



Coronavirus Pandemic and Public Market Volatility

Impact on Valuing Venture Capital Investments at March 31, 2020

Agenda

- I. Duff & Phelps Firm Overview
- II. Key Developments
- III. Valuation Examples
- IV. Questions

Appendices

- A. Duff & Phelps Alternative Asset Advisory

Today's Presenters



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Section I

Duff & Phelps Firm Overview

Enhancing Value Across a Range of Expertise

VALUATION ADVISORY

Valuation and consulting for financial reporting, tax, investment and risk management purposes

- Valuation Services
- Alternative Asset Advisory
- Real Estate Advisory
- Tax Services
- Transfer Pricing
- Fixed Asset Management and Insurance Solutions



CORPORATE FINANCE

Objective guidance to management teams and stakeholders throughout restructuring, financing and M&A transactions, including independent fairness and solvency opinions

- M&A Advisory
- Fairness Opinions
- Solvency Opinions
- Transaction Advisory
- ESOP and ERISA Advisory
- Commercially Reasonable Debt Opinions
- Distressed M&A and Special Situations



GOVERNANCE, RISK, INVESTIGATIONS AND DISPUTES

Combined Duff & Phelps and Kroll risk management and mitigation, disputes and other advisory services

- Business Intelligence and Investigations
- Disputes
- Cross-Border Restructuring
- Cyber Risk
- Legal Management Consulting
- Security Risk Management
- Compliance Risk and Diligence
- Compliance and Regulatory Consulting



PRIME CLERK

Provides bankruptcy and class action claims administration through its proprietary software and industry leading management team.

- Chapter 11
- Strategic Communications
- Contract Review
- Corporate Actions
- Class Action



Valuation Advisory Services

Financial Reporting	Tax	Alternative Asset Advisory	Real Estate Services	Fixed Asset Management and Insurance Solutions
Purchase Price Allocation	Tax Valuation	Portfolio Valuation	Real Estate Valuation and Consulting	Machinery and Equipment Valuation
Goodwill and Asset Impairment	Transfer Pricing	Valuation Policy and Procedures Consulting	Real Estate Restructuring	Property Insurance Appraisal
Intellectual Property Valuation	Legal Entity Valuation	Fund Manager Valuations	Loan Services / Debt Advisory	Fixed Asset Inventory and Reconciliation
Fresh Start Accounting	Purchase Price Allocation	Created Value Attribution	Lease Renegotiation	IT Fixed Asset Inventory Services
Contingent Consideration, Asset and Liability Valuation	Estate and Gift Tax	Secondary Transfers	Right of Way Appraisal	Fixed Asset Componentization
Stock Compensation	Interest Expense Allocation	Valuation of Illiquid and Complex Securities	Cost Segregation	Property Record Outsourcing
Complex Securities Valuation	Worthless Stock Deductions	Derivatives and Structured Credit Products Valuation	Property Asset Management and Optimization	
Business Valuation	Stock Compensation		Transaction Due Diligence	
Strategic Value Advisory	Property Tax Services			
	Sales and Use Tax Services			
	Site Selection and Incentives Advisory			
	Unclaimed Property and Tax Risk Advisory			

Duff & Phelps Alternative Asset Advisory

*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

- » Our client base consists of **400 alternative asset fund managers** and investors in the **U.S. and globally**
- » We perform in-depth valuation analyses of all asset types for clients across the spectrum of banks, hedge funds and private equity firms globally:
 - **70% of the top 25** largest Hedge Funds
 - **70% of the top 25** largest Private Equity Funds
 - **50% of the top 25** largest publicly traded Hedge Fund
 - **80% of the top 30** Limited Partners listed by PEI
 - Our client base includes **20 BDCs**
 - Significant **Venture capital, Private debt and mid-market private equity funds**; fastest growing segment.
- » We review or value over **10,000 investment positions** on a quarterly basis, including derivatives and structured products
- » We have **17 full-time Managing Directors** and draw from D&P's pool of over 1,000 valuation professionals with wide ranging sector and asset class expertise across the spectrum

Thought Leader

- » We are at the forefront of the industry's leading committees on valuation processes, guidelines, and regulations:
 - **IPEV** – Board Member
 - **ILPA** – Special Advisor
 - **AICPA PE/VC Valuation Guide Task Force** – Member
 - **FASB Valuation Resource Group** – Member
 - **Managed Funds Association** – Sustaining Member
 - **IVSC** – Board Member
- » Leadership on drafting IPEV and PEIGG private equity valuation guidelines
- » Development of Duff & Phelps Created Value Attribution Framework.

Duff & Phelps' Portfolio Valuation practice enables alternative investment managers to enhance their valuation process with the independence and objectivity that investors require.

