Learning Module 2: Alternative Investment: Performance and Returns

Q.1219 When analyzing investment returns data, if we only include firms with better than average returns and exclude firms that performed poorly and ceased to exist over the given period, this type of bias is *most likely* known as:

A. Back fill bias.

B. Survivorship bias.

C. Time period bias.

The correct answer is **B.**

Survivorship bias occurs when we only consider the entities that "survived" a certain period and ignore those that did not. In this case, if you're only including firms with better-than-average returns and excluding those that performed poorly and ceased to exist, you are introducing survivorship bias. The firms that ceased to exist likely had lower returns, and ignoring them skews the data towards higher returns, leading to overly optimistic results.

A is incorrect. Backfill bias (or instant history bias) refers to a practice where a fund's historical record is inserted, in retrospect, into performance databases. This usually happens when the fund performs well in its early, non-public phase, and it's beneficial for the fund manager to include this in their record. It doesn't relate to excluding firms that performed poorly.

C is incorrect. Time period bias occurs when a test design is based on a time period that may make the results time-period specific.

Q.1257 A hedge fund has a beginning year value of $370 million and a 2 plus 20 fee structure with no hurdle rate or water mark. The structure of the hedge fund is set up so that the incentive fee is calculated net of the management fee. If the ending value of the fund is $400 million, then the total fees paid to the hedge fund for the period is *closest to*:

A. $12.4 million.

B. $15 million.

C. $16 million.

The correct answer is **A.**

$$\text{Management fee} = \$400 \text{ million} \times 2\% = \$8 \text{ million}$$
$$\text{Incentive fee} = (\$400 \text{ million} - \$8 \text{ million} - \$370 \text{ million}) \times 20\% = \$22 \text{ million} \times 20\% = \$4.4 \text{ r}$$
$$\text{Total fees} = \text{Management fee} + \text{Incentive fee} = \$8 \text{ million} + \$4.4 \text{ million} = \$12.4 \text{ million}$$

B is incorrect. It overestimates the total fees by not correctly applying the 2 plus 20 fee structure and the calculation method for the incentive fee, which should be net of the management fee.

C is incorrect. It significantly overestimates the total fees, likely due to a misunderstanding of how the incentive fee is calculated in relation to the management fee and the net gains of the fund.

CFA Level I, Alternative Investments, Learning Module 2: Alternative Investment: Performance and Returns. LOS (b): Calculate and interpret alternative investment returns both before and after fees.

Q.3287 Mega Star Investment is a hedge fund with $550 million initial capital and a '2 and 20' fee structure. The 2% management fee is based on year-end assets under management and the 20% incentive fee is not independent of the management fee. The value of the fund at the end of year one is $652 million. The investor's net return is *closest to*:

A. 12.47%.

B. 12.94%.

C. 15.31%.

The correct answer is **B.**

$$\begin{aligned}\text{Year-end fund value} &= \$652 \text{ million}\\ \text{Management fee} &= 2\% \times 652 = \$13.04 \text{ million}\\ \text{Incentive fee} &= (652 - 550 - 13.04) \times 20\% = \$17.79 \text{ million}\\ \text{Investor's net return} &= \frac{(652 - 550 - 13.04 - 17.79)}{550} = \frac{71.17}{550} = 12.94\%\end{aligned}$$

A is incorrect. The option suggesting a 12.47% return does not accurately account for the calculation of both the management and incentive fees according to the '2 and 20' structure. It likely underestimates the impact of these fees on the final return to the investor.

C is incorrect. The 15.31% return overestimates the investor's net return by not properly accounting for the deduction of both the management and incentive fees from the year-end fund value. This option likely ignores the cumulative impact of these fees on the net return, leading to an inflated figure.

CFA Level I, Alternative Investments, Learning Module 2: Alternative Investment: Performance and Returns. LOS (b): Calculate and interpret alternative investment returns both before and after fees.

Q.3289 Rosy Garcia is considering investing in a hedge fund or in a fund of funds. Garcia invests $50 million in the hedge fund and receives a yearly gross return of 10%. The fund has a '2 and 20' fee structure with no hurdle rate and management fees are calculated on an annual basis on assets under management at the beginning of the year. Incentive fees are calculated independently of management fees. Garcia also invests $60 million in a fund of funds (FOF) and earns a 5% yearly gross return. Assuming that the fund of funds fee structure is '1 and 10' and that all other fee structures in the FOF are similar to that of the hedge fund, the return to the investor of investing directly in the hedge fund will be:

A. 2.5% greater than the return generated by investing in the FOF.

B. 2.3% greater than the return generated by investing in the FOF.

C. 3.1% greater than the return generated by investing in the FOF.

The correct answer is **A.**

For investing directly $50 million in the hedge fund:

$$\$50 \text{ million} \times (10\%) = \$5 \text{ million profit}$$

Management fee:

$$\$50 \text{ million} \times (2\%) = \$1 \text{ million gross profit}$$

Incentive fee:

$$\$5 \text{ million} \times (0.20) = \$1 \text{ million}$$

Total fees:

$$\$1 \text{ million} + \$1 \text{ million} = \$2 \text{ million}$$

Return:

$$\frac{(\$5 \text{ million} - \$2 \text{ million})}{\$50 \text{ million}} = 6\%$$

