

**CARRIED INTEREST VALUATION TECHNIQUES: THE FIRST IN A TWO PART SERIES**

Carried interest is a right that allows the general partner ("GP") of a private investment fund to receive a share of the fund's profits in excess of the percentage of total capital that the GP contributed to the fund. The valuation of carried interest presents unique challenges due to the complexity of its structure and the multitude of factors that drive its value. The professionals at Cogent Valuation ("Cogent") have extensive experience in the valuation of carried interest, having performed over a hundred valuations of GP interests in private equity funds, venture capital funds, and hedge funds during the past eighteen years. This article, the first in a two-part series on carried interest, advances an overview of the two approaches used today to value carried interest, the benefits and shortcomings of each approach, and the primary factors that impact the fair market value.

In the early stage of a fund's life, carried interest holders contribute capital to the fund that will be deployed for investments. The capital requirements are satisfied through either cash or non-cash fee waivers. The carried interest holder will be entitled to a future stream of cash flows once the fund achieves certain return hurdles that are set in the fund agreement. These cash flows will continue, as long as the fund satisfies its return hurdles, until the fund has completed its investment cycle and liquidated all of its investments. Any valuation analysis of carried interest must account for all the cash flows associated with this interest. Currently, there are two primary methodologies used in the valuation of carried interest: 1) the discounted cash flow analysis ("DCF") and 2) a call option based model.

**DISCOUNTED CASH FLOW ANALYSIS**

The DCF involves projecting cash flows associated with the carried interest and discounting these cash flows with the appropriate risk adjusted discount rate. Typically, carried interest cash flows are derived from perceived risk, expected return, and timing assumptions of the underlying fund, which are based on industry data, past fund performance and discussions with the fund's management. Once the cash flows to the carried interest have been

calculated, the required rate of return of a carried interest investor (discount rate) is developed starting with the limited partner ("LP") return benchmarks of similar funds as the base discount rate. Additional risk premiums are added to quantify the increased level of risk of carried interest cash flows compared to LP cash flows.

**ADVANTAGES OF THE DCF ANALYSIS**

The strength of the DCF analysis lies in its flexibility and ability to include major elements of the funds' inflows and outflows of cash and distributions to investor classes. The DCF can be adapted to express the specific characteristics of complex fund structures, various waterfalls, return scenarios, and a degree of granularity in connection with each interest holder's capital and carried accounts. This granularity cannot be quantified through option pricing methodology. The DCF can be adjusted to incorporate a wider range of fund structures, relative to an option model. For example, for funds that have an LP preferred return hurdle for individual investments, the DCF analysis can take into consideration the timing and cash flows required for the LP to achieve the preferred hurdle rate. An option model requires several broad simplifying assumptions to

estimate the same preferred return hurdles.

The DCF benefits from being more intuitive than the option model analysis. Whereas the option model is perceived as a "black box", the inputs and outputs of the DCF analysis can be more easily observed and explained to parties of interest and in challenges from third parties. The DCF is modified readily to account for all of the factors that impact carried interest value, including fund size, amount of capital to be invested, investment holding period, management fees, other fund expenses, fund return expectations, and recycling. When there is a range of outcome scenarios for individual investments, a Monte Carlo simulation can be utilized to account for expected investment returns, and the timing of holding and liquidation periods.

**THE OPTION MODEL**

The carried interest can be viewed as a derivative that provides a return to the holder when the fund's investments appreciate over a certain hurdle amount. In the option model, the returns of the GP and LPs can be replicated using a portfolio of call options. Typically, the Black-Scholes-Merton ("BSM") model is the

## ABOUT COGENT

Cogent Valuation, with offices in San Francisco, Woodland Hills, and Costa Mesa, is a nationally recognized firm that has provided independent valuation and financial advisory opinions in thousands of situations since 1991. Cogent utilizes proprietary research, intensive due diligence, and the experience and insights of its seasoned valuation professionals to produce thoroughly supported, well-documented analyses that adhere to the best practices for enterprise, LP, and securities valuations and financial opinions.

preferred option model for the pricing estimate of carried interest. First, breakpoints are determined based on the fund's assumptions, structure and distribution waterfall. Next, inputs for the BSM model, including asset price, exercise price, risk-free rate, volatility, and time to expiration are estimated. If the fund has not made any investments, the asset price input is equal to the amount of capital expected to be invested over the life of the fund. If the fund has existing investments, the asset price is equal to the value of the fund's underlying investments plus the amount of capital expected to be invested in the future. The exercise price assumptions are variable and dependent upon the capital structure of the fund. The volatility input is the average expected volatility of the fund's underlying investments over the life of the fund, and time input is equal to the expected life of the fund. The product of the option model is the "option value" of the LP interests and carried interest.

**ADVANTAGES OF THE OPTION MODEL**

An advantage of the option model is its ease of construction. Once the fund's distribution waterfall is ascertained, the option model can be created quickly. There is no need to make assumptions for future fund returns, timing of investments, or discount rates. Instead, the only assumptions required are the volatility of the fund's future investments and the expected duration of the fund. The option model is capable of factoring in the value of *existing* investments. In a DCF, only the investment's *future* liquidation value is factored in the valuation analysis

along with future cash flows. The current value of an investment is considered in the DCF to the extent it can be used to predict the future liquidation value, whereas the option model will use the investment's current value as a discrete input.

**ISSUES WITH THE OPTION MODEL**

While fewer assumptions are required for the construction of the option model, the model's simplicity is also one of its deficiencies. One such shortcoming is the model's disproportionate reliance on the volatility assumption. The value of the carried interest is extremely sensitive to this one input, which means that selecting the correct volatility is essential to performing a meaningful calculation. The overall volatility of a fund fluctuates over time depending upon the phase of the fund (fund volatility is usually lower at the beginning when the fund has fewer investments, increases as the fund reaches investment capacity, and decreases again as the fund begins liquidating investments), increasing the difficulty in estimating the single appropriate volatility factor. Further, the inherent assumption built into the BSM that asset returns will be normally distributed and prices will follow a lognormal distribution does not apply to most funds. For many funds, this assumption fails as fund returns will be more positively skewed, with a few investments having outsized returns and the remaining investments providing average, little, or no returns.

**CONCLUSION**

Both the DCF and option model have unique inherent advantages. Since 1995, the professionals at Cogent Valuation have recommended and

practiced using the DCF analysis for purposes of determining the fair market value of carried interest. This method of vigorous analysis using the most fundamental concept of financial analysis and market value can be constructed to consider all of the relevant variables that impact the fair market value of carried interest. While the option model can be a useful tool for purposes of testing the reasonableness of the DCF value, the utility of the model is restricted to funds with expected returns that follow a normal distribution. Moreover, the option model's construct limitations cannot incorporate critical considerations that a knowledgeable investor would evaluate prior to making an informed investment in carried interest, such as performance of prior funds, performance of similar funds, industry and macroeconomic outlook, and the experience and track record of the fund's current managers and investment professionals. Given the limitations of the option model, the fair market value of carried interest is better derived through the specific fund's DCF analysis.

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