Professional Affiliations

Duff & Phelps Managing Directors provide input to regulators and standard-setters, and actively contribute to the development of valuation industry best practices.



IPEV

International Private Equity
and Venture Capital
Valuation Guidelines

AIMA



Section II

Background

Fair Value Definition Has Aligned

Fair Value is defined by:

- FASB ASC Topic 820
- 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 (Active Market)
- How does Value Accrete?
- Application of Judgement

Why Fair Value?

- **ASC Topic 946 (Investment Company Accounting):**
 - All investments reported at Fair Value as dictated by ASC Topic 820
- **Fiduciary Duty - basis that Fund investors (such as Limited Partners, “LPs”) use to report periodic (quarterly/yearly) performance.**
 - Investors / fund beneficiaries
 - Other interested parties; corporate governance, taxpayers, etc.
- **Decision Making**
 - Fair Value is the best basis for investors to make “apples to apples” asset allocation decisions.
 - Interim investment decisions (manager selection), monitoring interim investment performance, and overall performance of an investor’s portfolio, on a reasonably comparable basis.
 - Risk management data (asset / liability coverage)
 - For some; Fair Value is a basis for incentive compensation decisions.
- **Financial Reporting**
 - Investors need FV based NAV to allow them to prepare their own financial statements
- **A historical reporting basis, such as cost, does not provide meaningful comparability across investments.**

Investors (LPs) must satisfy themselves that reported NAV is based on ASC Topic 820/IFRS 13 compliant fair value of underlying investments

ASU 2016-01 Financial Instruments

(Note: ASC 946 is the applicable accounting standard for Investment Companies—Fair Value all the time!)

- Fair Value reporting of financial instruments for all business entities.
 - Required for Equity Investments with readily determinable fair values
 - Reporting options for investments that do not have readily determinable Fair Values:
 - » Measure equity investments at Fair Value each reporting period.
 - » Measure equity investments at cost minus impairment, if any, plus or minus changes resulting from observable price changes in orderly transactions.
 - Exceptions: investments that are accounted for under the equity method or consolidated; investments of Investment Companies (always fair value).
- Impairment is now a single-step assessment.
 - Qualitative assessments are conducted at each reporting period
- Orderly Transaction: the orderly transaction can occur from a similar investment by the same issuer (i.e. a new round of financing).
 - Entity must consider the different rights and obligations of the securities that are deemed similar. These include voting rights, distributions rights and preferences, and conversion features.
 - Applicable for tranches of preferred equity.
- An impairment event or an orderly transaction will trigger a Fair Value assessment.

Impairment under ASU 2016-01

- Single-step model
- Qualitative Assessment at each reporting period.
- When the qualitative assessment indicates that impairment exists, then estimate Fair Value and recognize impairment loss (difference between carrying value and fair value) in current earnings.
- Impairment Indicators include:
 - Significant deterioration
 - Significant adverse change
 - Significant concerns about ability to continue as a going concern
- The presence of an indicator does not mean that the investment is impaired but does mean that a valuation needs to be undertaken to determine if the investment has been impaired (is the fair value below the carrying value?).

Why is March 31, 2020 different than most quarter ends?

- Recent transaction price may no longer be indicative of fair value
- Lack of transaction data does not mean value is stable
- Greater rigor may be necessary if Q1 valuation process differs from Y-E process
- Portfolio company cash burn assumptions may need to be changed
- Portfolio company estimated Q1 results & projected future results may need to be updated
- Potential impact of recent legislation may need to be reflected
 - Coronavirus Aid, Relief, and Economic Security Act signed into law on March 27, 2020
 - Families First Coronavirus Response Act signed into law on March 18, 2020
- Why?
 - Government public health actions are significantly disrupting the economy
 - Public Markets are Volatile—At March 31, 2020
 - » S&P 500 YTD down 20.0%
 - » Russel 2000 YTD down 31.2%
 - » Nasdaq down 13.7%
 - Investors still need fair value-based NAV; Corporates faced with question of impairment!