For investing $60 million in the FOF:

$$\$60 \text{ million} \times (5\%) = \$3 \text{ million gross profit}$$

The FOF charges a fee of 1%:

$$60 \text{ million}(1\%) = \$0.6 \text{ million}$$

and an incentive fee of

$$\$3 \text{ million} \times (0.10) = \$0.3 \text{ million}$$

Return:

$$\frac{(\$3 \text{ million} - \$0.6 \text{ million} - \$0.3 \text{ million})}{\$60 \text{ million}} = 3.5\%$$

So

$$6\% - 3.5\% = 2.5\%$$

B is incorrect. It suggests a difference of 2.3% between the returns of the hedge fund and the FOF, which does not align with the calculated difference based on the given fee structures and gross returns.

C is incorrect. It suggests a difference of 3.1% between the returns of the hedge fund and the FOF, which exceeds the actual calculated difference. The discrepancy arises from not accurately accounting for the specific fee structures and their impact on the net returns of each investment option.

CFA Level I, Alternative Investments, Learning Module 2: Alternative Investment: Performance and Returns. LOS b: calculate and interpret alternative investment returns both before and after fees.

Q.3310 Right-Lance Capital is a hedge fund with $250 million as initial investment capital. A 2% management fee based on assets under management is charged at year-end, and a 20% incentive fee is charged on performance net of management fees. In the first year of operations, the fund earned a return of 16%. The investor's effective return given this fee structure is *closest to*:

A. 10.94%.

B. 11.20%.

C. 12.50%.

The correct answer is **A.**

$$\begin{aligned}
\text{Management fee} &= \$250 \text{ million} \times 1.16 \times 2\% = \$5.80 \text{ million} \\
\text{Incentive fee} &= (\$290 \text{ million} - \$250 \text{ million} - \$5.80 \text{ million}) \times 20\% = \$6.84 \\
\text{Total fees to Right} - \text{Lance Capital} &= \$5.80 \text{ million} + \$6.84 \text{ million} \\
&= \$12.64 \text{ million} \\
\text{Investor's return} &= \frac{(\$290 \text{ million} - \$250 \text{ million} - \$12.64 \text{ million})}{\$250 \text{ million}} = 10.94\%
\end{aligned}$$

B is incorrect. The option suggesting an 11.20% return does not accurately account for the total fees deducted from the fund's performance. It likely underestimates the impact of the incentive fee or miscalculates the management fee.

C is incorrect. Suggesting a 12.50% return overlooks the significant impact of the incentive fee on top of the management fee. This option significantly overestimates the investor's effective return by not properly accounting for the reduction in fund value due to the fees charged by Right-Lance Capital.

CFA Level I, Alternative Investments, Learning Module 2: Alternative Investment: Performance and Returns. LOS (b): Calculate and interpret alternative investment returns both before and after fees.

Q.3318 Clock Limited is a hedge fund with a total asset base of $10 million. The fund charges a 2% management fee based on assets under management at year-end and a 20% incentive fee in excess of a 0.5% hurdle rate. During the first year, the fund appreciates by 15%. If incentive fees are calculated independently and management fees are calculated at year-end, the investor's return net of performance fees is *closest to*:

A. 6.8%.

B. 8.1%.

C. 9.8%.

The correct answer is **C.**

$$\begin{aligned}
\text{Fund value at year-end} &= \$10 \text{ million} \times 1.15 = \$11.5 \text{ million} \\
\text{Management fees} &= \$11.5 \text{ million} \times 0.02 = \$0.23 \text{ million} \\
\text{Hurdle amount} &= \$10 \text{ million} \times 0.005 = \$0.05 \text{ million} \\
\text{Incentive fees} &= (\$11.5 \text{ million} - \$10 \text{ million} - \$0.05 \text{ million}) \times 0.20 = \$0.29 \text{ mil} \\
\text{Total fees paid to Clock Limited} &= \$0.23 \text{ million} + \$0.29 \text{ million} \\
&= \$0.52 \text{ million} \\
\text{Investor's net return} &= \frac{(\$11.5 \text{ million} - \$10 \text{ million} - \$0.52 \text{ million})}{\$10 \text{ million}} = 9.8\%
\end{aligned}$$

A is incorrect. The option suggesting a 6.8% net return does not accurately account for the calculation of management and incentive fees based on the fund's performance and the specified fee structure. It underestimates the net return to the investor after accounting for the total fees paid to Clock Limited.

