



# Why Fair Value? Valuing Illiquid Investments

WEBINAR | 12<sup>TH</sup> OCTOBER 2017 | 10AM EST

- ◆ The valuation of private assets - whether equity, debt, real estate or the more esoteric classes of infrastructure, commodities, etc. - has always been a challenging task. Typically illiquid, and frequently complex, private asset classes usually require the deployment of sophisticated techniques and methodologies, and specialist data sets. This is not a job for the amateur!
- ◆ The sector has experienced spectacular growth over the last few years, as institutional investors search out yield for their burgeoning cash piles. Private assets under management in 2016 were close to \$5trn and this is forecast to triple in size over the next 5 years. Increasingly, traditional public asset managers are entering the sector - 66 percent of annual fundraising for technology start-ups in 2016 came from this source.
- ◆ With mom and pop's pension and the kids college fees now becoming exposed to what was previously a professionals market, the regulators are becoming increasingly active and vigilant. Valuations especially are coming under unprecedented scrutiny, and the SEC has been encouraging a process to make these more consistent, transparent and defensible.
- ◆ In response to this, Voltaire Advisors and Duff & Phelps have co-operated to produce a series of web briefings on the subject. Over three sessions we will cover some of the key topics investment funds need to be alert to, and apprised of, when it comes to complying with regulatory rules and industry best practice in private asset valuation.



## David L. Larsen, CPA

Managing Director,  
Alternative Asset Advisory  
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DUFF & PHELPS

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# Why Fair Value? Valuing Illiquid Investments

October 2017

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# Agenda

- Fair Value Background
- Valuing using Level 3 inputs - what does it mean?
- When is cost fair value?
- Unicorns - Can they be reliably valued?
- Other Valuation Matters

# Regulatory Affiliations

Duff & Phelps advises the world's leading standard setting bodies on valuation issues and best practices.



U.S. Securities and  
Exchange Commission



**International  
Accounting Standards  
Board**

International Accounting  
Standards Board



Financial Accounting  
and Standards Board



**Appraisal  
Institute™**  
*Professionals Providing  
Real Estate Solutions*

Appraisal  
Institute



American Institute  
of CPAs



International Valuation  
Standards Council



**The  
Appraisal  
Foundation**

The Appraisal  
Foundation



Institute of Management  
Accountants

# Portfolio Valuation Advisory Services

*Duff & Phelps assists clients with **design and implementation of best-in-class valuation policies and processes**, including on-going review of valuation procedures and conclusions to ensure best practices.*

## Market Leader

- We review over **5,000 illiquid investment positions** with an aggregate value of approximately **\$225 billion** on a quarterly basis.
- Our client base consists of over **350 alternative asset fund managers and investors**, including:
  - **80% of the 10 largest** private equity firms
  - **40% of the 50 largest** hedge funds
  - **70% of the 10 largest** BDCs
  - Investors – ranging from small family offices to large public pension funds and Sovereign Wealth Funds

## Thought Leader

- We are at the forefront of the industry's leading committees on valuation processes, guidelines, and regulations:
  - **IPEV** – Vice Chair
  - **ILPA** – Special Advisor
  - **AICPA PE/VC Valuation Guide Task Force** – Member
  - **FASB Valuation Resource Group** – Member
  - **Managed Funds Association** – Sustaining Member
  - **AIMA – Guide to Sound Practices For the Valuation of Investments Working Group**
- Leadership in drafting **IPEV** and **PEIGG** private equity valuation guidelines
- Author of *Private Equity Valuation – The definitive guide to valuing investments fairly*
- Development of Duff & Phelps Created Value Attribution Framework.

# David L. Larsen, CPA, CGMA, ABV, CEIV

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David Larsen is a managing director in the San Francisco office of Duff & Phelps and part of the Portfolio Valuation service line. He has more than 30 years of transaction and accounting experience. He specializes in fair value accounting issues, and specifically in valuation, accounting, and regulatory issues faced by Alternative Asset managers and investors.

David advises leading Private Equity Managers and Institutional Investors and has advised numerous strategic and private equity acquirers in all areas of mergers, acquisitions, joint ventures, divestitures and valuation related matters. He provides valuation policy and process assistance to a number of the world's largest institutional limited partner investors and some of the world's largest alternative Investment managers. David is an advisor to and has served as Vice Chair of the International Private Equity and Venture Capital Valuations Board (IPEV), which in 2015 released updated International Private Equity Valuation Guidelines and serves as a member of the American Institute of Certified Public Accountants (AICPA) PE/VC Practice Guide Task Force. David has served as a special advisor to the Institutional Limited Partners Association; board member, project manager and technical advisor to the Private Equity Industry Guidelines Group and was instrumental in developing and drafting the Private Equity Industry Guidelines Group's Valuation and Reporting Guidelines; member of the Financial Accounting Standards Board's Valuation Resource Group responsible for providing the Board with input on potential clarifying guidance on issues relating to the application of the principles of FASB ASC Topic 820 (formerly SFAS No. 157), *Fair Value Measurements* and a member of the AICPA Net Asset Value Task Force.

Prior to joining Duff & Phelps, David was a Partner in KPMG LLP's Transaction Services practice, where he was the segment leader of KPMG's U.S. Institutional Investor practice. He served 13 years in KPMG's Seattle, Düsseldorf and Prague audit practices prior to moving full time to advisory work.

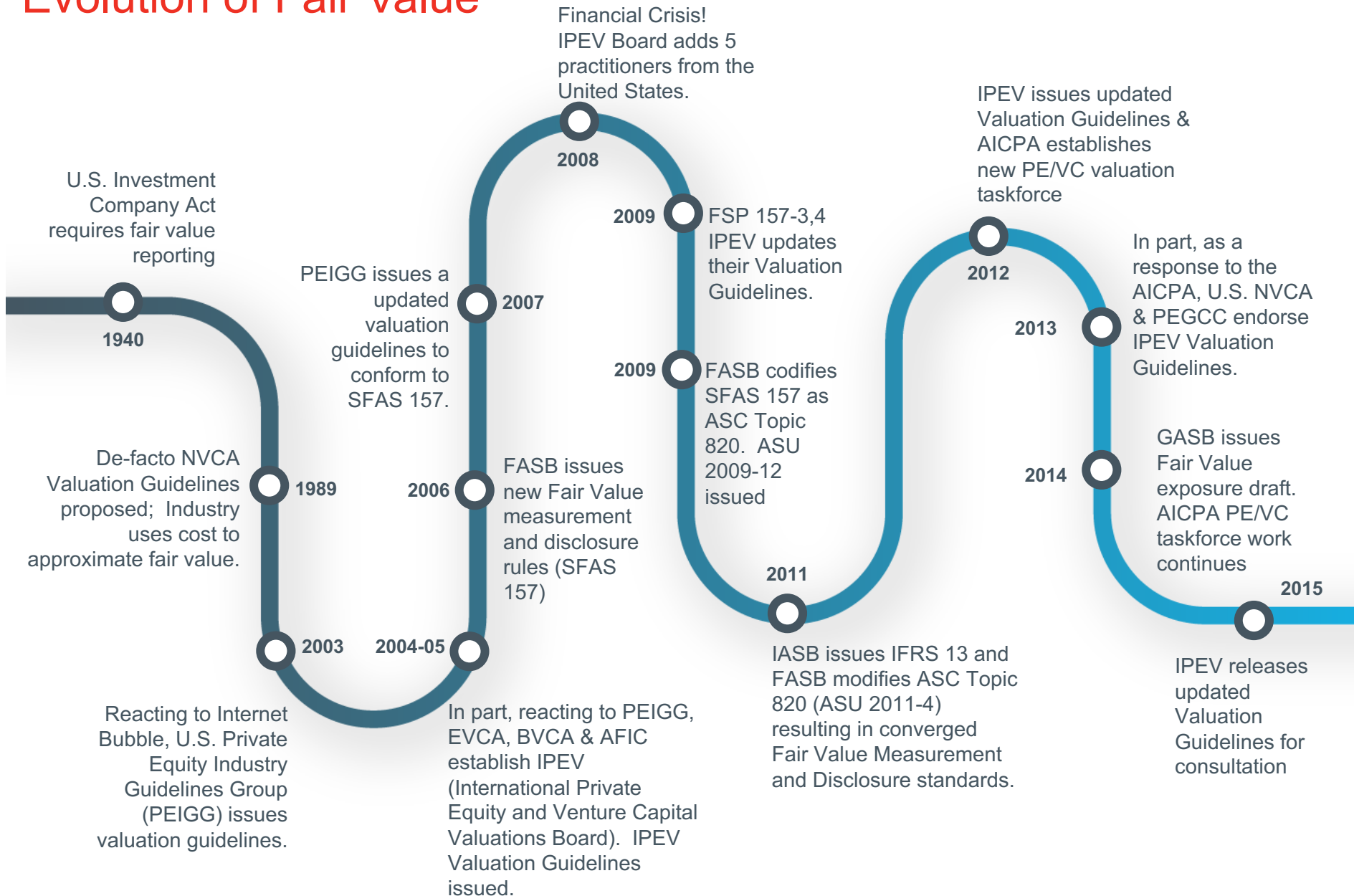
David received his M.S. in accounting from Brigham Young University's Marriott School, his B.S. in accounting from Brigham Young University. He is a certified public accountant licensed in California and Washington. David is also a member of the AICPA and the California and Washington Society of Certified Public Accountants and is a FINRA Series 7, 24 and 63 registered representative.