Estimating Fair Value for Early Stage (VC) Investments

- Fair Value is the price of an orderly transaction at the measurement date:
 - Using market participant assumptions,
 - assuming knowledgeable parties,
 - for the specific unit of account
- As **changes** to the business plan occur, it is important to **understand why** adjustments are being made
 - new opportunities
 - different risks
 - failed efforts
 - market conditions
- Fair Value may be represented by what you would pay for the investment, knowing now what you did not know before
 - Would more money for a higher or lower percentage interest (and rights) make sense?
 - Would less money for the same interest be appropriate?
 - The company has satisfied some development hurdles (milestones) and has less need for capital at the current stage
 - Will the company need more capital than originally expected, such as when more uncertainty has developed in the market, or negative results require more development effort?
 - The target market(s) have changed; size / nature of demand / competition

Portfolio Company Triage – Market Risk Exposure Valuation Considerations Resulting From the Covid-19 Pandemic

- Liquidity – financial strength of company
 - Any Debt or material working capital needs?
 - Potential for covenant breach?
 - Cash runway?
 - Next Round of Financing? Syndicate interest? Likely limited access to new investors
- Sector and industry, by target market
 - Technology is not immune; Software better off than Hardware
 - Biotech ?
 - High-growth; growth from new customers severely impacted
- Stage of development – exposure to market(s)
 - Pre-revenue
 - Time to market
 - Customer/demand elasticity and financial health
- Flexibility of operations
 - Ability to change burn rate and/or operating leverage
 - Option to hibernate (shut down and relaunch costs and risks)

Portfolio Company Triage – Market Risk Exposure (cont.)

Valuation Considerations Resulting From the Covid-19 Pandemic

- Enterprise Value
 - Direct financial impact in revenue and cash flow (timing and amount)
 - Indirect impact
 - » Supply chain financial health
 - » Access to resources and productivity
- Capital structure and unit if account
 - Liquidation Preferences—do they have value?
 - » Binary outcomes
 - » If financing is needed before “market recovery”
 - Ability to exit and control disposition
 - Delays in progress or market access likely leading to dilution
- Visibility and uncertainty; special situations
 - Market opportunities
 - Asymmetric risks
 - Near-term cash-out-date; does the company have enough momentum to garner funding
 - Pending transactions, if any

Valuation Methodology

Valuation Considerations Resulting From the Covid-19 Pandemic

Problems with models without adjustments

- Yield analysis – Direct valuation
 - Preferred equity
 - Debt
- Transactions
 - Option Pricing Model back-solve
 - Common Stock Equivalent
- Traditional, if applicable
 - Discounted cash flow
 - Market approach
- Scenario Analysis

Considerations for inputs and assumptions

- Market rates +350 bps to +700 bps
 - Similar credit quality and exposure to risk
 - Duration & potential cash flow adjustments
 - Implied yields less reliable
- Won't work without significant adjustments
 - Underwriting assumptions invalid
 - Increased volatility; distortion & temp?
 - IPO and exit delayed?
 - Negotiation lag
- Issues with calibration
 - CF adjustments lack of market visibility
 - Multiple mismatch with revised metrics
 - Calibration breaks down w/ revised CF
- Good with calibration more subjective w/o
 - Scenario value
 - Probabilities and risk (discount rate)

Process Changes and Market Participant Considerations Resulting From the Covid-19 Pandemic

- Process and procedures should not change, unless it's broken
 - Similar robustness as year-end process
 - OPM use only
 - Information right problems (enhanced exposure to risk)
 - Transactions are stale (a statement not a question)
 - Doesn't consider current market facts that would impact Market Participant decisions
 - » Exit timing delayed and potential for dilution
 - » Liquidity strain on portfolio companies
 - » Impact of COVID-19 epidemic to business operations (e.g., revenue, supply chain, productivity, etc.) is expected to have short-, medium-, and long-term effects; adjust appropriate assumptions
 - » Decline in deals and access to capital much less than last year
 - » Deal pricing and returns adjusted for market uncertainty and capital supply
 - » Companies without momentum and willing syndicate base; likely shelved
 - Documentation and reasoning for inputs and assumptions is (always) key
 - Other industry impact
 - » Consolidation of capital in mega firms?
 - » LPs will likely focus on most proven managers
 - » Investors new outlook; greater emphasis on sustainable revenue growth and profitability

Covid-19 Winners and Non-Winners

Short-term consideration (comps / industry)

- Energy sensitive to economic cycle
- Tourism, Travel and entertainment
- Chain restaurants
- Companies that need access to credit
- Require face-to-face interaction
- E-commerce and support businesses
- Food & grocery delivery
- Remote connectivity and streaming
 - Work
 - Education
 - Other software
- Cleaning supply and healthcare (some)

Mid-term (risks and factors)

- Customer elasticity (loss of demand)
- Leverage
 - Operating
 - Financial
- Limited access to resources
 - Supply chain
 - Labor
- Strong balance sheet
 - Cash
 - Flexible burn rate
 - Time to market not major concern
- Interest from insiders / syndicate
- Milestones not related to revenue growth
- Companies quicker to profitability and sustained growth

Long-term (fundamental changes)

- Lower performance impacts confidence
 - Customer
 - Investors
- Bankruptcy; relationships and resources
- Manage change in business methods
- Manage change in customer behavior
- Retention or development of competitive advantages



Valuation Guidance

AICPA Guidance – Valuation of Portfolio Company Investments of Venture Capital and Private Equity Funds and Other Investment Companies

- Chapter 8: Valuation of Equity Interests in Complex Capital Structures
- Methods of estimating the fair value of multiple classes of equity
 - Scenario-Based Methods
 - Option Pricing Method (“OPM” or Contingent Claims Analysis)
 - Current Value Method
 - Hybrid Method (A hybrid of scenario-based methods and OPM)
 - Fully Diluted Approach or Common Stock Equivalent Method (“CSEM”)
- How much weight should be placed on a recent financing round?
- How should the concept of Calibration be applied?