B is incorrect. The option suggesting an 8.1% net return also fails to correctly calculate the impact of both the management fee and the incentive fee on the investor's return. This option does not properly apply the fee structure to the fund's performance, leading to an inaccurate estimation of the net return to the investor.

CFA Level I, Alternative Investments, Learning Module 2: Alternative Investment: Performance and Returns. LOS (b): Calculate and interpret alternative investment returns both before and after fees.

Q.3321 One of the key reasons for the integration of alternative investments with traditional investments in a portfolio context *most likely* includes:

A. Improved Sharpe ratio.

B. Attaining perfect correlation between the two categories.

C. Resulting portfolio risk is equal to the weighted average of individual standard deviations of asset classes.

The correct answer is **A.**

One of the reasons for including alternative investments in a portfolio of traditional investments includes the opportunity to improve the risk/return relationship within the portfolio context. The historically higher returns of alternative investments combined with portfolio risk reduction resulting from a less than perfect correlation between the asset category and traditional investments will result in an improvement of the overall risk-return tradeoff of the portfolio's Sharpe ratio.

B is incorrect. An imperfect and negative correlation between alternative investments and traditional investments serves to reduce portfolio risk relative to a weighting of individual standard deviations.

C is incorrect. When combining alternative with traditional investments, portfolio risk will reduce relative to the weighting of individual standard deviations due to the impact of correlation between the two (see above). This reduction will serve to increase the overall Sharpe ratio.

CFA Level I, Alternative Investments, Learning Module 2: Alternative Investment: Performance and Returns. LOS (b): Calculate and interpret alternative investment returns both before and after fees.

Q.3328 Graco Fund of Funds (FOF) invests $50 million each in the hedge funds, Lexor and Polygon. Graco FOF quotes a '2 and 20' free structure. The management fees are calculated based on asset values at year-end while incentive fees are calculated independently of management fees at year-end. At year-end, the value of investment in Lexor and Polygon was $45 million and $62 million, respectively. The investor's net-of-fees return is *closest to*:

A. 2.46%.

B. 3.89%.

C. 7.00%.

The correct answer is **A.**

Lexor’s management fees

$$45,000,000 \times 2\% = 900,000$$

Polygon’s management and incentive fees

$$62,000,000 \times 2\% = 1,240,000$$

$$(62,000,000 - 50,000,000) \times 20\% = 2,400,000$$

Total incentive and management fees

$$900,000 + 1,240,000 + 2,400,000 = 4,540,000$$

Net-of-fees return

$$\frac{(107\text{m} - 100\text{m} - 4.54\text{m})}{100\text{m}} = 2.46\%$$

B is incorrect. It likely overlooks the correct calculation of the incentive fees or misinterprets the '2 and 20' fee structure. The calculation of net-of-fees return must accurately account for both management and incentive fees based on the year-end values of the investments and the profits generated.

C is incorrect. It significantly overestimates the investor's net-of-fees return. It is essential to deduct both the management fees and the incentive fees from the total profits before calculating the net return to the investor.

CFA Level I, Alternative Investments, Learning Module 2: Alternative Investment: Performance and Returns. LOS (b): Calculate and interpret alternative investment returns both before and after fees.

Q.4202 Realest, a private real estate company, invested USD 20 million by constructing residential apartments in the first year. After six years, the company sells the apartments for USD 50 million. The company made an additional capital injection of USD 1.5 million and USD 0.8 million in years 2 and 3, respectively. The multiple of invested capital (MOIC) is *closest to:*

A. 0.57×

B. 3.14×

C. 2.24×

The correct answer is **C.**

Recall that MOIC is given by:

$$\text{MOIC} = \frac{\text{Realized value of investment} + \text{Unrealized value of investment}}{\text{Total amount of invested capital}}$$
$$= \frac{50}{20 + 1.5 + 0.8} = 2.24\times$$

A is incorrect. It suggests a MOIC of 0.57×, which would imply that the exit value of the investment is significantly less than the total invested capital. This does not align with the given scenario where the exit value (USD 50 million) is more than double the total invested capital (USD 22.3 million).

B is incorrect. It suggests a MOIC of 3.14×, which would imply an even higher return on the invested capital than what is calculated based on the given figures.

CFA Level I, Alternative Investments, Learning Module 2: Alternative Investment: Performance and Returns. LOS (b): Calculate and interpret alternative investment returns both before and after fees.

Q.4203 Which of the following is *most likely* a custom fee arrangement that is meant to attract investors into a start-up hedge fund?

A. Either/or fees.

B. Founder's shares.

C. Fees based on liquidity terms and asset size.

The correct answer is **B.**

Founder's shares are typically offered to the hedge fund's founders or management team at a discounted price or with other favorable terms. These shares often have a lower fee structure or other incentives attached to them that can be attractive to early investors. By offering founder's shares, hedge fund managers can align the interests of the investors with their own and create a sense of shared ownership and partnership between the investors and the management team.