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1.

## Fair Value Background

# Evolution of Fair Value



# Fair Value Definition has Aligned!

## Fair Value is defined by:

- FASB ASC Topic 820 (fka SFAS 157),
- IFRS 13, and
- GASB (US Government Accounting Standards Board) Statement 72

as:

***... the price that would be received TO SELL an asset or paid to transfer a liability in an ORDERLY transaction between market participants at the measurement date.*** (emphasis added)

## Key Considerations:

- Unit of Account
- Calibration
- Market Participant Assumptions
- Orderly transaction
- How does Value Accrete?

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2.

Valuing using Level 3 inputs—what does it mean?

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# Level 3 Valuations

Historically most Mutual Fund's invested in assets classified as level 1 or level 2 (valued using observable inputs)

Increasingly MFs are investing in “private” investments requiring consideration of:

- Valuations using level 3 inputs (does the Fund have a framework for valuation)
- Impact of the 15% illiquid rule
- Impact on disclosure buckets

## **Valuing Unicorns & other early stage investments:**

- Last Round?
- Differences in rights?
- Consideration of milestones/performance
- Pressure for transactions, but limited secondary exchanges

# Valuation and Input Hierarchy

## Level I Inputs

- Quoted prices (unadjusted) in active markets for identical assets or liabilities at the valuation date
- Active Market, is a market in which transactions for the asset or liability occur with sufficient frequency and volume to provide pricing information on a meaningful and ongoing basis

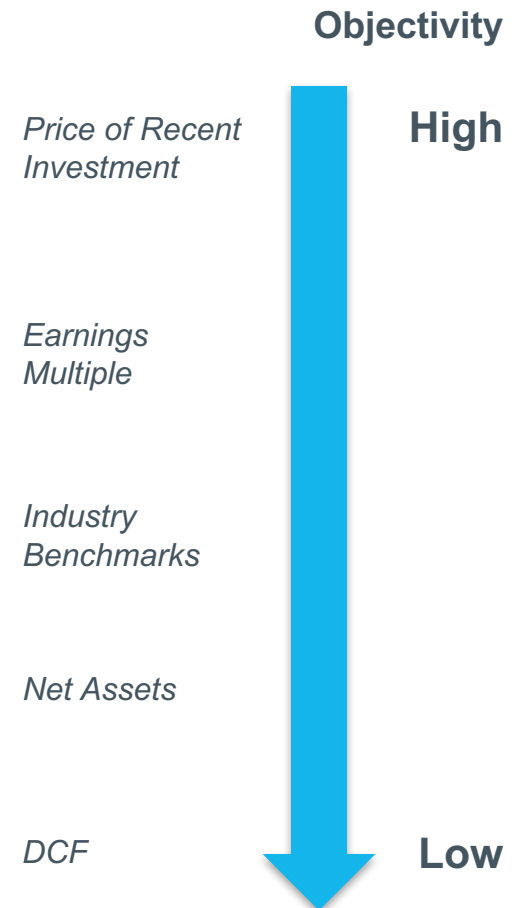
## Level II Inputs

- Quoted (bid / exit value) prices for similar assets or liabilities in active markets, or bids in markets that are not active, if the transaction is representative of what the subject asset or liability would transact at (actionable broker quotes)
- Inputs other than quoted prices that are observable and most market participants would consider in pricing the subject asset or liability (i.e., interest rates, volatilities, prepayment speeds, loss severities, credit risks, default rates, etc.), represented by objective market data
- Pricing service's reports for homogeneous securities

## Level III Inputs

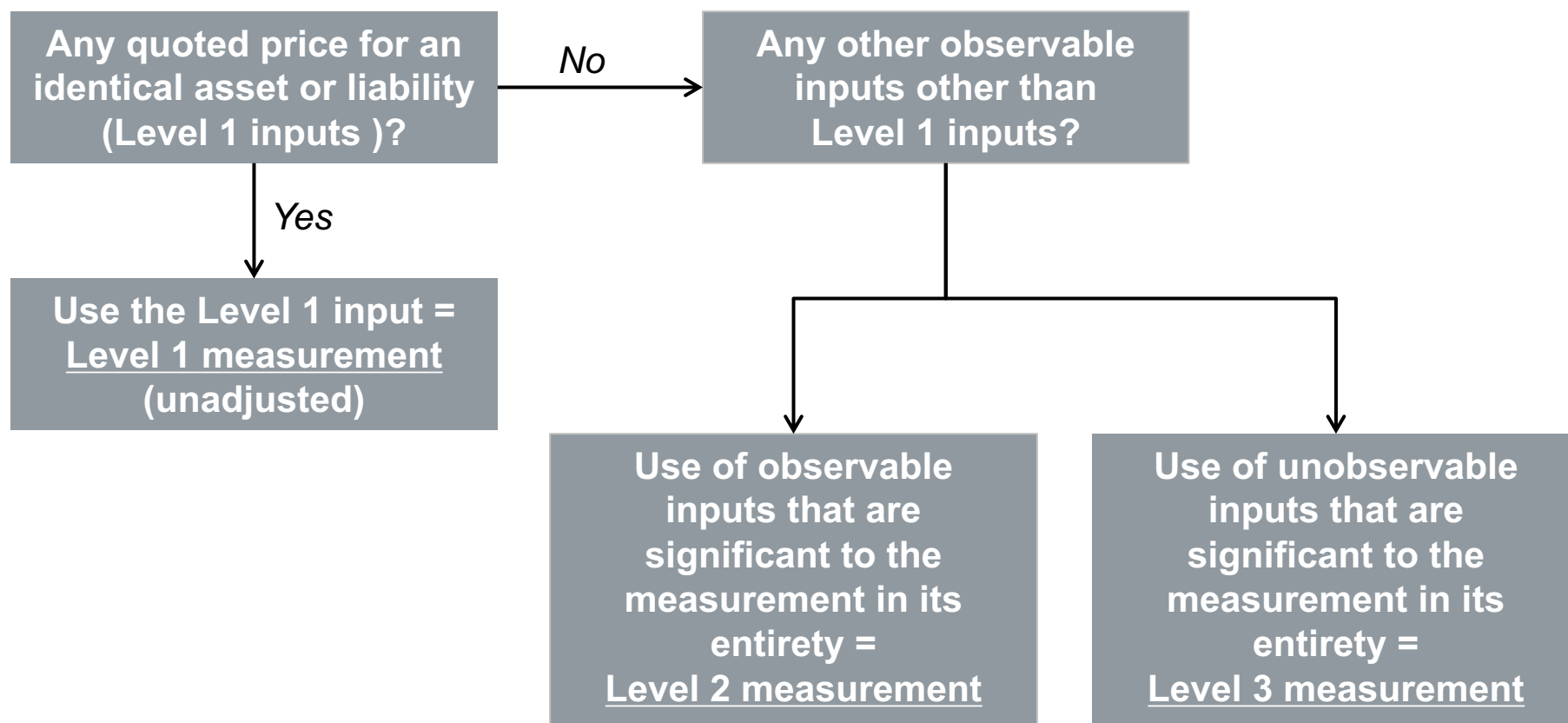
- Unobservable inputs for the asset or liability
- Reflect the reporting entity's own assumptions about the assumptions that market participants would use in pricing the asset or liability
- Should be developed based on the best information available under the circumstances

