



# Valuations at Investment and Exit

Impact of Economic, Control and Other Rights on Value

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# Agenda

- Introduction
- Characteristics of Preferred Securities
- Valuation Methodologies
- Examples
  - Preferred Securities
  - Carried Interest

# Introduction

- Early stage companies are often financed using various forms of debt and equity
- Equity financing is often a combination of different equity securities which provide holders with unique rights, privileges and preferences (“rights”)
- Valuation challenge is to identify objective methods of quantifying premiums attributable to various rights and allocating enterprise value between the components of capital structure

# Characteristics of Preferred Securities

- Allocation of enterprise value to different classes of stock requires an understanding of preferred stockholder rights
- Preferred rights fall into two broad categories:
  - Economic rights
  - Control rights
- Preferred stock may offer holders:
  - Opportunity for disproportionate returns on their investments
  - Downside protection
  - A degree of control over an enterprise that may be disproportionate to ownership interest

# Economic Rights

<i>Nature of right</i>	<i>Is the right meaningful and substantive?</i>	<i>Purpose of right</i>	<i>Is the right always meaningful and substantive before IPO?</i>	<i>Is the value of the right readily and objectively measurable?</i>	<i>Do allocation methods typically consider the right?</i>
Preferred dividends (noncumulative)	No	Preference to receive dividends if declared	N/A	N/A	N/A
Preferred dividends (cumulative)	Yes	Aims to provide a minimum fixed return in all situations except IPO	Entire life of instrument	Yes	Yes
Liquidation preference (nonparticipating)	Yes	Ensures higher return up until breakeven point	Up until breakeven point	Yes	Yes
Liquidation preference (participating)	Yes	Ensures disproportionately higher return in all situations except IPO	Entire life of instrument	Yes	Yes
Mandatory redemption	Yes	Right to return of capital; aims to provide liquidity	Entire life of instrument	No	No
Conversion (fixed or variable ratio)	Yes	Produces better economic results in certain circumstances	Entire life of instrument	Yes	Yes
Antidilution	Yes	Aims to protect value of investment	Entire life of instrument	No	No
Registration	No	Aims to provide liquidity	N/A	N/A	No

Source: Valuation of Privately-Held-Company Equity Securities Issued as Compensation (AICPA)

# Control Rights

<i>Nature of right</i>	<i>Is the right meaningful and substantive?</i>	<i>Purpose of right</i>	<i>Is the right always meaningful and substantive before IPO?</i>	<i>Is the value of the right readily and objectively measurable?</i>	<i>Do allocation methods typically consider the right?</i>
Voting	Yes	Ability to control or influence	Entire life of instrument	No	No
Protective provisions and veto rights	Yes	Ability to control disproportionate to ownership	Entire life of instrument	No	No
Board composition	Yes	Ability to control disproportionate to ownership	Entire life of instrument	No	No
Drag-along	Yes	Ability to control disproportionate to ownership	Entire life of instrument	No	No
Participation	Yes	Ability to maintain ownership percentage	Entire life of instrument	No	No
First refusal and co-sale	Yes	Restricted ability to sell common stock	Entire life of instrument	No	No
Management	Yes	Access to inside information not available to common stockholders	Entire life of instrument	No	No
Information	Yes	Access to inside information not available to common stockholders	Entire life of instrument	No	No

Source: Valuation of Privately-Held-Company Equity Securities Issued as Compensation (AICPA)

# Valuation Methodologies

- Market comparison approach:
  - Considers the pricing of recent equity transactions to derive the value of another class of equity
- Enterprise allocation approach:
  - Establishes the value of an enterprise and then allocates value among the various classes of equity
  - Value is allocated according to the relative economic and control rights of equity

# Valuation Methodologies (continued)

- Enterprise value allocation methodologies:
  - Current Value Method
  - Probability Weighted Scenario Method
  - Option Pricing Method
- General comments applicable to the above noted approaches:
  - No one method is superior to others in all circumstances
  - Selection of a method should consider facts, circumstances and availability of information on which to base estimates of critical inputs
  - No method takes into account *all* rights that preferred securities may possess

