, bridge/IPO-stage financing covers such activities as pilot plant construction, production design, and production testing, as well as bridge financing in anticipation of a later IPO.

Purchase Price Allocation Studies

▶ Intangible assets as % of purchase price

- Identifiable intangible assets
 - Developed technology
 - In-process research and development
 - Trademarks and trade names
 - Customer-related
- Goodwill

▶ Contingent consideration as % of purchase price

▶ Industry specific

▶ Example sources:

- Houlihan Lokey
- McLean Group

Avoiding Common Pitfalls

▶ Management Assumptions

- Identify and document which assumptions were deemed significant
- Perform retrospective reviews on management's forecasting ability
- Challenge management's assumptions in light of changing market conditions, contrary data
- Document the reasons for differences in projections used in various types of fair value estimates and calculations.
- Proper incorporation of key tax assumptions
- Examples:
 - Projection data
 - Historical customer attrition data

▶ Valuation Assumptions

- Testing underlying data used in the valuation models
- Analyze support for key assumptions with objective evidence and/or market data
- Understand the reasons for differences in fair value estimates derived from different methods
- Examples:
 - Reliability and support of key assumptions in selected valuation methods
 - Inputs to WACC and Reconciliation of IRR, WACC, and WARR
 - Asset useful life assumptions

Attrition Analysis and Useful Lives



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Customer Relationships

- ▶ **Nature of customer relationships**
 - Customer contracts
 - Customer relationships
 - Backlog
- ▶ **Analyze historical sales by customer to assess:**
 - Growth in revenue to existing customers
 - Customer attrition and survivorship
- ▶ **Approach to attrition**
 - Customer count
 - Customer sales
- ▶ **Applying attrition rate**
 - Survivorship curve
 - Straight-line

Useful Life Analysis Resources

- ▶ **BVR – Benchmarking Identifiable Intangibles and Their Useful Lives in Business Combinations**
- ▶ **Data Slices: Identifiable Intangible Asset Category**
 - Useful Lives (Years)
 - Value as % of Identifiable Intangible Assets
 - Value as % of Total Intangible Assets
- ▶ **Data Slices by Industry**
 - Intangible Life Statistics
 - Value as % of Identifiable Intangible Assets
 - Value as % of Total Intangible Assets

Guides and Resources



Resources

- ▶ **AICPA's Accounting and Valuation Guide for IPR&D**
 - Assets Acquired to be Used in Research and Development Activities (the Guide)
- ▶ **AICPA's Accounting and Valuation Practice Guide for Impairments**
 - Testing Goodwill for Impairment
- ▶ **AICPA's Accounting and Valuation Guide Equity as Compensation Guide**
 - Valuation of Privately-Held-Company Equity Securities Issued as Compensation (Cheap Stock Practice Aid)
- ▶ **In Process - AICPA's Accounting and Valuation Guide on Business Combinations**
- ▶ **AICPA Quick Reference Guide to Valuing Assets in Business Combinations**

Resources, continued

- ▶ **Big 4 Business Combination reference guides**
- ▶ **Appraisal Foundation – Adopted Valuation Advisories**
 - Identification of Contributory Assets and Calculation of Economic Rents – Publication and Toolkit
 - The Valuation of Customer-Related Assets
- ▶ **Fair Value Measurement, Second Edition, Mark Zyla, John Wiley & Sons, Inc.**
- ▶ **Valuation for Financial Reporting, Mard, Hitchner, Hyden, John Wiley & Sons, Inc.**
- ▶ **Appraisal Foundation – Valuation Advisories Under Development**
 - Control Premiums for Financial Reporting
 - Valuing Contingent Consideration

Questions and Thank You



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