## Valuation Hierarchy

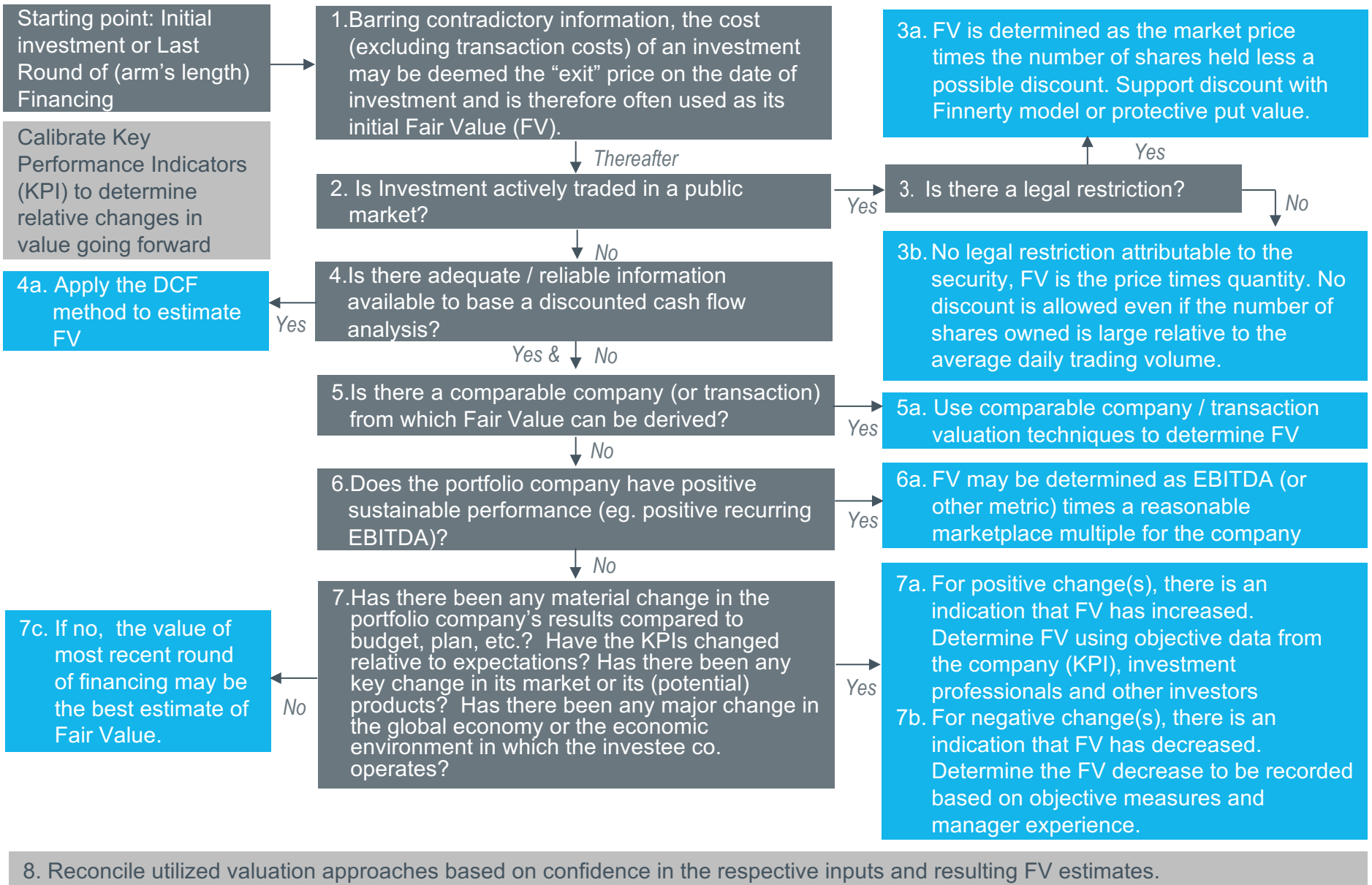


# Valuation Guidelines and Standards

- Fair value hierarchy established ASC 820 categorizes the inputs used to perform fair value measurement according to 3 levels as shown in exhibit below.



# Valuation Decision Tree



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# Calibration

- Calibration is required by ASC Topic 820 when the initial transaction is at Fair Value
- Calibration is the process of using observed transactions in the portfolio company's own securities, especially the transaction in which the Fund entered a position, to ensure that the valuation techniques that will be employed to value the portfolio company investment on subsequent measurement dates begins with assumptions that are consistent with the observed transaction
- On the transaction date, when the transaction price represents fair value, calibrated inputs used with applicable valuation techniques will indicate that the fair value of the portfolio company investment equals the transaction price

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## Calibration (cont'd)

- When utilizing calibration with a market approach, we are attempting to capture the change in the market and underlying Company since entry
- We can do this through a few primary methodologies, including but not limited to:
  - Identifying a relevant index, and applying the change in that index since origination to our entry multiple;
  - Identifying relevant comparable companies as a proxy for an index, calculating the change in the comparable company multiples, and applying the overall change in these multiples to our entry multiple; and/or
  - Identifying for a universe of comps that would be identified by a likely buyer and calculating multiples for these comps at our acquisition date, estimating the premium/discount implied by these comps vs. the entry multiple, calculating the multiples for these comps as of our valuation date, and applying our entry discount/premium from entry to the comp multiples as of the valuation date.
- These input assumptions should then be updated to reflect changes in the investment and market conditions at subsequent measurement dates

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## Calibration (cont'd)

- Simple Example:
  - Company is purchased at a 10x multiple of EBITDA
  - Comparable companies are trading at 12x EBITDA
  - At future measurement dates, based on facts and circumstances, determine if the 2x difference should remain, increase or decrease, when determining the multiple used to determine fair value with respect to movements in the comps

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# Calibration Example – Market Approach

For Private Equity investments, we can typically calibrate a Market Approach and/or Income Approach used to price the deal to reflect new information as of the Valuation Date

Going back to our simple calibration example...