What is Known and Knowable at March 31, 2020?

- Public market prices have decreased significantly
- Energy prices, in particular the price of oil, have decreased significantly
- Selected industries have been significantly impacted by the response to the pandemic
- Many individuals and companies are facing a liquidity crunch—how long will their cash resources last?
- Uncertainty has increased; and therefore risk has increased; and therefore a market participants required rate of return has likely increased
- Central banks and governments are implementing monetary and fiscal stimulus
- The potential for recession is increasing

What is NOT Known and Knowable at March 31, 2020?

- When effective treatments for COVID-19 will be available
- When a vaccine will be available to prevent the spread of COVID-19
- Whether summer weather will curtail spread of COVID-19
- Whether and when spread of COVID-19 will return if spread is curtailed
- How long shelter in place and travel restrictions will remain in effect
- When and by how much the public markets will increase or decrease in value
- The full impact of government and central bank fiscal and monetary policy legislation and initiatives
- The timing, depth, and length of a potential economic recession

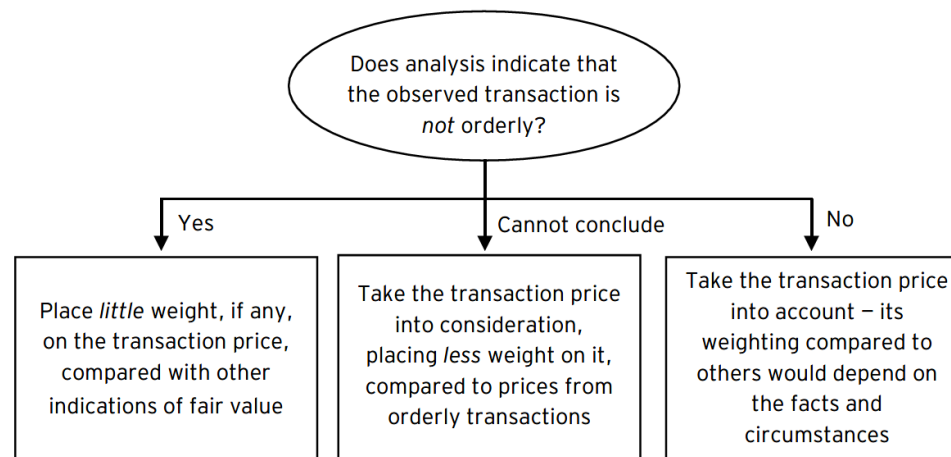
Venture Capital Valuation Questions

Fair Value and Related Concepts

ASC Topic 820 and IFRS 13 on Transaction Price and Fair Value:

If the weight of the evidence indicates a transaction is **orderly**, the reporting entity must consider that transaction price when estimating fair value or market risk premiums. The amount of weight placed on that transaction price when compared with other indications of fair value will depend on the facts and circumstances such as:

- The volume of the transaction;
- The comparability of the transaction to the asset or liability being measure at fair value;
- The proximity of the transaction to the measurement
- Significant changes in market conditions



Calibration

- Simple illustration:
 - Series G Post-Money Valuation: \$1.0B
 - Use Revenue projections at the time of the Series G financing round
 - Growth requires multiples to be compressed over time:
 - Year 1: \$50.0M => Implied transaction multiple : 20.0X
 - Year 2: \$100.0M => Implied transaction multiple: 10.0X (-50.0% change)
 - Year 3: \$500.0M => Implied transaction multiple: 2.0X (-80.0% change)
 - Year 4: \$750.0M => Implied transaction multiple: 1.3X (-35.0% change)
 - Year 5: \$1.0B => Implied transaction multiple: 1.0X (-23.1% change)
- Adjustments are necessary
 - Company performance vs. Series G underwriting expectations
 - Overall market movement
 - Risk and return; milestone progress and cash burn
 - Availability of future capital
 - Other

Section III

Valuation Examples

Simple Valuation Example 1

- **AYUMI Entertainment Group (“AEG”), based in Seattle, WA, is an online fan-to-fan ticket marketplace that enables users to buy and sell tickets to concerts, theater, sports, and other live entertainment events in the U.S.**

