Portfolio Valuation

Valuation Approaches and Industry Trends

Introduction

- Portfolio Valuation is the process of determining the values of assets held by a company, an individual, or any other legal entity.
- Asset managers who invest the capital of individuals and institutions are generally required to periodically report the values of the holdings to provide investors with transparency on the value of their investments, including any gains and losses.
- Asset managers are often compensated based on assets under management, so accurately measuring the values of these assets is critical to facilitate these computations.

Standard of Value

- "Fair value" is generally the standard of value for financial reporting.
  - Defined as "the price that would be received to sell an asset or transfer a liability in an orderly transaction between market participants at the measurement date."
  - Market participants are buyers and sellers in the principal (or most advantageous) market for the asset or liability that are independent, knowledgeable, able to transact, and willing to transact.
  - Under FASB ASC 820 and IFRS 13.

When is a Portfolio Valuation Needed?

- Raising capital from new investors.
- Communicating fund performance to existing investors.
- Using existing investments as collateral for asset-based lending.
- Quarterly financial reporting.
- Inter-fund transfers.
- Redemptions prior to dissolution.

Problem - Overvaluation

- Asset managers benefit from higher assets under management, so there is a conflict of interest for them to inflate the value of their illiquid holdings.
  - Asset managers can inflate values by:
    - Using a risk positive bias (i.e. unrealistic assumptions and unsustainable growth rates).

- Investors, auditors, and regulators have increasingly focused on the interim valuations of assets during the investment period between acquisition and disposition.

- Investors and asset managers can benefit from an independent valuation expert opining on the values to assure accuracy.

Regulatory Background

- 2010 – The Private Fund Investment Advisers Registration Act is passed
  - Enacted as part of the Wall Street Reform and Consumer Protection Act.
  - Private equity firms are now required to periodically mark their positions at the price it would change hands between a willing buyer and a willing seller.

- 2011 – Dodd Frank Amendments to Investment Advisers Act are passed
  - Advisers to hedge funds and private equity funds are, for the first time, required by law to register with the Securities Exchange Commission (SEC).
  - The SEC places more focus on the overvaluation of illiquid assets, especially during the fund marketing stage.

- 2013 - SEC Enforcement Division's Asset Management Unit raises valuation concern
  - At the Private Equity International Conference, the SEC Chief of the unit raised concerns about the lack of transparency by private equity fund managers regarding valuations of illiquid investments.

Recent Violations of Valuation Standards

- Common valuation issues raised by the SEC:
  - Valuations of illiquid investments were not provided by independent consultants.
  - Investments were reported at cost; valuation was not current.
  - Estimated future proceeds were not discounted to present value.
  - Valuation of debt securities did not take into account the effect of significant corporate events, such as a bankruptcy proceeding.
  - Valuations were based on stale data and were not updated frequently enough.
  - Valuation methodologies for illiquid investments were misrepresented in the fund's marketing materials.

SEC Cases

- March 2013
  - Oppenheimer & Company Inc. agreed to pay $2.8 million to settle allegations made by the SEC.
  - Two company units were charged with misleading investors about the valuation policies and performance of their largest private equity investment.
  - The company inappropriately raised the internal rate of return from 3.8 percent to 38.3 percent to inflate the valuation.
  - The firm was required by the settlement to hire an independent compliance consultant.

- January 2016
  - The SEC charged that Equinox, an alternative fund manager, misled investors about how it valued certain assets and inflated management fees.
  - The fund agreed to pay $6.4 million to settle the allegations.

Fair Value Hierarchy &
How Portfolios are Valued

Level 1 Inputs

- Quoted prices for <u>identical</u> assets or liabilities traded in <u>active</u> markets.
  - Examples: listed equities, U.S. government securities, foreign government debt

- "Mark to Market"

- <u>Rarely</u> valued by independent valuation experts.

Level 2 Inputs

- Quoted prices for similar assets or liabilities traded in inactive markets.
  - Examples: corporate bonds, municipal bonds, bank loans, mortgage-backed securities
- "Mark to Matrix"
- Sometimes valued by independent valuation experts.

Level 3 Inputs

- Assets or liabilities which have no observable market value.
  - Examples: investments in privately held entities, distressed debt, complex derivatives, foreign stocks and options

- “Mark to Model”

- <u>Often</u> valued by independent valuation experts.