# Current Value Method

- Estimate the current value of the enterprise
- Calculate the payoffs to the various classes of shares based on a liquidation at this current value
- Value of the preferred shares is greater of liquidation or “as-if converted” value
- Most appropriate use:
  - Where a liquidity event (e.g. acquisition, dissolution) is imminent
  - For enterprise at a very early stage of development such that:
    - No material progress has been made on the enterprise’s business plan
    - No significant common equity value has been created above the liquidation preference on the preferred
    - There is no reasonable basis for estimating the amount and timing of any common equity value above liquidation preference that might be created in the future

# Current Value Method (continued)

Example:

Enterprise Value	\$50 Mn
Preferred Shares	2 Mn
Preferred Liquidation	\$20/share
Conversion Ratio (Pref:Common)	1:1
Common Shares	3 Mn

Payoffs:

Enterprise Value	\$50 Mn
Less : Preferred Liquidation	\$40 Mn
Available to Common	\$10 Mn
Preferred Shares	\$20/share
Common Shares	\$3.33/share

# Probability-Weighted Expected Return Model

- Identify a range of future liquidity events and assign a value and an event date to each possible future outcome. Possible scenarios include:
  - IPO
  - Sale or Merger
  - Dissolution
  - Continue as a Private Company
- For each event, a future value is determined and then allocated to each share class (considering their respective rights)
- Discount each future value to the present
- Multiply by the present value by the probability of the event occurring and calculate the probability weighted value for each share class
- The individual values are then summed to arrive at a probability weighted estimate of enterprise value

# Probability-Weighted Expected Return Model (continued)

## Example

Scenario	Probability	Enterprise Value*	Preferred Shares+*	Common Shares*
IPO	20%	150.0	19.2	19.2
Sale	20%	100.0	12.8	12.8
Private	30%	50.0	20.0	3.3
Dissolution	30%	15.6	5.0	0.0
Probability Weighted (\$/share)			\$13.9	\$7.4

\* Enterprise Value is as of exit event date but the pay offs for Preferred and Common are present value as on date of valuation.

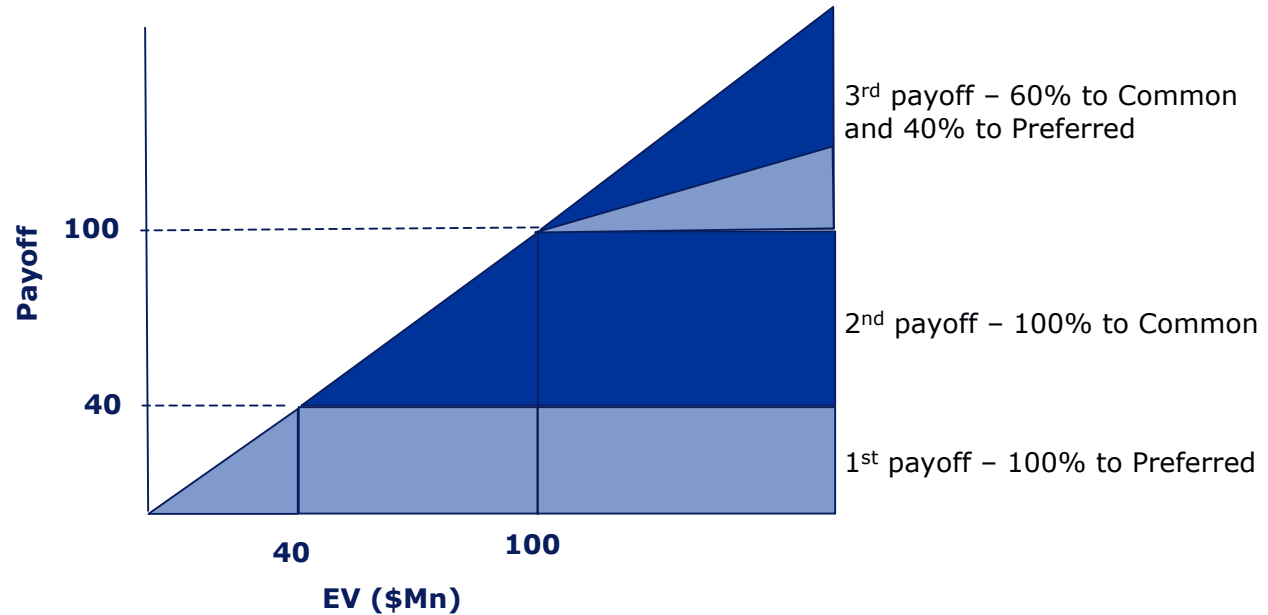
+ Assuming participation by preferred.