A is incorrect. Either/or fees gives investors a choice between two fee structures, typically a performance-based fee or a fixed management fee. For example, an investor might have the option to pay a fixed management fee of 2% of assets under management or a performance-based fee of 20% of profits. This fee structure is used to provide investors with flexibility and can be attractive to investors uncertain about the hedge fund's expected returns.

C is incorrect. Fees based on liquidity terms and asset size offer different rates depending on the liquidity terms the investor is willing to take. Also, larger investors may give larger investors a discount. For example, a hedge fund might charge a higher management fee for assets under management up to a certain threshold and then charge a lower fee for assets above that threshold.

CFA Level I, Alternative Investments, Learning Module 2: Alternative Investment: Performance and Returns. LOS (b): Calculate and interpret alternative investment returns both before and after fees.

Q.4204 KTE capital is a hedge fund with initial investment capital of USD 200 million. The fund charged 1% based on the end-year asset under management and a 10% incentive fee. The fund specifies a hurdle rate of 5%, and the incentive fee is based on returns in excess of the hurdle rate. In the first year, the funds yield a return of 30%, and in the second year, the fund declined by 15%. If the management and incentive fees are calculated independently, the fund's net return in the second year is *closest to*:

A. -15.70%.

B. -15.85%.

C. -2.64%.

The correct answer is **B.**

In the first year,

$$\text{Management fee} = 200 \times 1.30 \times 0.01 = \text{USD } 2.6 \text{ million}$$
$$\text{Incentive fee} = (200 \times (1.30 - 0.05) - 200) \times 0.10 = \text{USD } 5 \text{ million}$$

As such,

$$\text{Total fees} = 2.6 + 5 = \text{USD } 7.6 \text{ million}$$

Therefore,

$$\text{Investor return} = \frac{260 - 200 - 7.6}{200} = 26.20\%$$

The ending value of the fund is, therefore:

$$\text{Ending value (1st year)} = 200 \times 1.2620 = \text{USD } 252.40 \text{ million}.$$

In the second year, the management fee is:

$$\text{Management fee} = (252.40 \times 0.85) \times 0.01 = \text{USD } 2.1454 \text{ million}$$

There is no incentive in the second year since the fund value declined. Note that in the second year, the fund declined to the value of:

$$252.40 \times 0.85 = \text{USD } 214.54 \text{ million}$$

So that the investor's return in the second year is:

$$\text{Investor return for the second year} = \frac{214.54 - 2.1454 - 252.40}{252.40} = -15.85\%$$

A is incorrect. This option underestimates the impact of the management fee on the fund's net return in the second year. It does not accurately reflect the calculation based on the fund's performance and the structure of the fees.

C is incorrect. It fails to reflect the substantial negative return experienced by the fund in the second year.

CFA Level I, Alternative Investments, Learning Module 2: Alternative Investment: Performance and Returns. LOS (b): Calculate and interpret alternative investment returns both before and after fees.

Q.4205 DEF investment group invested $150 million in a private equity fund with a 2.5% management fee based on the end-year asset under management (AUM) and a 20% incentive fee, which are calculated independently. The fund specifies a hurdle rate of 8%. In the first year, the fund yielded a return of 15%, and in the second year, it grew by 20%. The incentive fee paid in the second year is *closest to:*

A. $2.11 million.

B. $4.00 million.

C. $3.98 million.

The correct answer is **C.**

In the first year,

$$\text{Management fee} = 150 \times 1.15 \times 0.025 = \$4.3125 \text{ million}$$
$$\text{Incentive fee} = ((1.15 \times 150) - 150 - (0.08 \times 150)) \times 0.20 = \$2.1 \text{ million.}$$

Therefore, the total fees are:

$$4.3125 + 2.1 = \$6.4125 \text{ million}$$

Hence the return to investors in the first year is,

$$\text{Investor return} = \frac{1.15 \times 150 - 6.4125 - 150}{150} = 10.725\%$$

As such, the ending value of the first year (beginning value of the second year) is $166.0875 (= 1.10725 \times 150)$

As such, the incentive fee in the second year is,

$$\text{Incentive fee} = [(166.0875 \times 1.20 - 166.0875) - (0.08 \times 166.0875)] \times 0.20 = \$3.986 \text{ million.}$$

A is incorrect. The option suggests an incentive fee of \$2.11 million, which underestimates the actual incentive fee calculated based on the fund's performance and the specified fee structure. This option does not accurately account for the 20% return in the second year and its impact on the incentive fee calculation.

B is incorrect. This discrepancy may arise from not precisely accounting for the hurdle rate and its impact on the calculation of the incentive fee based on the returns exceeding this rate.

CFA Level I, Alternative Investments, Learning Module 2: Alternative Investment: Performance and Returns. LOS (b): Calculate and interpret alternative investment returns both before and after fees.

Q.4342 Which of the following statements is *least likely* a characteristic of alternative investments that the investor should consider when assessing their performance relative to other investments over time?