Three Approaches to Valuation

- **Valuation Approaches**
  - **Market Approach**
    - 1. Available Market Prices
    - 2. Price of Recent Investment
    - 3. Valuation Multiples
  - **Income Approach**
    - 4. Discounted Cash Flow
    - 5. Capitalization of Earnings
    - 6. Option Pricing Models
  - **Cost Approach**
    - 7. Net Asset Value
    - 8. Replacement Cost
    - 9. Historical Cost Less Depreciation

Market Approach

1. Available Market Prices
   – Instruments quoted on an active market are valued at a price within the bid/ask spread that is most representative of fair value on the measurement date.

2. Price of Recent Investment
   – Appraiser uses the initial cost of the investment to estimate value.
   – Commonly used for seed, start-up, and early stage investments.
   – Useful when the subject investment was recently made, as usability erodes over time.

3. Valuation Multiples
   – The application of an appropriate multiple to a performance metric such as revenue or earnings to derive a value.
   – Guideline companies should be similar in business activities, markets served, size, geography, risk attributes, and growth prospects.

Income Approach

4. Discounted Cash Flow
   - The value of an asset, debt, or derivative is the present value of expected future cash flows.
   - Based on the "principle of anticipation".
   - Inputs include: cash flows and discount rate.

5. Capitalization of Earnings
   - The estimated income for one period is converted directly to an indicator of value.
   - A capitalization rate, the cost of capital minus long term growth, is used to discount estimated income.

6. Option Pricing Models
   - Black Scholes Model
     - Nobel prize winning equation used to price trillions of dollars of equity derivatives.
   - Binomial/Lattice Model
     - Takes into account expected changes in various parameters such as volatility over the life of the security, providing more accurate estimates of option prices than the Black-Scholes model.
   - Monte Carlo Method
     - Used to model the probability-weighted expected outcomes in a complex process that cannot easily be predicted due to the interaction of multiple random variables.

Cost Approach

7. Net Asset Value
   - The value of a fund’s assets less the value of its liabilities.
   - The principle of substitution states that the upper limit of value tends to be set by the cost of acquiring an equally desirable substitute, assuming no untimely delays.
   - Appropriate for:
     - Holding companies and companies that may be liquidated.
     - Companies with tangible assets like real estate and equipment (i.e. mining and heavy manufacturing).

8. Replacement Cost
   - The estimated cost to construct, at current prices, a substitute for the subject asset, using modern materials and current standards, design, and layout.
   - Typically used for tangible assets like buildings, machinery, and equipment.

9. Historical Cost Less Depreciation
   - The initial capitalized cost of an asset at the time it was first put into service minus accumulated depreciation.

Discount for Lack of Control (DLOC)

- Investors in capital markets pay a premium for control rights and demand a discount for lack of control.

- Non-controlling interests (such as limited partnership interests in private equity funds and minority shareholders in privately held companies) generally have little to no right to participate in management decisions, such as buying and selling assets, determining the amounts and timing of distributions, and determining when to liquidate the investment. These rights belong to the general partner or manager.

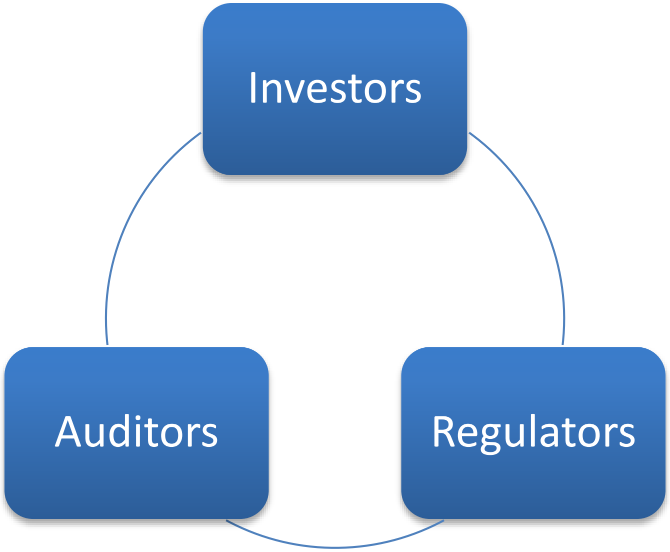
- A non-controlling interest, therefore, is worth less than its pro rata value.

Discount for Lack of Marketability (DLOM)

- Minority interests in privately held companies are often difficult to sell.
- It can be time consuming, difficult, and expensive to liquidate such an interest.
- A minority interest in a closely held business is generally worth less than a similar interest that is readily marketable, such as stock in a public company.
- The magnitude of the DLOM depends on many factors, including the expected time to liquidity, expected distributions, leverage, and restrictions on transferability.