- **On January 15, 2020 (“Calibration Date”), AEG raised a \$100.0 million in a Series D round of financing led by new investors Yukari Ventures (\$50.0 million) and others. The Series D round of financing implied a post-money valuation of \$800.0 million.**

- Prior to COVID-19, 2020E revenue was \$200.0 million or 4.0x implied Series D transaction multiple;
- Post-COVID-19, forward revenue multiples and market capitalizations of comparable companies have declined by a median of 50.0 percent and 25.0 percent since the Calibration Date, respectively;
- Based on the facts and circumstances above and what was known or knowable at the March 31, 2020 measurement date, Yukari Ventures concluded on the following fair value of its Series D shares:
 - Calibrated Series D transaction multiple: 3.0x
 - Implied total equity value: \$600.0 million
 - Fair Value of Series D shares (Unit of Account): \$37.5 million - \$42.5 million

Simple Valuation Example 2

- **Musk Co. is an early stage company based in Asia that focuses on electronic vehicle (“EV”) related technology. The company’s business model is to generate revenue through long-term contracts with large auto manufactures.**
 - The client’s investment was made in December 2019
 - Cash runway of 1-2 years
 - The company currently has no meaningful revenue but had projected high growth over the next 3 years
 - COVID-19 has a significant impact on the business
- **To value the client’s interest in Musk Co. as of March 31, 2020, the service provider considered a calibrated scenario-based analysis or probability-weighted expected return method (PWERM) to value the business. Key assumptions in the scenario-based analysis include:**
 - Probability Weighting – **Shift toward the downside case**
 - Exit Timing and Exit Value – **Exit timing extended by 1 year**
 - Discount Rate – **An increase in alpha**
 - Conclusion – **A 20% discount to cost.**

How to Think About Cash

Cash is King, but it's not as straightforward as it should be

- Burn rate
 - Time to prove accretion of value (duration of implied call option)
 - » Milestones, specific goal for financing round
 - » Efficiency vs impact (novelty) and dealing with current burn versus future benefit
 - Flexibility (Covid 19 issue)
 - » People, investment in growth (intangible) assets, maintenance of existing assets
 - » Fixed, shut down and relaunch costs
 - » Importance of time to market
- Value considerations
 - Effectively “dry powder” or sunk cost?
 - Last round not Fair Value? Pre-money down !, Post-money ???

Valuation method	Cash treatment	Implied value	Notes
Transaction OPM & CSE	+ Pro-Forma	Post money Equity value	(-) cash to calibrate Enterprise value
Market approach	MVIC multiples net of total cash	Enterprise value	
Discount Cash Flow	Operating (included in CF) Non-operating	Equity value Enterprise value	(-) Debt = Enterprise (-) Net debt = Equity
Scenario analysis	Included in terminal values? (additional dilution net cash)	Equity value	Depends on support for scenarios

Don't Think Value Changes as a Result of Covid 19?

Impact of uncertainty; how long it may take to get back to normal; **what needs to happen?**

- Prior recoveries
 - Dot com bust (changed technology landscape with many discontinued businesses)
 - 9/11 (more than 2 years for airlines to recover equal traffic)
 - Financial crisis (2+ years of recession)
- Restoration, key factors
 - Government Stimulus
 - » Impact of CARE market reaction minimal, but may save businesses so loss could have be greater
 - » Will likely need more stimulus for workers and businesses
 - » Loan payback likely to drag recovery time
 - » Loan forgiveness likely to spur inflation
 - Maintain or mitigate virus and active cases
 - » Global behavior; increasing productivity, stimulate and meet demand under distancing constraints
 - » Better knowledge about infectious nature of the virus
 - » Testing quality and ability to control and monitor cases
 - » Plasma treatment efficacy
 - » Anti-viral or other blocking/symptom mitigating development
 - » Vaccine development
 - Amount of backlogged demand and financial stability may be a function of time
 - Confidence, largest drop measured
 - » Investors
 - » Consumers

Audience Questions

Resources:

- [IPEV Valuation Guidelines and IPEV Board Special Guidance](#)
- AICPA Article: [Investment Companies: Measuring Fair Value in Times of Significant Uncertainty](#)
- AICPA Accounting and Valuation Guide: *Valuation of Portfolio Company Investments of Venture Capital and Private Equity Funds and Other Investment Companies*
- Duff & Phelps
 - [Frequently Asked Questions: Measuring the Fair Value of Private Debt and Equity Investments in Times of Significant Uncertainty](#)
 - Your Duff & Phelps service team

Most Difficult March 31, 2020 Valuation Questions

- How do I assess what is known and knowable?
- How long will the economic “shut down” last?
- When will the economy return to normal? Or will there be a new normal?
- How long should we plan for reduced cash flows? 3 months, 6 months, 9 months, longer?
- Does a portfolio company have sufficient liquidity to weather the storm?
- How should government fiscal stimulus be factored in?
- How should market participant perspectives be determined when market participants are seemingly not entering into orderly transactions at this moment in time?