# Option Pricing Method

- Estimate the current value of the enterprise
- Estimate the value of common stock and preferred stock as call options on the enterprise's value, with exercise prices based on the liquidation preference of the preferred
- Similar in concept to the probability-weighted method, only the probabilities and distributions are built into a standard option pricing model

# Option Pricing Method (continued)

## Example



Enterprise Value	\$50 Mn
Preferred Shares	2 Mn
Preferred Liquidation	\$20/share
Common Shares	3 Mn

# Option Pricing Method (continued)

## Example

Variables	Payoff 1	Payoff 2	Payoff 3
Underlying Asset	\$50 Mn	\$50 Mn	\$50 Mn
Exercise	\$0	\$40 Mn	\$100 Mn
Risk free Rate	3%	3%	3%
Volatility	100%	100%	100%
Time to Event	2.0	2.0	2.0
Value of Option	\$50 Mn	\$29.4 Mn	\$18.4 Mn

Preferred Stock = 1st Option - 2nd Option + 40% 3rd Option  
= \$50Mn - \$29.4Mn + 0.4\*\$18.4Mn  
= \$28.0Mn (~\$14.0 per Preference Share)

Common Stock = 2nd Option - 40% 3rd Option  
= \$29.4Mn - 0.4\*\$18.4Mn  
= \$21.9Mn (~ \$7.3 per Common Share)

# Example – Carried Interest Valuation

- Carried interest provides the fund manager with a portion of any gains realized by the fund.
- Sample structure:
  - Investors receive a preferred return of 8%.
  - Fund managers receive a 20% catch-up.
  - Investors and fund managers share any excess return (80%/20%).
- Valuation methodologies:
  - Discounted cash flow
  - Option valuation