A. They often operate in more efficient markets compared to traditional investments.

B. They often require a longer investment horizon and are less liquid than traditional investments.

C. Unlike traditional investments, they require staggered capital commitments over time, where the entire capital is invested upfront.

The correct answer is **A.**

Alternative investments do not typically operate in more efficient markets compared to traditional investments. In fact, one of the key characteristics of alternative investments is that they often operate in less efficient markets. This is because alternative investments, such as hedge funds, private equity, and real estate, often involve complex strategies and structures that are not as easily understood or accessible as traditional investments like stocks and bonds.
These investments often involve a higher degree of risk and uncertainty, leading to inefficiencies in pricing and valuation. This can create opportunities for skilled managers to generate higher returns but also increase the risk of loss. Therefore, investors need to understand the unique characteristics and risks associated with alternative investments before adding them to their portfolios.
B is incorrect. It is also true that alternative investments often require a longer investment horizon and are less liquid than traditional investments. This is another characteristic of alternative investments that investors should consider when assessing their performance relative to other investments over time.

C is incorrect. Indeed, alternative investments often require staggered capital commitments over time, unlike traditional investments, where the entire capital is invested upfront. This is a characteristic of alternative investments that investors should consider when assessing their performance relative to other investments over time.

CFA Level I, Alternative Investments, Learning Module 2: Alternative Investment: Performance and Returns. LOS (a): Describe the performance appraisal of alternative investments.

Q.4343 Which of the following statements is most likely accurate regarding the performance appraisal of alternative investments compared to traditional investments?

A. Performance appraisal of traditional asset classes is more complex due to their standardized nature and the absence of further capital commitments.

B. Performance appraisal of alternative investments is straightforward due to their customized nature and the potential for higher returns.

C. Performance appraisal of traditional asset classes is straightforward due to their standardized nature and continuous price quotations, while alternative investments are more complex due to their unique features and potential for additional capital commitments.

The correct answer is **C.**

Performance appraisal of traditional asset classes is straightforward due to their standardized nature and continuous price quotations, while alternative investments are more complex due to their unique features and potential for additional capital commitments. Traditional asset classes such as public equity and debt securities are standardized, meaning they are uniform in nature and traded on public exchanges where prices are continuously quoted. This makes the performance appraisal of these assets relatively straightforward as it involves comparing the returns of these assets with their respective benchmarks.
On the other hand, alternative investments are customized and may require additional capital commitments at various stages of the investment. They may also involve complex strategies such as short selling or leverage. These unique features make the performance appraisal of alternative investments more complex. It involves assessing the returns of these investments in light of the additional risks and capital commitments they entail. Therefore, the performance appraisal of traditional asset classes is straightforward, while that of alternative investments is more complex.
A is incorrect. The standardized nature and absence of further capital commitments of traditional asset classes make their performance appraisal less complex, not more. The uniformity and continuous price quotations of these assets simplify the process of comparing their returns with their respective benchmarks.

B is incorrect. The performance appraisal of alternative investments is not straightforward due to their customized nature and the potential for higher returns. The unique features of these investments, such as the potential for additional capital commitments and the use of complex strategies, make their performance appraisal more complex. It involves assessing the returns of these investments in light of the additional risks and capital commitments they entail.

CFA Level I, Alternative Investments, Learning Module 2: Alternative Investment: Performance and Returns. LOS (a): Describe the performance appraisal of alternative investments.

Q.4344 Consider an investor who has committed capital to a private equity fund. The fund has charged a management fee and a setup fee and is now in the process of investing the capital for initiating operations for a startup. The investor is currently experiencing negative returns due to the fees and expenses incurred. However, the fund managers expect the startup to succeed, leading to asset appreciation and income generation in excess of costs. Based on this scenario, in which phase of the investment life cycle is the investor's capital currently?

A. Capital distribution phase.

B. Capital deployment phase.

C. Capital commitment phase.

The correct answer is **B.**

The investor's capital is currently in the Capital Deployment Phase. In the context of private equity, the capital deployment phase is the period during which the fund is actively investing the committed capital into portfolio companies. This phase typically involves the acquisition of assets, the initiation of operations, and the payment of various fees and expenses, including management fees and setup fees.
During this phase, investors often experience negative returns due to the costs associated with these activities. However, the expectation is that these investments will eventually generate returns that exceed these costs, leading to a positive return on investment. The capital deployment phase is a critical period in the investment life cycle, as the decisions made during this phase can significantly impact the ultimate success or failure of the investment.
A is incorrect. The Capital Distribution Phase is the period during which the private equity fund returns capital to its investors. This phase occurs after the capital deployment phase and typically involves the sale of portfolio companies and the distribution of the proceeds to investors. The investor in the scenario is not yet in this phase, as the fund is still in the process of deploying the capital and has not yet begun to generate returns.

C is incorrect. The Capital Commitment Phase is when investors commit to invest a certain amount of capital in a private equity fund. This phase occurs before the capital deployment phase and involves the legal and financial arrangements necessary to secure the commitment of capital.