Industry Movement Toward Transparency and External Specialists

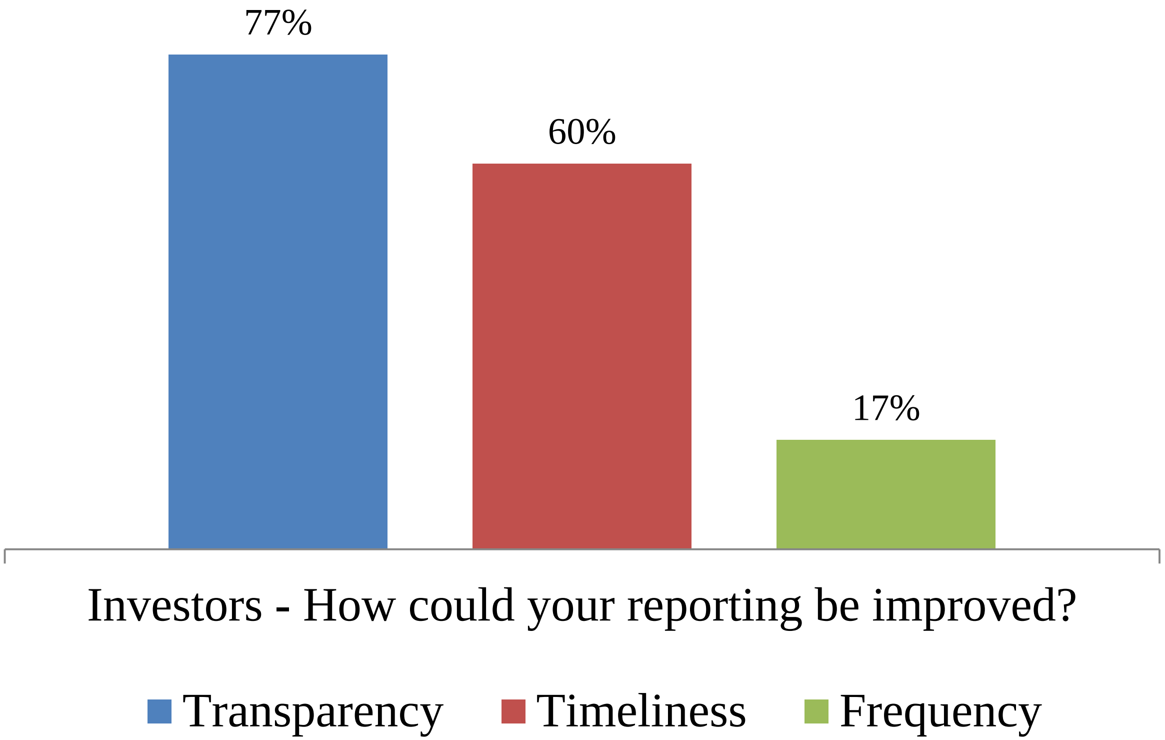
Industry Players are Demanding Transparency



- **Investors** are demanding greater transparency and accuracy due to losses stemming from overvaluation and misrepresentation of asset values.
- **Auditors** are performing more rigorous reviews of private equity managers' portfolio valuations.
- **Regulators** are emphasizing independent portfolio valuations to ensure overvaluation does not occur.

Investors Agree Transparency is Priority

In a recent survey, 77 percent of investors stated that more transparency would improve their reporting.[1]



[1]Ernst & Young, "2016 Global Private Equity Fund and Investor Survey"