Final Comments

Resources:

- David Larsen: +1 415 693 5330; david.larsen@duffandphelps.com
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- Greg Franceschi: +1 650 798 5570; greg.franceschi@duffandphelps.com
- Guannan Liu: +1 415 693 5331; guannan.liu@duffandphelps.com
- Masa Noggle: +1 415 693 5392; masa.noggle@duffandphelps.com

Appendix A

Duff & Phelps Alternative Asset Advisory

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David Larsen is a managing director in the Seattle office of Duff & Phelps and part of the Alternative Asset Advisory service line. He has more than 35 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 a member of the International Valuation Standards Council Standards Review Board, an advisor to and has served as Vice Chair of the International Private Equity and Venture Capital Valuations Board (IPEV), which in 2018 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.

Steven Nebb, CFA

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Steven Nebb is a managing director in the San Francisco office and part of the Alternative Asset Advisory services business unit. He is the client relationship champion for the Company's Portfolio Valuation practice in Asia and Western North America, and is the firm's product leader for the valuation of Venture Capital, early-stage and Unicorn investments.

Steve has over 20 years of experience performing numerous valuations and financial analyses for a variety of purposes, including financial reporting, tax, fairness opinions and transaction advisory, litigation and strategic planning. Steve's engagement highlights include private equity, illiquid debt, and complex derivative valuations throughout the alternative asset investor industry. He advises limited partners from large sovereign wealth funds to local pension plan managers regarding valuation and industry best practices. For venture capital, hedge funds, business development corporations and private equity funds he covers high-tech; biotech and healthcare; consumer durables, consumables and brand conglomerate; and, engineering, consulting and defense contracting industries.

Prior to joining Duff & Phelps, Steve performed valuation and financial advisory engagements for over eight years with the Valuation Services Practice of PricewaterhouseCoopers LLP (PwC) and Standard & Poor's Corporate Value Consulting Group (CVC). Prior to that, Steve's experience includes analyzing aerospace and defense contractor operational capabilities, financial performance and contract satisfaction. Steve provided consultation to the Department of Defense, Department of State and the Federal Aviation Administration, regarding contractual issues and contract negotiations.

Steve received his B.S. in finance from George Mason University. He is also a CFA Charterholder and a member of The CFA Institute, the Security Analysts of San Francisco and the Licensing Executives Society, San Francisco Chapter.

Greg Franceschi

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Greg Franceschi is a Managing Director in the Silicon Valley office and the Global Leader of Duff & Phelps Financial Reporting Practice and Office of Professional Practice.

Greg has completed numerous valuation and consulting projects for leading technology, media, consumer products, retail, medical products and industrial product companies. In addition, Greg has been engaged as an expert witness in valuation related matters.

Before its merger with Duff & Phelps, Greg was a managing director at Standard & Poor's. Prior to that, Greg was a partner at PricewaterhouseCoopers LLC.

Greg received his M.B.A. in finance from the University of Notre Dame and his B.S. in economics from Indiana University. He is an American Society of Appraisers candidate, having completed all testing requirements. Greg is also a member of the D&P Technical Committee and member of the American Institute of Certified Public Accountants (previously licensed in the State of Illinois).

Greg was Co-Chairman of the AICPA Impairment Task Force (publishing the AICPA Accounting and Valuation Guide - Testing Goodwill For Impairment) and has been widely quoted on ASC 350 matters.

Guannan Liu, CFA

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Guannan Liu is a director in the San Francisco office of Duff & Phelps and part of the Alternative Asset Advisory service line. She specializes in valuation of equity and debt interest in early stage companies and advises a wide range of clients, including large global private equity, venture capital, and business development corporations.

Guannan has over 9 years of experience performing numerous valuations and financial analyses for a variety of purposes, including financial reporting, tax, fairness opinions and transaction advisory, litigation and strategic planning. Guannan's experience highlights include equity, illiquid debt, and complex derivative valuations throughout the alternative asset investor industry including venture capital, hedge funds, business development corporations and private equity funds covering high-tech; biotech and healthcare; software and hardware; engineering, consulting and entertainment industries.

Prior to joining Duff & Phelps, Guannan was a valuation manager at the Economic and Valuation Services Practice of KPMG LLP. At KPMG, Guannan specialized in valuation of complex securities including stock options, convertible debt, warrants, interest rate derivatives and contingent considerations, etc.