- Company is purchased at 10x EBITDA while closest comp is at 12x EBITDA
- As of the Valuation Date, comps multiple has moved to 15x EBITDA

## Questions

- Should we continue to apply a 2x (or alternatively 16.7%) discount to the comp multiple?  
Why/Why Not?
- Should discounts/premia be considered?
- Why not just mark to the median of the comps?

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# Calibration Example – Income Approach

- A basic Income Approach utilizes deterministic cash flows which reflect the expected case for a business.
- If we can use cash flows and the implied TEV at entry, we can estimate the implied IRR as of the transaction date. We can then use the difference (the “alpha”) between the IRR and either WACC or VC rate as a basis to recalibrate to a relevant discount rate as of the Valuation Date

## Questions

- How have the projections changed? Are they more/less risky? Should I increase/decrease the alpha?
- Should I use a hurdle rate instead of a traditional discount rate (i.e. WACC)?

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3.

When is cost fair value?

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# Valuation Guidelines and Standards (cont'd)

## Market Approach

### 1. Price of Recent Investment

- Where a recent investment is made in the Investee Company, the price will provide a good indication of fair value
- Key Considerations:
  - Background of transaction
  - Price might not wholly representative due to:
    - i. A further investment by the existing stakeholders with little new investment;
    - ii. Different rights attached to the new and existing investments;
    - iii. A new investor motivated by strategic considerations;
    - iv. The investment may be considered to be a forced sale or rescue package; and
    - v. The absolute amount of the new investment is relatively insignificant.

# Valuation Guidelines and Standards (cont'd)

## Market Approach

### 1. Price of Recent Investment (cont'd)

- Key Considerations:
  - Length of period
    - Depends upon specific circumstances of the case
    - Some use a period of six months to a year as a rule of thumb—however, at each measurement date Fair Value should be reassessed
    - Valuer should assess whether changes or events subsequent to the relevant transaction would imply a change in the investment's fair value
    - For early stage investments, some of the agreed upon milestones could be:

#### Financial Measures

- Revenue growth
- Profitability expectations
- Cash burn rate
- Covenant compliance

#### Technical Measures

- Phases of development
- Testing cycles
- Patent approvals
- Regulatory approvals

#### Marketing & Sales Measures

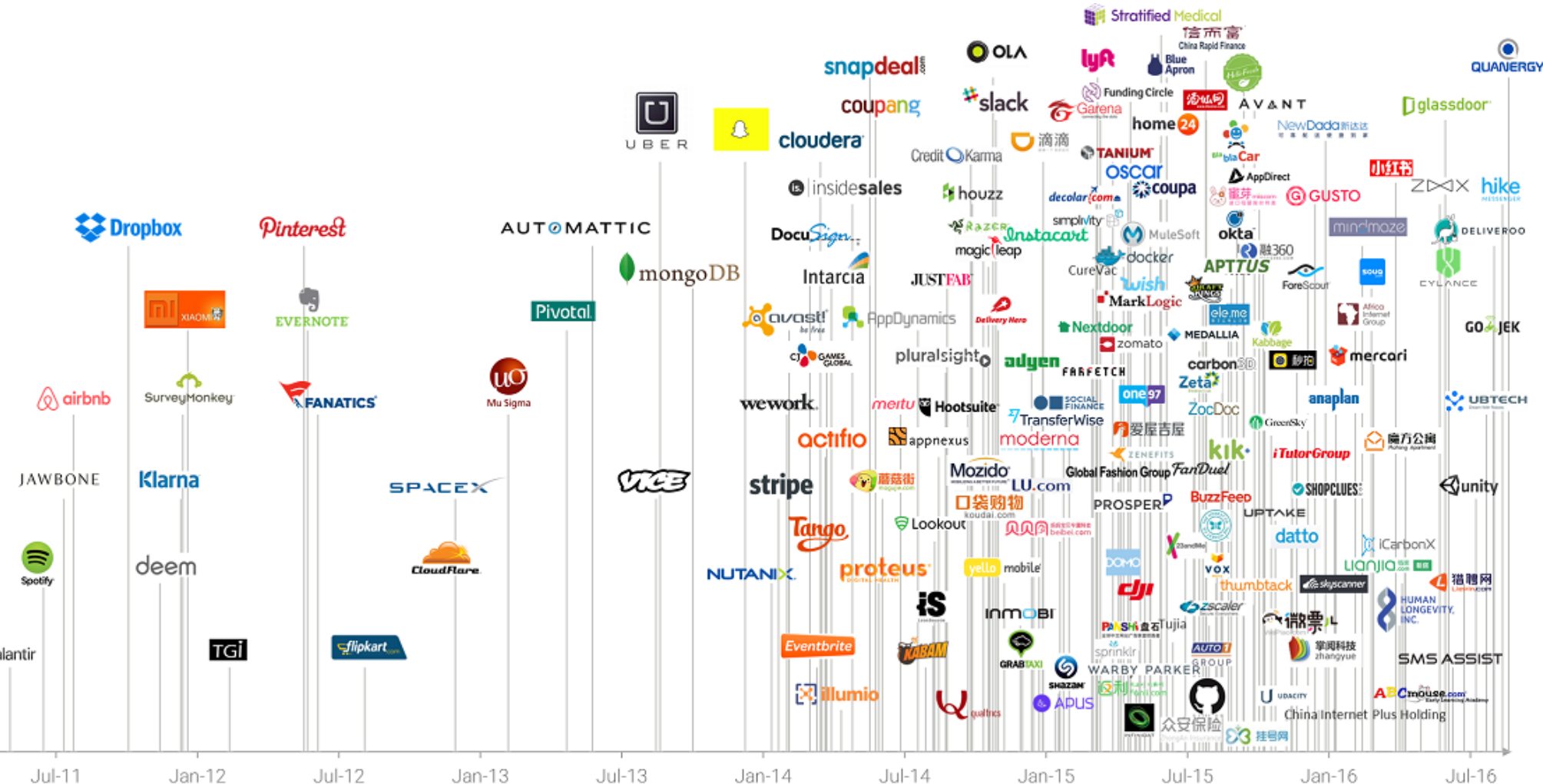
- Customer surveys
- Testing phases
- Market introduction
- Market share

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4.

Unicorns—Can they be reliably valued?

# Now over 170 Unicorns



Lofty paper valuations, massive burn rates (and the subsequent need for more cash), and unprecedented low levels of IPOs and M&A

# Top 20 Unicorns

*Current Private Companies Valued At US\$1 Billion & Above*

| Company                     | Valuation (US\$ Bn) | Country       | Industry               |
|-----------------------------|---------------------|---------------|------------------------|
| Uber                        | 68                  | United States | On-Demand              |
| Xiaomi                      | 46                  | China         | Hardware               |
| Didi Chuxing                | 33.8                | China         | On-Demand              |
| Airbnb                      | 30                  | United States | E-commerce/Marketplace |
| Palantir Technologies       | 20                  | United States | Big Data               |
| Lufax                       | 18.5                | China         | Fintech                |
| China Internet Plus Holding | 18                  | China         | E-commerce/Marketplace |
| Snapchat                    | 18                  | United States | Social                 |
| WeWork                      | 16                  | United States | Facilities             |
| Flipkart                    | 16                  | India         | E-commerce/Marketplace |

*Source: CB Insights*

# Top 20 Unicorns

*Current Private Companies Valued At US\$1 Billion & Above (cont'd)*

| Company               | Valuation (US\$ Bn) | Country       | Industry                     |
|-----------------------|---------------------|---------------|------------------------------|
| SpaceX                | 12                  | United States | Other Transportation         |
| Pinterest             | 11                  | United States | Social                       |
| Dropbox               | 10                  | United States | Internet Software & Services |
| DJI Innovations       | 10                  | China         | Hardware                     |
| Spotify               | 8.5                 | Sweden        | Internet Software & Services |
| Zhong An Insurance    | 8                   | China         | Fintech                      |
| Snapdeal              | 7                   | India         | E-commerce/Marketplace       |
| Lianjia               | 6.2                 | China         | E-commerce/Marketplace       |
| Lyft                  | 5.5                 | United States | On-Demand                    |
| Intarcia Therapeutics | 5.5                 | United States | Healthcare                   |

*Source: CB Insights*

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# How to Value a Unicorn.