CFA Level I, Alternative Investments, Learning Module 2: Alternative Investment: Performance and Returns. LOS (b): Calculate and interpret alternative investment returns both before and after fees.

Q.4345 A real estate fund is spending money on building and renovating properties. The cash outflows currently exceed the inflows, reducing the returns. However, the fund managers expect the properties to appreciate, leading to income generation in excess of costs. Based on this scenario, which phase of the investment life cycle is the real estate fund currently in?

A. Capital distribution phase.

B. Capital deployment phase.

C. Capital commitment phase.

The correct answer is **B.**

The real estate fund is currently in the Capital Deployment Phase. This phase of the investment life cycle is characterized by the active investment of capital into projects, such as building and renovating properties in the case of a real estate fund. During this phase, the fund is spending money, and cash outflows typically exceed inflows.
This can lead to a temporary reduction in returns. However, the goal of this phase is to create value that will generate future income. In the case of a real estate fund, this value is created through property appreciation and rental income. The capital deployment phase is a critical period in the investment life cycle, as the decisions made during this phase can significantly impact the fund's future performance.
A is incorrect. The Capital Distribution Phase is the final phase of the investment life cycle, during which the returns from the investment are distributed to the investors. This phase occurs after the capital deployment phase and is characterized by positive cash inflows as the fund begins to generate income. In the given scenario, the fund is not yet in this phase as it is still spending money, and the cash outflows exceed the inflows.

C is incorrect. The Capital Commitment Phase is the initial phase of the investment life cycle, during which investors commit capital to a fund. This phase occurs before the capital deployment phase and involves raising capital and setting the terms of the investment. In the given scenario, the fund is past this phase as it is already spending money on building and renovating properties.

CFA Level I, Alternative Investments, Learning Module 2: Alternative Investment: Performance and Returns. LOS (b): Calculate and interpret alternative investment returns both before and after fees.

Q.4346 You are a financial analyst at a private equity firm evaluating a potential investment opportunity. The investment requires an initial outlay of $1 million, followed by cash inflows of $200,000 at the end of each year for the next 7 years. You are tasked with calculating the Internal Rate of Return (IRR) to assess the viability of this investment. Which of the following *most likely* describes the process you would use to calculate the IRR for this investment?

A. You would set the net present value (NPV) of the cash flows equal to zero and solve for the discount rate, which is the IRR.

B. You would calculate the average annual return by dividing the total return ($1.4 million) by the initial investment ($1 million) and then subtract one to get the IRR.

C. You would calculate the IRR by dividing the initial investment ($1 million) by the total return ($1.4 million) and then subtracting one.

The correct answer is **A.**

The Internal Rate of Return (IRR) is a financial metric that is widely used in capital budgeting and corporate finance. It is a discount rate that makes the net present value (NPV) of all cash flows (both positive and negative) from a particular project equal to zero. IRR calculations rely on the same formula as NPV does.
The IRR can be calculated as the discount rate that makes the NPV of future cash flows equal to zero. In this case, the formula provided in Choice A is correct: 0 = -$1 million + ($200,000 / (1+IRR)) + ($200,000 / (1+IRR)^2) + ... + ($200,000 / (1+IRR)^7). This formula correctly represents the process of calculating the IRR, which involves setting the NPV of the cash flows equal to zero and solving for the discount rate.
B is incorrect. The method described in Choice B is incorrect in calculating the IRR. The IRR is not simply the average annual return divided by the initial investment minus one. This method does not consider the time value of money, which is a key component of the IRR calculation. The time value of money is the concept that money available at present is worth more than the same amount in the future due to its potential earning capacity.

C is incorrect. The method described in Choice C is also not the correct way to calculate the IRR. The IRR is not calculated by dividing the initial investment by the total return and subtracting one. This method, like the one in Choice B, does not consider the time value of money. The IRR calculation requires that the present value of future cash inflows be equal to the initial investment, considering the time value of money.

CFA Level I, Alternative Investments, Learning Module 2: Alternative Investment: Performance and Returns. LOS (b): Calculate and interpret alternative investment returns both before and after fees.

Q.4347 Imagine you are a private equity manager evaluating the performance of an investment. You have invested a total capital of $5 million in a project. After the project's completion, the total value returned to the investors is $15 million. The Multiple of Invested Capital (MOIC) for the project is *closest to:*

A. 0.33x

B. 3.00x

C. 7.00x

The correct answer is **B.**

The Multiple of Invested Capital (MOIC) is a performance measure used in private equity to evaluate the return on investment. It is calculated as:

$$\text{MOIC} = \frac{(\text{Realized Value of Investment} + \text{Unrealized Value of Investments})}{\text{Total Capital Invested}}$$

In this scenario, the total value returned to the investors is $15 million, and the total capital invested is $5 million.
Therefore, the MOIC is calculated as $15 million / $5 million, which equals 3x. This means that for every dollar invested in the project, $3 was returned to the investors. This strong performance indicates that the investment was successful and generated a significant return. The MOIC is a simple and straightforward measure that provides a clear picture of the return on investment, making it a valuable tool for private equity managers.