# Carried Interest Valuation – Discounted Cash Flow Approach

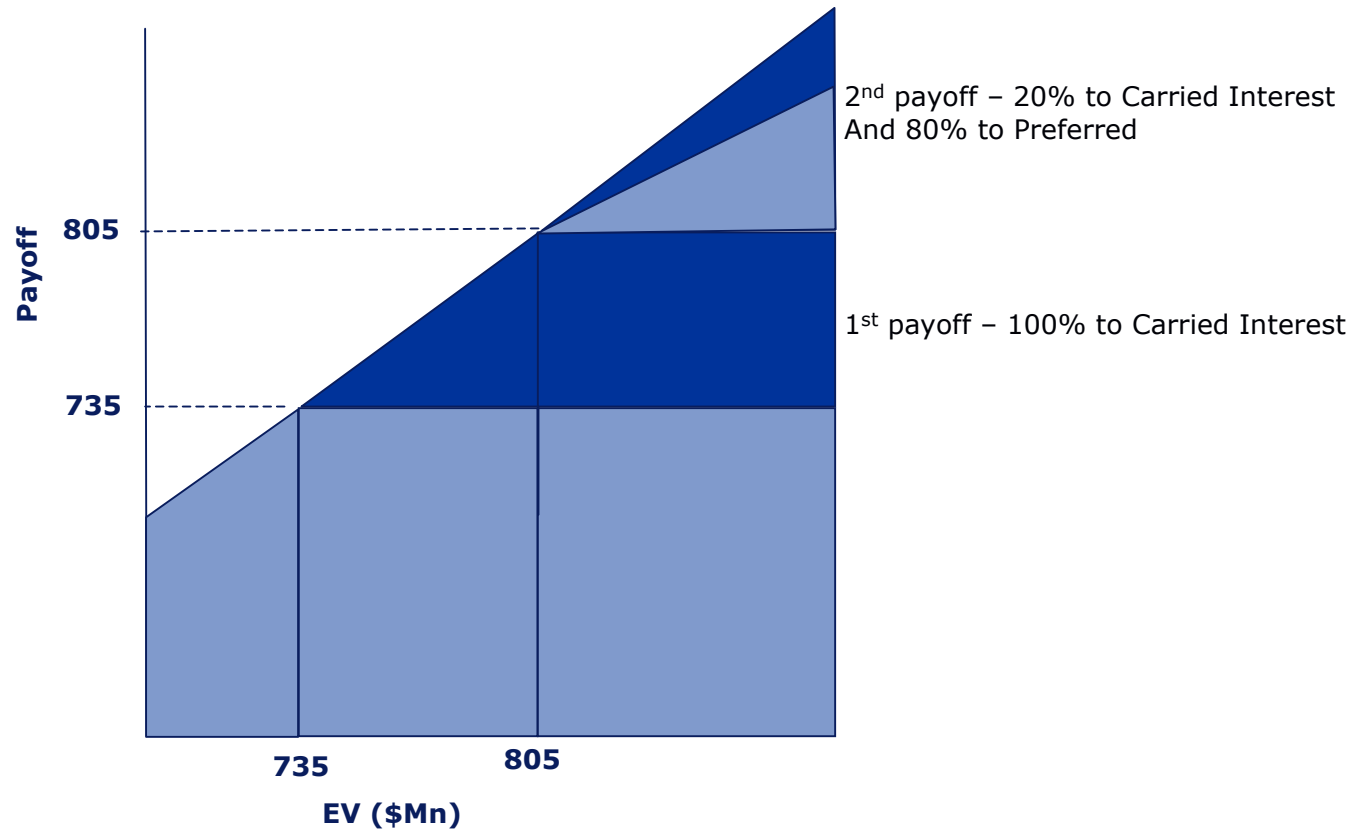
- The returns and overall value of the fund are analogous to the Enterprise Value of a company.
- Need to allocate the cash flows and overall Enterprise Value to each of the equity holders (i.e. the “waterfall”):
  - Management fee distributions
  - Preferred return
  - Catch-up provisions
  - Excess returns
- Carried interest = Catch-up + portion of excess returns
- Different risk profiles would be attributable to each of the above noted cash flows.

# Carried Interest Valuation – Option Approach

- The value of the carried interest can also be determined using the Option Pricing Method described previously.
- Estimate the value of preferred returns and carried interest as call options.
- Key variables:
  - Current value of underlying asset
  - Exercise price
  - Risk free rate
  - Volatility
  - Time to expiry

# Carried Interest Valuation – Option Approach (continued)

## Example



# Carried Interest Valuation – Option Approach (continued)

## Example

Variables	Payoff 1	Payoff 2
Underlying Asset	\$500 Mn	\$500 Mn
Exercise (8% and 10% return)	\$735 Mn	\$805 Mn
Risk free Rate	3%	3%
Volatility	20%	20%
Time to Event	5.0	5.0
Value of Option	\$47 Mn	\$35 Mn

$$\begin{aligned}\text{Common Stock} &= \text{1st Option} - 80\% \text{ 2nd Option} \\ &= \$47 \text{ Mn} - 0.8 * \$35 \text{ Mn} \\ &= \$19 \text{ Mn}\end{aligned}$$

# Questions

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