## Valuation Issues

- Deal environment ‘At what price will somebody who doesn’t need my money take my money?’
- Macro – supply and demand for VC capital good, but competition also has access to capital
- New rules
  - \$30mm raised in 1999 before an IPO was considered large
  - Today’s standard 10x that and more, consequently higher burn rates
- Ability to remain private well past the time firms historically would have gone public
  - 1999 record valuations coexisted with record IPOs
  - 2015 was the exact opposite
  - 2016 long runways without need for external influence
- Tide is shifting out ?
  - From Fortune’s “Age of the Unicorns” to “Silicon Valley’s \$585 Billion Problem: Good Luck Getting Out.”
  - Some mutual funds discounting their holdings
  - Secondary deals demonstrate higher discounts recently for funds with unicorns
  - Tech companies like Box and Hortonworks (HDP) have been unable to hold public values that exceed their previous private valuations

# How to Value a Unicorn, (continued)

Many biases bring potential irrationality to the Unicorn fundraising environment:

- Vintage - current/recent Founder/CEOs have never experienced a difficult fundraising
  - strong belief that any sign of weakness (such as a down round) will have a catastrophic impact on their culture, hiring process, and ability to retain employees
- Investors sitting on amazing paper-based gains
  - recorded as a success by their own investors — the LPs
  - write-downs could impede their ability to raise their next fund
- A race for the exits
  - fear of downward price movement may create desperate grab at immediate liquidity
  - lengthened liquidity timing can cause parties on both sides to take a “me first” perspective.



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## How to Value a Unicorn, (continued).

- Imbedded terms where valuation adjustment does not happen now, but will happen later
  - Economic gains for the investor come not from the headline valuation, but rather through a series of terms that are hidden deeper in the deal documents
    - Guaranteed IPO returns
    - Ratchets
    - PIK Dividends
    - Series-based M&A vetoes, and
    - Superior preferences or liquidity rights
  - Valuation requires a complex analysis
    - Terms requiring returns to be calculated first; the left over is shared by all
    - Recognize that complexity could render future financings all but impossible
    - Heightened risk of either running out of money or a complete recapitalization that wipes out previous round values

# How to Value a Unicorn, (continued)

## Valuation Considerations

- Use as many data points as possible
  - Latest rounds (understanding all material terms)
  - Secondary deals
  - Previous rounds and representative change in value
    - Milestone progress and prior expectations
    - Typical or stage
    - Benchmarked firms / industry / market (related public market cap. growth)
- Calibrate a scenario based model
  - Include good, bad and unthinkable scenarios (at a minimum zero/negative and IPO success)
  - Discount at high beta cost of equity
- Deal terms, earnestly deliberate about the effect on value
  - At liquidation, and
  - For other securities
- Understand the difference of a disruptive business model vs. the need for future earnings
  - The vast majority of post-IPO value is garnered by “category kings,” which carve out entirely new niches that are largely “winner take all”
  - Category kings like Facebook, LinkedIn, and Tableau captured 75% of the market
- Recognize the last round is not the permanent price
- Avoid the tendency to lump all unicorn companies together as “tech,” unicorns are micro-segments that can experience dramatically different dynamics
- Recognize unicorn markets emerge rapidly, grow exponentially, consolidate suddenly and normalize ruthlessly

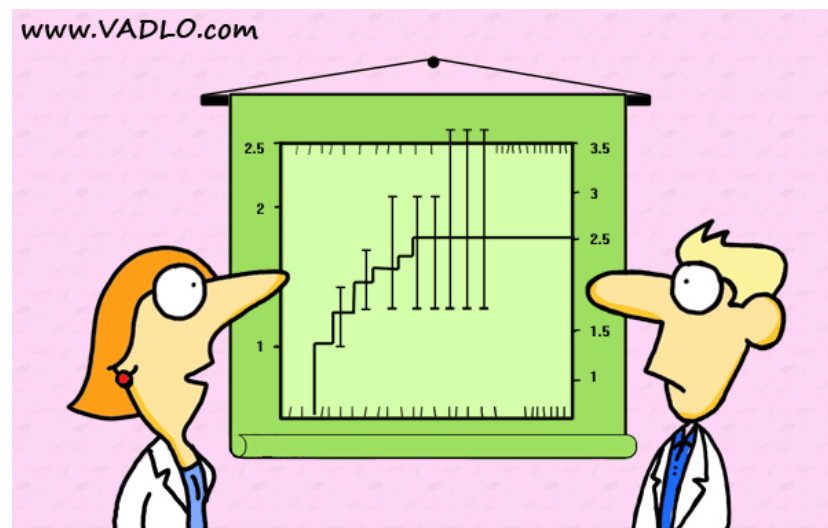
# Transaction price verses Fair Value

## Why deal pricing may not represent Fair Value

- Motivation of seller and buyer
- Process (private placement, auction, or other details such as over/under subscribed)
- Rights and Provisions that change over time or with future events
- Contingencies
- Strategic investor
- Existing OR related owners
- Information asymmetry

## Other Considerations

- One-way investing (no arbitrage opportunity)
- Limited parties or limited access to deals
- Small ownership percentage (magnification affect)
- Rights different for certain classes of equity
- Probability of success changes the importance of certain rights
- Dilution (current mgmt. shares and future investments)
- Venture partners ability to add-value (lower price paid? able to sell at a premium?)



“Did you really have to show the error bars?”

# How to Value a Unicorn, (continued).

- Look for signs of why startups fail
  - No market need – building a solution looking for a problem instead of serving a market need
    - Customer demand (pain point)
    - Bad side-effect of solution (efficient Dr. office not more patients)
    - Scalable
  - Ran out of cash
    - Failure to meet critical milestone, efficiently and timely
    - Failed pivots
    - Investor fatigue
  - Management team
    - Diverse with key skillsets covered
    - Appropriate checks and balances in decision making
  - Outcompeted – best offering in comparison to other potential or substitute providers
  - Pricing / cost issue
    - Customer churn
    - Lack of profitability at critical mass point
  - Poor performance and lack of adoption
    - Product performance
    - Business model errors and issues
    - Customers not understood
    - Timing
    - Lost focus
  - Disharmony with team and or investors

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5.

## Other Valuation Matters

# Competing Definitions?

Overlapping classifications could create confusion

- Disclosure buckets—Time to Convert To Cash
- Liquid/Illiquid—Sold within 7 days
- Financial Reporting—Level 1, 2, 3 Valuation Inputs

## *Example—Unicorn*

- Classified as Level 3; Valued using unobservable inputs
- Liquid—Could be sold within 7 days
- <30 days—May require time for proceeds to be received

## *Example—Foreign Exchange Traded Security*

- Classified as Level 1; Valued at  $P \times Q$
- Liquid—Could be sold within 7 days
- <30 days—May require time for proceeds to be received

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# Open Questions

- Given the liquidity judgments, will disclosures between funds be comparable?
- Suspended Trading—How should shares be valued? In which bucket should the be disclosed?
- Bifurcating securities among disclosure buckets—Is pricing impacted or only disclosure?
- Should FASB revisit P\*Q given that fund's may need to disaggregate holdings for liquidity disclosure and analysis purposes?
- Will three day minimum % of liquid assets be determined consistently?
- Will the changes protect investors?