A is incorrect. This option suggests a MOIC of 0.33x, which would imply that for every dollar invested, only $0.33 was returned to the investors. The calculation error here likely stems from inverting the formula, dividing the total capital invested by the total value returned, which is not how MOIC is calculated.

C is incorrect. This option indicates a MOIC of 7.00x, suggesting that for every dollar invested, $7 were returned to the investors. This figure significantly overestimates the return on investment as per the given scenario.

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Q.4348 An investor has a cash investment of $15,000 with a periodic rate of return of 7%. He borrowed an additional $5,000 at a periodic rate of 2% to increase his investment size. The leveraged rate of return for the period is *closet to:*

A. 8.0%

B. 8.6%

C. 9.0%

The correct answer is **B.**

The leveraged rate of return is calculated using the formula:

$$r_L = \frac{r_c \times (V_c + V_b) - (V_b \times r_b)}{V_c}$$

Where:
V_c = cash investment.
r = periodic rate of return.
r_b = borrowing rate of return.
V_b = amount of borrowed funds.
r_L = leveraged rate of return for the period.
In this case, the total investment is $20,000 ($15,000 cash investment + $5,000 borrowed), the borrowing cost is $100 (=$5,000 * 2%), and the cash investment is $15,000. The investment return is $1,400 (=$20,000 * 7%).

$$\text{Leveraged Rate of Return} = \frac{(\$1,400 - \$100)}{\$15,000} = 8.67\%$$

A is incorrect. A leveraged rate of return of 8.0% would imply that the investor's borrowing cost is higher or his investment return is lower than in the given scenario. This is not the case here, as the investor's borrowing cost is 2%, and his investment return is 7%, resulting in a leveraged return rate of 8.5%.

C is incorrect. A leveraged rate of return of 9.0% would imply that the investor's investment return is higher or his borrowing cost is lower than in the given scenario. This is not the case here, as the investor's borrowing cost is 2%, and his investment return is 7%, resulting in a leveraged return rate of 8.5%.

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Q.4350 In the context of a financial crisis, such as the one in 2008, which of the following statements most likely describes the impact of limited access to borrowed funds on leveraged investments?

A. It can enhance the returns of leveraged investments as it reduces the risk of over-leveraging.

B. It has no significant impact on leveraged investments, as investors can rely on their equity positions.

C. It an lead to significant losses for leveraged investments due to the inability to meet margin calls, leading to forced liquidations at unfavorable prices.

The correct answer is **C.**

Limited access to borrowed funds during a financial crisis can lead to significant losses for leveraged investments due to the inability to meet margin calls, leading to forced liquidations at unfavorable prices. Leveraged investments are those that use borrowed funds to increase potential returns. However, they also increase potential losses.
In a financial crisis, lenders often tighten their lending standards, making it more difficult for investors to borrow funds. If an investor is unable to meet a margin call because they cannot borrow additional funds, they may be forced to sell their investments at unfavorable prices to cover the margin call. This can lead to significant losses.
The 2008 financial crisis provided a clear example of this, as many leveraged investors were forced to sell assets at depressed prices because they could not meet margin calls. This is why understanding the risks associated with leveraged investments, including the risk of limited access to borrowed funds, is crucial for investors.
A is incorrect. The statement that limited access to borrowed funds during a financial crisis can enhance the returns of leveraged investments as it reduces the risk of over-leveraging is incorrect. While it is true that limited access to borrowed funds can prevent over-leveraging, it does not necessarily enhance returns. In fact, it can lead to significant losses if investors cannot meet margin calls and are forced to sell their investments at unfavorable prices.

B is incorrect. The statement that limited access to borrowed funds during a financial crisis does not significantly impact leveraged investments as investors can rely on their equity positions is incorrect. Leveraged investments are risky and rely on borrowed funds to enhance potential returns. Limited access to these funds, especially during a financial crisis, can lead to significant losses. Equity positions alone may not be sufficient to cover these losses.

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Q.4352 An investor is considering investing in an alternative investment fund. He is aware that, unlike traditional asset classes, alternative investments often impose additional performance fees calculated as a percentage of the fund's periodic returns. He is also aware that the fee structure can vary based on the timing and nature of his involvement in the fund. If he invests substantial capital in a hedge fund during its early stages, what might be the *most likely* impact on the incentive fees he faces and why?

A. He might face significantly higher incentive fees due to the fund's initial growth phase, as the fund manager may increase fees to capitalize on the growth.

B. He might face significantly lower incentive fees due to the fund's initial growth phase, as the fund manager may offer lower fees to attract more capital.

C. His incentive fees will remain unchanged regardless of the fund's growth phase, as alternative investment fees are typically flat and do not vary with the fund's performance.