Guannan received her Master's degree in Financial Engineering from the Anderson School of Management at University of California, Los Angeles. She is also a CFA Charterholder and a member of the CFA Institute.

Masa Noggle, CFA

Director, Alternative Asset Advisory



Masa Noggle is a Director in the San Francisco office of Duff & Phelps where he is part of the Alternative Asset Advisory business unit.

Masa has worked extensively in the alternative asset space performing equity, illiquid debt, and complex derivative valuations for some of the largest private equity firms, public pension funds, venture capital firms, business development companies, and hedge funds. Masa has analyzed early-stage investments across a large number of sectors including the technology, financial services, consumer products, industrial, healthcare, and telecommunication industries.

Masa received his Master of Business Administration and Master of Science in Financial Analysis from the University of San Francisco and his Bachelor of Arts in Business Economics at the University of California, Santa Barbara. Masa is also a CFA Charterholder and a CAIA Charterholder.

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Alternative Asset Advisory - Practice Overview

Creating enhanced transparency in the Alternative Asset Investment Space

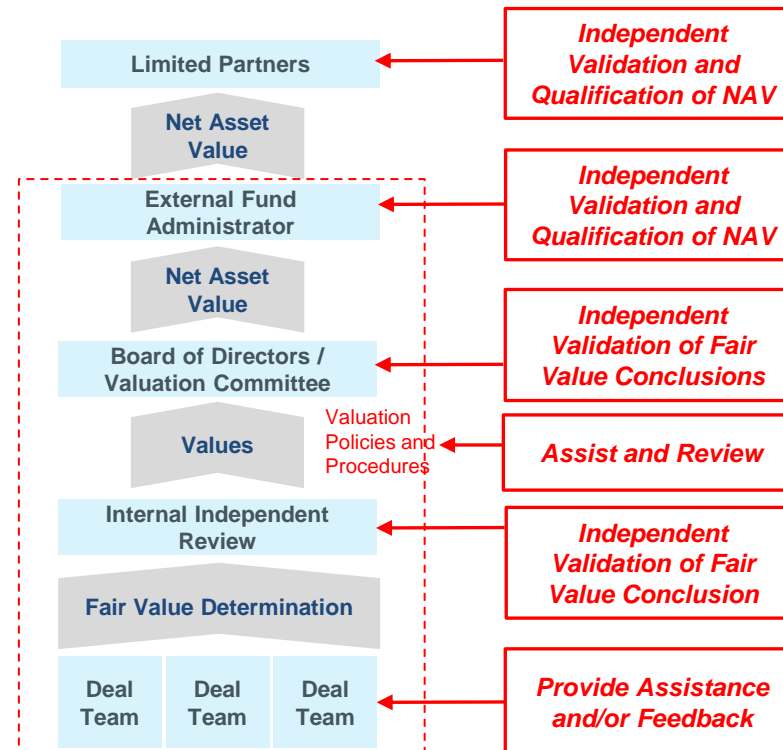
Who We Are

Duff & Phelps is a global industry leader in the alternative asset investment space, with expertise in all classes of illiquid securities and clients across North America, Europe, the Middle East, and Asia

How and Where We Can Help

Duff & Phelps provides an independent and objective view on valuation that enhances our clients' financial reporting process and internal control environment

Typical Engagements



Unparalleled Industry Thought Leadership

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Industry Thought Leadership

- » Service on FASB's Valuation Resource Group
- » Participation in the U.S. Securities and Exchange Commission's mark-to-market roundtable in November 2008
- » Membership on the American Institute of Certified Public Accountants' Alternative Investments Net Asset Value Task Force
- » Leadership in drafting the Private Equity Industry Guidelines Group's (PEIGG) U.S. Private Equity Valuation Guidelines
- » Membership on the International Private Equity and Venture Capital Valuations Board, focused on providing global guidelines for valuing private equity. Duff & Phelps co-drafted the IPEV Valuation Guidelines
- » Active member of Alternative Investment Management Association (AIMA)
- » Special advisor to the Institutional Limited Partners Association
- » Quoted by media outlets including Wall Street Journal, Financial Times, New York Times, CFO Magazine, CNBC, Fox Business News, Private Equity International, and Hedge Funds Review on issues impacting alternative investments valuation.