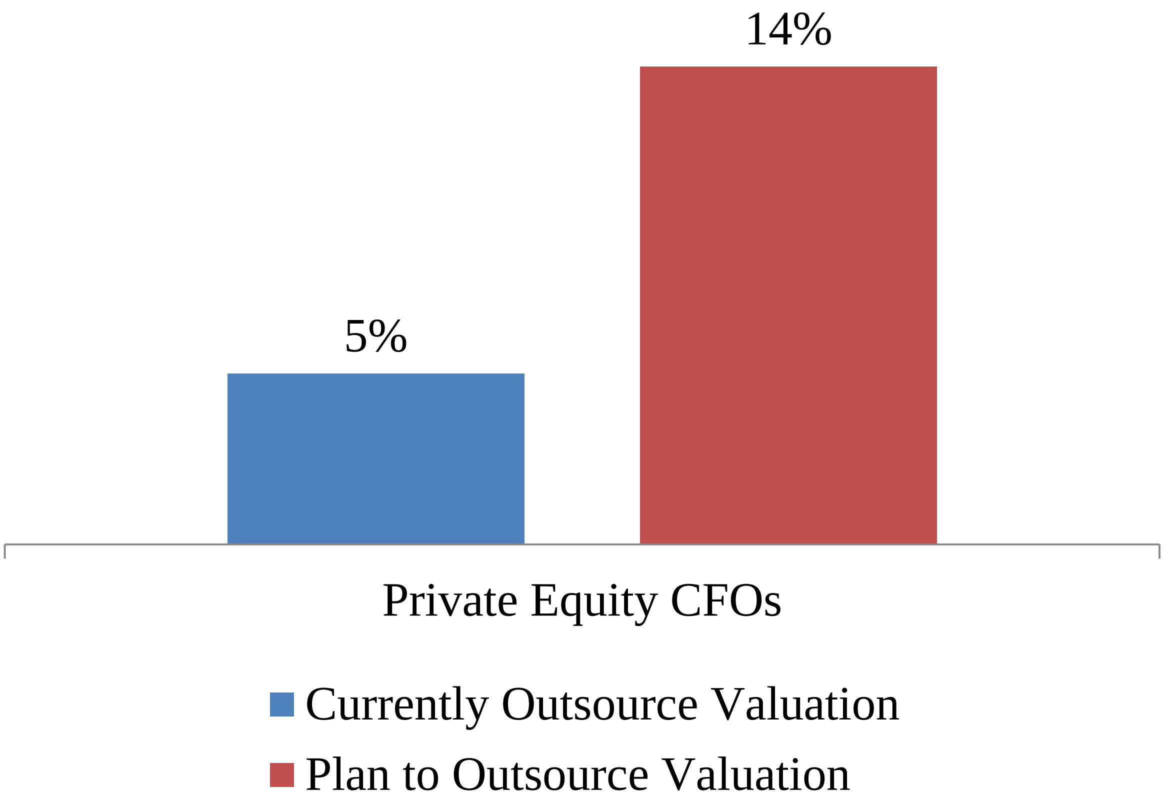
Why Use an External Specialist?

- The use of external specialists has become more common since the financial crisis of 2008-2009.
- This trend is expected to continue as investors and regulators continue to seek more transparent and accurate valuations.
- Although in-house analysts may have greater familiarity with the assets, using an external specialist should be considered.

Benefits of Using an External Specialist
• Reduced conflict of interest (real and perceived)
• Independent and credible values
• Demonstrated commitment to transparency
• Better allocation of resources toward acquiring, managing, and selling investments
• More efficient audits

Using External Specialists is Expected to Grow

In a recent survey with private equity CFOs, the proportion of CFOs planning to outsource portfolio valuations is expected to nearly triple. [2]



[2]Ernst & Young, "2017 Global Private Equity Fund and Investor Survey"

How Appraisal Economics Can Help

- Appraisal Economics has approximately 30 years of experience in providing expert valuation services.

- Our team includes accredited appraisers, former accounting firm directors, CFAs, CPAs, and engineers.

- We can tailor our portfolio valuation services to meet your needs by designing a framework and process to maximize efficiency and effectiveness.

- We have worked on valuation assignments including:
  - Limited partnership interests in private equity and hedge funds
  - Preferred and common equity
  - Variable-rate municipal and convertible corporate bonds
  - Tangible and intangible assets

Types of Reports

Negative Assurance	• Review to ensure that the value prepared by the asset owner "is not unreasonable".
Positive Assurance	• Review to ensure that the value prepared by the asset owner "is reasonable".
Limited Valuation Report	• Valuation based on discussions with the investment adviser with concluded value being a point estimate or a range of values, with summary documentation.
Full Valuation Report	• Valuation based on discussions with the investee company management with concluded value being a point estimate or a range of values, with comprehensive documentation.

Clients of Appraisal Economics

- Our assignments have included valuing interests in the firms themselves (plus management fees, carried interests, incentive fees, and promote interests), as well as transaction-related services for portfolio companies, such as, allocation of purchase price, fairness opinions, and solvency opinions.
- We have performed these and other valuations for such firms as:

L Catterton

Blackstone

Ares

AEA Investors

Berkshire Partners

Lindsay Goldberg

BainCapital

Avista Capital Partners

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