

Calculation of Investment Returns for Alternative Equities – Nonmarketable Program

Calculation of Returns

Each private market investment return shown in the schedule (that can be viewed by clicking on the link at the end of this document) is calculated using internal rate of return (IRR). This calculation of return is the recommended measurement of performance for presentation of investments in private equity investments and is cited in *AIMR Performance Presentation Standards Handbook*, p. 66 (Association for Investment Management and Research, 2nd Edition, 1997).

Cash flows for this purpose are of three types: capital contributed to the investment; capital distributed by the investment; and, for unrealized investments, the end of period value.

The first type of cash flow, capital contributed to the investment, is self-explanatory because all capital contributions are made in cash.

The second type of cash flow is equally straightforward when the investment distributes cash. In-kind distributions, on the other hand, are distributions of securities, not cash. The cash flow amount of a distribution of securities is equal to the market value of the securities as of the date of the distribution¹.

The method of determining the third type of cash flow for performance measurement purposes is the end of period value, which is based on UTIMCO's Board of Directors' policy. Valuations of partnership investments are determined using the general partner's valuation and will be adjusted for any cash flows that occurred between the general partner's valuation date and the valuation period being reported. Valuation for other non-publicly traded investments held by this asset class are based on the latest significant round of financing at which a price was established by a material third-party participant. Publicly traded restricted stocks and bonds held by this asset class are discounted 20% for illiquidity. In unusual circumstances a valuation adjustment will be made for a significant event not reflected by the valuation method used. If no ascertainable value is available for an investment, book value of the investment is used for the investment's market value.

The internal rate of return (IRR) is the discount rate (r) at which the net present values of all three types of cash flows from an investment sum to zero:

$$0 = \sum_{i=0}^n CF_i \left(1 + \frac{r}{c}\right)^{-(ic)}$$

¹ The UTIMCO staff places in-kind distributions into an internally managed portfolio of such securities, using the value at the distribution date as the cost of the investment. Performance after the distribution date is attributable to the UTIMCO staff, not the distributing investment.

After solving this equation iteratively to find an r that reduces the present value of the net stream of cash flows from the investment to zero, the result is annualized to produce the IRR reported by UTIMCO:

$$IRR = (1 + r)^c - 1$$

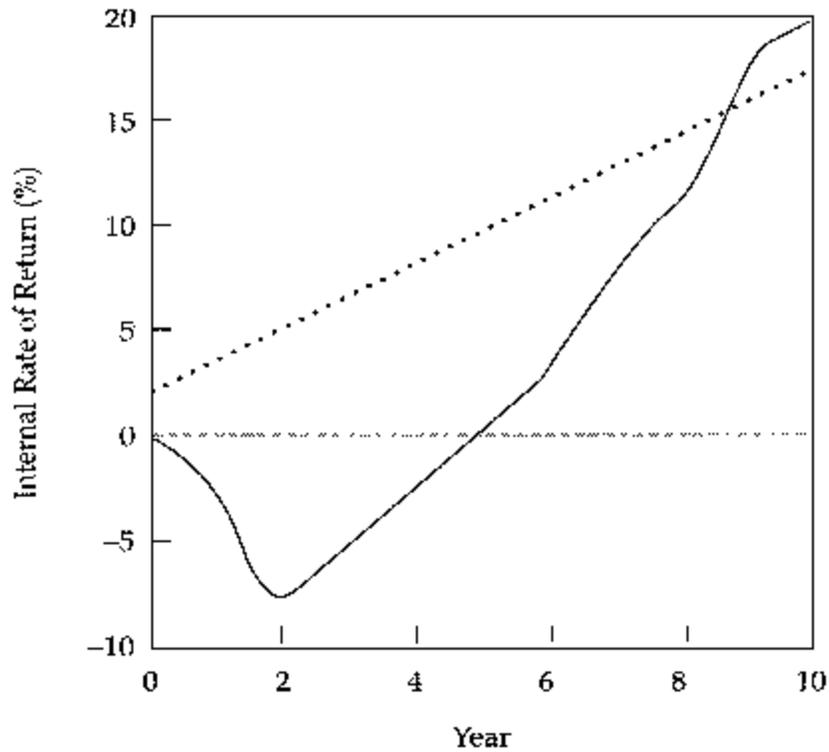
Timing of Returns²

During the early years of a typical private investment partnership, the investor can expect negative returns and cash flows. Returns are negative because cash is being called to invest in portfolio companies and to pay the general partner's management fees. Because initial investments are carried at cost, early-year returns are negative primarily because of the expense of the management fees and also because of the occasional decision to write off an investment early in the fund's investment cycle.

This pattern, illustrated by the solid line in Figure 1 below, is called the "J-curve phenomenon." The beginning of the J represents negative returns in the first two years. In year 3, however, returns begin to improve as some investments are written up in value. Break-even typically occurs around the fourth or fifth year of the investment in the fund. After year 5, liquidity events begin to occur as the general partner starts to execute exit strategies for the portfolio holdings. At this time, the fund's returns and positive cash flows are being realized.

² This section is adapted from "Structuring a Venture Capital Portfolio: An Investor's Perspective," Henry G. Robin, CFA, p. 14 (AIMR Readings in Venture Capital, 1997). Mr. Robin's article was itself an adaptation of a speech to the February 15, 1996 AIMR Conference on Venture Capital in San Francisco.

Figure 1. The J-Curve Phenomenon



It is important to note that the J-curve phenomenon applies to entire vintage years, as well as to individual private investments. Vintage years group all private investments from a particular fiscal year into a single investment, which possesses the same cash flow and valuation characteristics as a single investment. Thus, vintage year 1997 is in its second year in 1999 and could therefore be expected to exhibit negative returns, while vintage year 1992 is in its seventh year and can therefore be expected to feature positive returns.

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