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# Valuation Best Practices

1. Use most relevant & reliable inputs (may be from the portfolio manager / deal team)
2. Independence of valuation process – internal / external
3. Emerging best practices
  - Mandatory Performance Framework (MPF) – associated with CEIV (Certified in Entity and Intangible Valuation)
  - Use of qualified, experienced, external expert
  - Proposed Credential: CVFI (Certified in Valuation of Financial Instruments)
  - International Valuation Standards Council (IVSC) Guidelines
4. Using Guidelines
  - International Private Equity and Venture Capital Valuation Guidelines
  - Anticipated AICPA PE/VC Valuation Guide
  - AIMA Valuation Practices Guide

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# Where can we find Fair Value Guidance?

- IPEV Valuation Guidelines ([www.privateequityvaluation.com](http://www.privateequityvaluation.com))
- PEI: *Private Equity Valuation: The Definitive Guide to Valuing Private Equity*
- AICPA TIS 2220 Long Term Investments (provides guidance on using NAV for valuing an LP interest)
- AICPA TIS Section 6910:34 Application of the Notion of Value Maximization for Measuring Fair Value of Debt and Controlling Equity Positions
- AICPA TIS Section 6910:35 Assessing Control When Measuring Fair Value
- AICPA PE/VC Valuation Guide (expected publication in 2017?)
- Your Duff & Phelps service team.

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QUESTIONS?

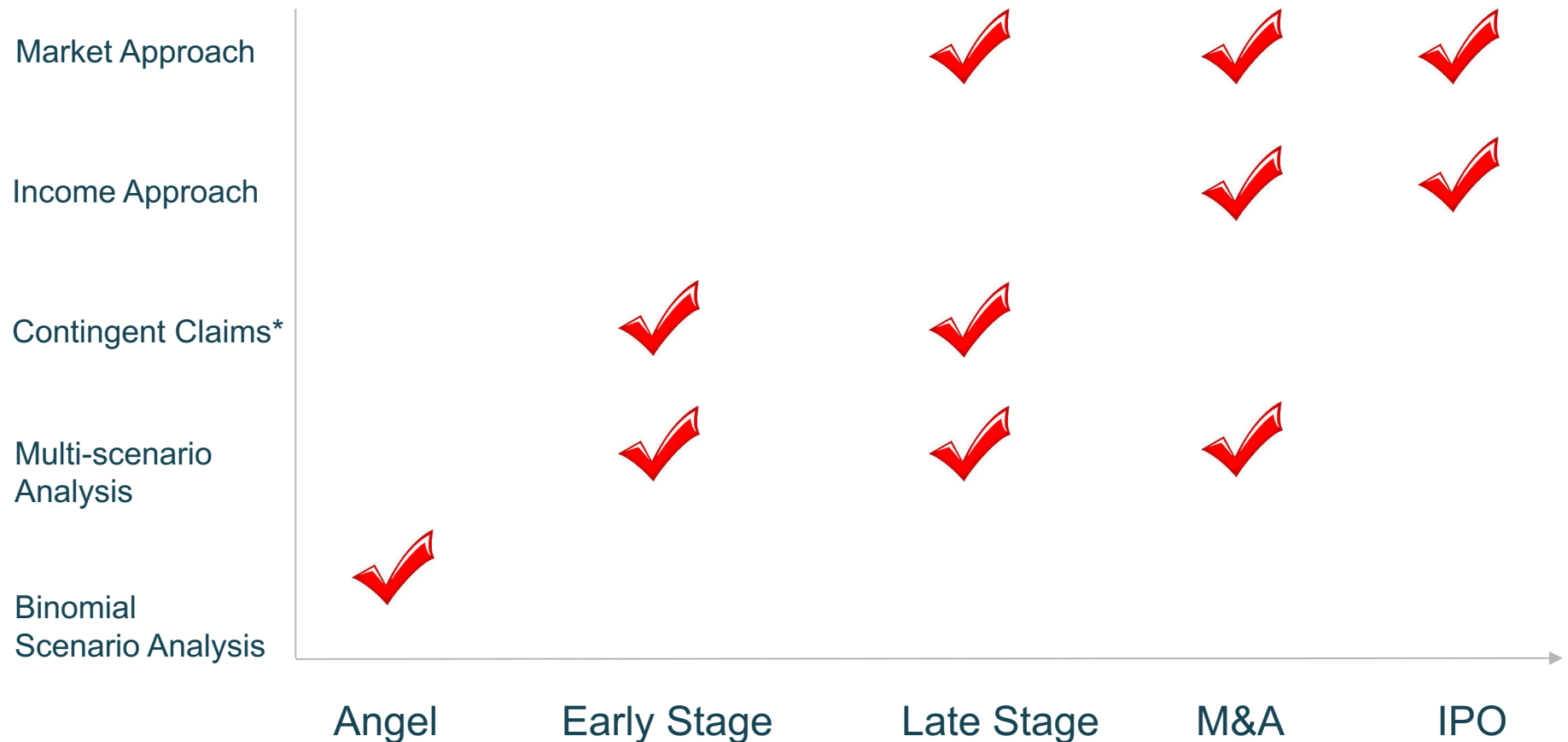
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Appendix A

# Additional Information

# Valuation Methodologies to Consider Across Life Cycle



\*Contingent Claims should only be considered in instances where outcome has potential to be normally distributed

# Valuation Tension

## ASC Topic 820:

- Actively traded assets (sufficient volume and frequency to determine a price—generally exchange traded)
- By rule valued at  $P * Q$
- No blockage discount allowed

## Proposed New Rules:

- Disclosure buckets driven by time to convert to cash
- Large holdings likely split between buckets

## SEC historical viewpoint:

- No blockage discount

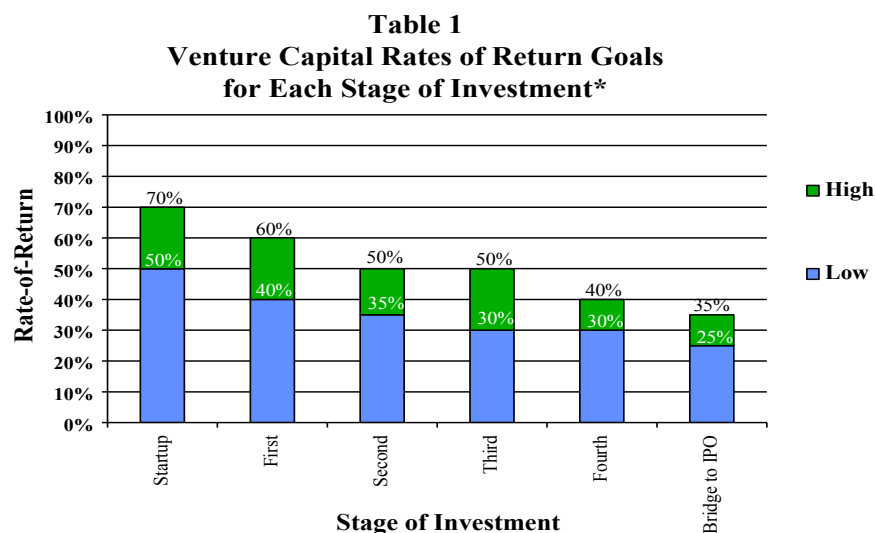
Should FASB revisit  $P*Q$ ?