Benefits of Duff & Phelps Alternative Asset Advisory

- » Duff & Phelps review provides an independent and objective view on valuation that enhances our Client's valuation and financial reporting process
- » We ensure that our Clients' valuations methodology is compliant with current guidance and financial reporting requirements
- » We ensure that our Clients' methodology and approach is aligned with industry best practise using our experience and insight
- » Our involvement provides additional assurance to investors as to robustness of valuation process
- » We provide support for finance teams challenging and supporting deal team values
- » Our discussions with LPs indicate an increased focus on importance of timely, accurate reporting
- » At our Clients' request, and with a signed third party release letter, we communicate with LPs directly
- » Duff & Phelps review valuations prepared to ensure:
 - Objective and independent valuation conclusions
 - Compliance with guidelines and regulations
 - Consistent and robust approach with work-paper support

Our Areas of Expertise Span the Full Spectrum of Illiquid Assets and Securities

We are a recognized market leader, providing valuation services to the alternative investment management community. We currently review thousands of positions across a broad range of industries and clients.

Alternative Assets	Corporate Securities	Structured Products	Contractual Agreements	Options & Other Derivatives
<ul style="list-style-type: none"> » Private/Direct Loans » Real Estate » Private Equity and Venture Capital (Direct) » Private Equity and Venture Capital (Co-invest) » Hedge Fund and Private Equity General Partnerships (GPs) » Hedge Fund and Private Equity Limited Partnership Interests (LPs) » In-Kind Distributions » Other Illiquid investments » Non-performing loans (NPLs) 	<ul style="list-style-type: none"> » Convertible debt » Callable debt » Private Secured and Unsecured Loans » Distressed Debt » Other Debt Instruments » Preferred and Non-Public stock » PIPEs » Illiquid Common Equity » Employee stock options (FAS 123/IFRS2) and Restricted Stock » Warrants » Securities with embedded derivatives » Allocation of value among various claim holders » Common stock of highly leveraged companies » Contingent stock 	<ul style="list-style-type: none"> » Residential whole loans, MSRs and Residential Mortgage Backed Securities (RMBS): Subprime, Alt-A, Option ARMs, RPL, NPL, SFR, fix and flip » Asset-Back Securities and Structured Notes » Commercial Real Estate (CRE) Loans, CMBS, CRE CDOs and CRE CLOs » Marketplace lending/P2P loans and securities » Various types of CDOs including ABS CDO, CBO, CLO, CDO², Synthetic CDOs, Reg-Cap transactions, and Trust Preferreds. » Collateralized Fund Obligations (CFOs) – Hedge Fund and Private Equity Interests 	<ul style="list-style-type: none"> » Executive compensation plans » Contracts with contingent payments » Employee stock options (FAS 123/IFRS2) » Management Incentive plans associated with portfolio companies (FAS123R/IFRS2) 	<ul style="list-style-type: none"> » Futures & Forwards » Swaps - Interest Rate, Variance, Dividend, Energy and Volatility Swaps » Options - Equity, Interest Rate, Currency, Commodity & Energy Options » Credit Default Swaps and other credit derivatives » Warrants (Debt) » Other OTC derivatives » Catastrophe bonds

Sector Expertise

We have over a decade of experience in the portfolio valuation and alternative investments space, as well as experts covering all major asset classes, including Real Estate, Structured Products, Technology, Industrial Products, and Healthcare:

Experience	18 full time Managing Directors to ensure timely, intelligent responses to your issues and questions that bring you unparalleled market intelligence and insights.
Breadth	The broadest exposure to deal sizes ranging from lower middle market to the largest syndicated deals. Approximately 10,000 valuations of private investments were performed in 2018. These engagements involved billions of dollars in positions across all industries in both domestic and international geographies.
Capacity	Industry leading ability to leverage our 1,300+ valuation professionals with deep industry and product experience. Over 200 professionals regularly work on alternative asset advisory engagements.
Resources	As a large firm, we invest in leading technology to leverage investment data and bring market leading experience and insights to our clients.
Product Knowledge	Expertise with the most complex debt, equity, real estate and derivative investments in companies across the business lifecycle.
Thought Leadership	Our professionals are actively involved in shaping both the US and international landscape on Fair Value reporting issues, including co-authoring the current PEIGG and IPEV Fair Value guidelines.

Our experience with complex portfolios has given us unparalleled insight in valuing a broad range of alternative investments. As the largest valuation firm in the alternative asset space, we have valued a diverse array of investment classes, enabling us to approach our clients' valuation needs with confidence. This exposure puts us at the forefront of industry trends and valuation methodologies.

For more information about our global locations and services, please visit:
www.duffandphelps.com

About Duff & Phelps

Duff & Phelps is the global advisor that protects, restores and maximizes value for clients in the areas of valuation, corporate finance, disputes and investigations, cyber security, claims administration and regulatory issues. We work with clients across diverse sectors on matters of good governance and transparency. With Kroll, the leading global provider of risk solutions, and Prime Clerk, the leader in complex business services and claims administration, our firm has nearly 4,000 professionals in 25 countries around the world. For more information, visit

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