“Unicorns!” Where do they fit? How and how often should they be valued?

# Enterprise Valuation – Valuation Methodologies

## Income Approach – Simple Scenario Analysis

- Good for mature businesses , however early stage companies often have insufficient operating results for traditional methods to be meaningful.
- Modified Income Approach can be used
- Deterministic cash flows aren't necessarily the expected case for VC investments, as the true result will be more binomial.
- Key cash flows to consider
  - Exit value (and probability of success); derived from comp M&A, IPO or assumptions about growth and margin
  - Total investment needed to get to exit value(s) / Cash Burn including operating loss, capex and working capital needs
  - Dilution from future rounds
- Discount Rate



## Return Studies “Required”

| Stage of Development               | <u>Plummer[1]</u> | <u>Scherlis and Sahlman[2]</u> |
|------------------------------------|-------------------|--------------------------------|
| Start-up                           | 50% - 70%         | 50% - 70%                      |
| First Stage or “Early Development” | 40% - 60%         | 40% - 60%                      |
| Second Stage or “Expansion”        | 35% - 50%         | 30% - 50%                      |
| Bridge/ IPO                        | 25% - 35%         | 20% - 35%                      |

**Actual return approximately 15%**

[1] Plummer, James L., QED Report on Venture Capital Financial Analysis (Palo Alto: QED Research, Inc., 1987).

[2] Scherlis, Daniel R. and William A. Sahlman, A Method for Valuing High-Risk, Long Term, Investments: The Venture Capital Method (Boston: Harvard Business School Publishing, 1987).

# Enterprise Valuation – Valuation Methodologies (Continued)

- **Last Round of Financing (LRF)**
  - What enterprise value was implied by the last round?
  - What has happened since the last round? Analyze quantitative and qualitative factors that would impact value.
  - How is the ownership percentage determined for the post-money valuation?
- **Adjusted Last Round of Financing (ALRF)**
  - Progress on Milestones?
  - Conversion of cash to intangible asset (IP, market awareness, partnership and customers)
- **Next Round of Financing (NRF)**
  - Have negotiations started for the next round?
  - What are the risks in closing the round?
- **Scenario Analysis**
  - Estimates the Fair Value of a company (or security) based upon an analysis of expected future cash flows generated from potential liquidity events.

# Enterprise Valuation – Valuation Methodologies (Continued)

| Methodology                    | Pros                                                                                                                   | Cons                                                                                                                                                                                                |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Income Approach</b>         | <ul style="list-style-type: none"><li>• Ease of use</li><li>• Required Return studies available</li></ul>              | <ul style="list-style-type: none"><li>• Reasonableness of cash flows subjective</li><li>• Do not represent binomial nature of expected payouts</li></ul>                                            |
| <b>Last Round of Financing</b> | <ul style="list-style-type: none"><li>• Allows for calibration to last round</li></ul>                                 | <ul style="list-style-type: none"><li>• Must utilize Scenario Analysis or CCA to imply last round TEV, then adjust for subsequent events</li><li>• Last round price may now be irrelevant</li></ul> |
| <b>Next Round of Financing</b> | <ul style="list-style-type: none"><li>• May be most relevant indication if a round is expected to close soon</li></ul> | <ul style="list-style-type: none"><li>• Must utilize Scenario Analysis or CCA to imply future round post-money TEV</li><li>• Risk of proposed price must be considered</li></ul>                    |
| <b>Scenario Analysis</b>       | <ul style="list-style-type: none"><li>• Can help model actual scenarios (e.g. Success to Failure)</li></ul>            | <ul style="list-style-type: none"><li>• Subjective and risk of complexity (Calibration to prior round can make it more objective).</li></ul>                                                        |

# Common Conventions in the VC Space and Potential Concerns

- **Reliance on headline firm value based on Latest Round of Financing (“LRF”) and on a fully-diluted basis**
  - Concerns: LRF may be an internal round, led by strategic investors, motivated by a limited number of private investors, terms may vary across securities, lack of visibility and information, uncertain access to future capital, small stakes implying significant valuations, etc.
- **LRF used as indication of value for all securities**
  - Concerns: LRF is specific to the security funded, not indicative of value for all securities
- **Not properly assessing the value of rights and preferences**
  - Concerns: Not appropriately ascribing value to rights and preferences such as liquidation preferences and seniority, participation rights, conversion rights, anti-dilution ratchets, control and liquidity rights, etc.
- **No change in value until there is a Next Round of Financing (“NRF”)**
  - Concerns: Does not consider company performance or progress against milestones, timing or likelihood of a capital raise, liquidity constraints, etc.

# Capital Structure Value Estimation

- The Fair Value of a security can be estimated based on the value of the Company as a whole and the financial claim (seniority and other option rights) that a security has over the value of the Company or its assets.
- Two simplistic methodologies are commonly used by clients and practitioners when valuing securities in a VC investment:
  - **Immediate Liquidation**
    - What would be received by the holder of the security if the Company was liquidated today?
    - Pros: Easy to calculate, can provide a reasonable approximation of value if a near-term liquidity event is highly probable
    - Cons: When assuming immediate liquidation, does not consider the option value of out-of-the-money securities, and therefore overstates the value of senior securities
  - **Fully Diluted Basis**
    - What percentage of common shares would be held by the holder of the security If all securities were to convert to common? What is the implied value of that percentage ownership?
    - Pros: Easy to calculate
    - Cons: Assumes value will increase to the point where all preferred shareholders convert, and understates the value of the rights and preferences of senior securities

As you can see, each has significant limitations.

# Securities Value Estimation

- Examples, assuming the following capital structure:

| Security      | Liq Pref | Dividend | Inv (per share) | Total Shares |
|---------------|----------|----------|-----------------|--------------|
| Series B (sr) | 2X       | 0%       | \$10            | 100          |
| Series A (jr) | 1x       | 0%       | \$1             | 100          |
| Common        | N/A      | N/A      | \$0.02          | 100          |

## – Immediate Liquidation

- Assume we have \$1,000 in assets
- The liquidation preference for the Series B is \$2,000. Given the Series B is Senior to the Series A and common, all asset value is allocated to Series B given an immediate liquidation scenario.

## – Fully Diluted Basis

- If we assume Series B shares are worth \$10 per share, we assume all other securities are worth \$10 per share. Given this, our implied enterprise value is an implied \$3,000
- Typically, when people state “pre-money” and “post-money” this is the basis they consider. As of the Series B round, \$2,000 would be the “pre-money” and \$3,000 the “post-money”
- If we assume \$1,000 in TEV, each share will be worth \$3.33, as all shares are assumed to be equal in value.

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Appendix B

# About Duff & Phelps

# Duff & Phelps

## Dedicated to Delivering Value

### Valuation and Corporate Finance Advisors

- More than 10,000 engagements performed in 2015
- 5,000 clients including more than 40% of the S&P 500

**2,000+ Employees in more than 70 offices globally**

### Advisory Capability

- Valuation Advisory
- Alternative Asset Advisory
- Compliance and Regulatory Consulting
- Disputes and Investigations
- Legal Management Consulting
- M&A Advisory
- Restructuring Advisory
- Tax Services
- Transaction Opinions

### HISTORY

- **1932-1994**  
Duff & Phelps founded and evolves into diversified financial services firm
- **1994**  
Credit ratings business spun-off
- **2005**  
Acquired Corporate Value Consulting (CVC) from Standard & Poor's
- **2007-2012**  
Listed on the NYSE  
  
Financial advisor to examiner in Lehman Brothers bankruptcy  
  
Engaged by the Congressional Oversight Panel on the Troubled Asset Relief Program  
  
Acquired 14 complementary businesses to expand our service offering
- **2013**  
Taken private by an investor consortium led by The Carlyle Group
- **2015**  
Acquired Kinetic Partners and launched Compliance and Regulatory Consulting practice
- Acquired American Appraisal, significantly enhancing our global Valuation practice
- **2016**  
Acquired CounselWorks to expand Compliance and Regulatory Consulting practice

# More Than 70 Offices and Affiliates Worldwide



## The Americas

|                |              |                |
|----------------|--------------|----------------|
| Atlanta        | Houston      | Princeton      |
| Austin         | Jacksonville | San Francisco  |
| Boston         | Los Angeles  | São Paulo      |
| Calgary        | Mexico City  | Seattle        |
| Cayman Islands | Miami        | Silicon Valley |
| Chicago        | Milwaukee    | Stamford       |
| Dallas         | Montreal     | Toronto        |
| Denver         | Morristown   | Vancouver      |
| Detroit        | New York     | Washington, DC |
| Fredericton    | Philadelphia |                |

## Europe and Middle East

|                 |            |                |
|-----------------|------------|----------------|
| Abu Dhabi       | Frankfurt  | Padua          |
| Amsterdam       | Lisbon     | Paris          |
| Athens          | London     | Pesaro         |
| Barcelona       | Longford   | Porto          |
| Berlin          | Luxembourg | Prague         |
| Bilbao          | Madrid     | Rome           |
| Birmingham      | Manchester | St. Petersburg |
| Bologna         | Milan      | Turin          |
| Channel Islands | Moscow     | Warsaw         |
| Dublin          | Munich     |                |

## Asia-Pacific

|           |           |
|-----------|-----------|
| Almaty    | Shanghai  |
| Bangalore | Shenzhen  |
| Bangkok   | Singapore |
| Beijing   | Taipei    |
| Guangzhou | Tokyo     |
| Hong Kong |           |
| Mumbai    |           |
| New Delhi |           |

# Powering Sound Decisions

## We Serve

**62%** of Fortune 100 companies

**85%** of Am Law 100 law firms

**68%** of the 25 largest Euro STOXX companies

**72%** of the 25 largest private equity firms in the PEI 300

**72%** of the 25 largest hedge funds in the Alpha Hedge Fund 100

*We are the largest independent valuation advisory firm.*

## We Rank

**#1** U.S. Fairness Opinion Provider<sup>1</sup>

**#1** Global Fairness Opinion Provider<sup>1</sup>

**#2** U.S. Middle Market M&A Advisor<sup>2</sup>

## We Performed

Over **10,000** engagements in 2015 for more than **5,000** clients

Over **6,000** valuation advisory engagements in 2015 for more than **2,500** clients

Portfolio valuation advisory services for over **70%** of top-tier private equity firms in 2015

Over **1,000** Fairness and Solvency Opinions for **\$2 trillion** in deal value since 2005

1. Published in Thomson Reuters' "Full Year 2015 Mergers & Acquisitions Review." Duff & Phelps tied with Huatai Securities Co. Ltd. for #1 for Global Fairness Opinions.

2. Thomson Financial Securities Data (U.S. deals \$10M < \$250M). Full year 2015.

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# Enhancing Value

## Across a Range of Expertise

| <b>Valuation</b>                                                                                                                          | <b>Corporate Finance</b>                                                                                                                                     | <b>Disputes and Investigations</b>                                                                            | <b>Tax Services</b>                                                                                                            | <b>Compliance and Regulatory Consulting</b>                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Technical expertise and specialized support in the areas of complex valuation, alternative assets, real estate and fixed asset management | Objective guidance to management teams and stakeholders throughout restructuring, financing and M&A transactions, including independent transaction opinions | Financial analysis, consultation and expert testimony in the context of litigation, arbitration and mediation | Expertise in implementing tax solutions surrounding property tax, business incentives, transfer pricing and unclaimed property | Helping financial services firms navigate the compliance and regulatory landscape, mitigating risk throughout the business lifecycle |

# Our Services

## Valuation

### Valuation Advisory

Purchase Price Allocation  
Goodwill and Intangible Asset Impairment  
Impairment of Long-Lived assets  
Tax Valuation  
Intellectual Property Valuation  
Transfer Pricing  
Business Valuation  
Contingent Asset and Liability Valuation  
Fresh Start Accounting  
Complex Securities Valuation  
Strategic Value Advisory

### Alternative Asset Advisory

Portfolio Valuation  
Complex Asset Solutions

### Real Estate Services

Real Estate Valuation and Consulting  
Corporate Real Estate Services  
Real Estate Restructuring  
Collateral Valuation / Loan Services  
Lease Renegotiation  
Right of Way Appraisal  
Cost Segregation  
Underwriting Due Diligence

### Fixed Asset Management and Insurance Solutions

Fixed Asset Inventory and Reconciliation  
Property Record Outsourcing  
Fixed Asset Componentization  
Property Insurance Appraisal  
Machinery and Equipment Valuation  
IT Fixed Asset Inventory Services

## Corporate Finance

### M&A Advisory

Buy-Side and Sell-Side Advisory  
Transaction Advisory Services  
Private Placement of Debt and Equity  
Financial Sponsor Coverage

### Transaction Opinions

Fairness Opinions  
Solvency Opinions  
ESOP and ERISA Advisory  
Commercially Reasonable Debt Opinions

### Restructuring Advisory

Corporate Restructuring  
Debt Advisory  
Distressed M&A and Special Situations  
Cayman Restructuring

## Compliance and Regulatory Consulting

Compliance Consulting  
Regulatory Consulting  
Risk and Management Company Solutions  
Hosted Regulatory Solution  
Regulatory Tax Advisory  
Business Services

## Disputes and Investigations

Intellectual Property Disputes  
Commercial and Shareholder Disputes  
Complex Securities and Capital Markets Litigation  
Fraud, Forensic and Investigative Services  
M&A Purchase Price Disputes and Arbitration  
Bankruptcy Litigation  
Business Insurance Consulting  
Monitoring Trustee Services  
Forensic Technology and Analytics

## Legal Management Consulting

Technology  
Strategy and Operations  
Information Governance

## Tax Services

Property Tax Services  
Business Incentives Advisory  
Unclaimed Property and Tax Risk Advisory  
Tax Litigation  
Sales and Use Tax Services  
Strategic Tax Advisory Review Services

# Services Across the Transaction Lifecycle



For more information about our global locations and services, please visit:  
[www.duffandphelps.com](http://www.duffandphelps.com)

## About Duff & Phelps

Duff & Phelps is the premier global valuation and corporate finance advisor with expertise in complex valuation, dispute consulting, M&A and restructuring. The firm's more than 1,000 employees serve a diverse range of clients from offices in North America, Europe and Asia.

*M&A advisory, capital raising and restructuring services in the United States are provided by Duff & Phelps Securities, LLC. Member FINRA/SIPC. Pagemill Partners is a Division of Duff & Phelps Securities, LLC. M&A advisory and capital raising services in the United Kingdom and Germany are provided by Duff & Phelps Securities Ltd., which is authorized and regulated by the Financial Conduct Authority.*

# Thank You!

- ◆ Participants will receive a copy of the slide deck and a recording of the Webinar tomorrow.
- ◆ This Webinar is part of our series with Duff & Phelps looking at issues and challenges in the valuation of private assets – more details can be found here:

<http://www.voltaireadvisors.com/voltaire-advisors-duff-and-phelps-private-assets-valuation-briefing-series.html>

- ◆ The next event is our Webinar on Valuation Governance on November 15<sup>th</sup>



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