The correct answer is **B.**

When an investor invests substantial capital in a hedge fund during its early stages, he might face significantly lower incentive fees due to the fund's initial growth phase. The fund manager may offer lower fees to attract more capital. In the early stages of a hedge fund, the fund manager often tries to attract as much capital as possible to grow the fund. One of the ways to do this is by offering lower incentive fees.
These lower fees can make the fund more attractive to potential investors, as they can keep a larger portion of any profits generated by the fund. This strategy can be particularly effective in attracting large investors, who can significantly boost the fund's capital. Once the fund has grown and established a track record of performance, the fund manager may increase the incentive fees. However, the initial investors who came in when the fees were lower may be able to continue enjoying the lower fee structure.
A is incorrect. It is unlikely that an investor would face significantly higher incentive fees due to the fund's initial growth phase. As mentioned above, fund managers often offer lower fees in the early stages of a fund to attract capital. Increasing fees during this phase could deter potential investors and hinder the fund's growth.

C is incorrect. While it is true that some alternative investment fees are flat and do not vary with the fund's performance, this is not always the case. Many alternative investments, including hedge funds, charge performance-based incentive fees. These fees are typically a percentage of the fund's profits, and they can vary depending on the fund's performance and the timing and nature of an investor's involvement in the fund.

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Q.4353 An investor is considering investing in a new hedge fund. The fund manager offers the investor a choice between a standard fee structure and a founder's share fee structure. The standard fee structure includes a 2% management fee and a 20% performance fee. The founder's share fee structure, on the other hand, offers a 1.5% management fee and a 10% performance fee but only applies to the first $100 million in assets invested. The investor plans to invest $150 million in the fund.
Which of the following statements is *most likely* to be true regarding the fee structures offered to the investor? The investor will pay lower fees under the:

A. standard fee structure for the entire investment amount.

B. founder's share fee structure for the entire investment amount.

C. founder's share fee structure for the first $100 million and under the standard fee structure for the remaining $50 million.

The correct answer is **C.**

The investor will pay lower fees under the founder's share fee structure for the first $100 million and under the standard fee structure for the remaining $50 million. The founder's share fee structure offers a lower management fee (1.5% vs. 2%) and a lower performance fee (10% vs. 20%) compared to the standard fee structure. However, this lower fee structure only applies to the first $100 million in assets invested.
For the remaining $50 million, the investor would have to pay the standard fee structure, which is higher. Therefore, the investor would pay lower fees under the founder's share fee structure for the first $100 million and under the standard fee structure for the remaining $50 million. This strategy allows the investor to minimize the total fees paid while still investing the desired amount in the hedge fund.

A is incorrect. The investor will not pay lower fees under the standard fee structure for the entire investment amount. The standard fee structure has higher management and performance fees compared to the founder's share fee structure. Therefore, the investor would pay more in fees under the standard fee structure for the entire investment amount.

B is incorrect. The investor will not pay lower fees under the founder's share fee structure for the entire investment amount because this fee structure only applies to the first $100 million in assets invested. For the remaining $50 million, the investor would have to pay the standard fee structure, which is higher.

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Q.4354 Which of the following statements is *most likely* to be true regarding "either/or" fee arrangement in alternative investments?

A. The fund manager will always choose the fixed management fee, as it guarantees a steady income stream.

B. The fund manager will always choose the variable performance fee, as it has the potential for higher returns.

C. The fund manager's choice will depend on the fund's performance, with the fixed management fee chosen during down years and the variable performance fee chosen during up years.

The correct answer is **C.**

The fund manager's choice will depend on the fund's performance, with the fixed management fee chosen during down years and the variable performance fee chosen during up years. This is because the fixed management fee of 1% is guaranteed regardless of the fund's performance, providing a steady income stream during periods of poor performance. On the other hand, the variable performance fee of 30% above a mutually agreed-upon annual hurdle has the potential for higher returns during periods of strong performance.
Therefore, the fund manager would likely choose the fixed management fee during down years when the fund's performance is below the hurdle rate and the variable performance fee during up years when the fund's performance is above the hurdle rate. This allows the fund manager to maximize their income while also aligning their interests with those of the investor, as they are incentivized to improve the fund's performance in order to earn the higher variable performance fee.
A is incorrect. While the fixed management fee does guarantee a steady income stream, it is not necessarily the case that the fund manager will always choose it. If the fund's performance is strong and exceeds the hurdle rate, the fund manager could earn a higher income from the variable performance fee. Therefore, the fund manager's choice will depend on the fund's performance, not just the certainty of the fixed management fee.

B is incorrect. While the variable performance fee does have the potential for higher returns, it is not necessarily the case that the fund manager will always choose it. If the fund's performance is poor and does not exceed the hurdle rate, the fund manager would earn nothing from the variable performance fee and would be better off choosing the fixed management fee. Therefore, the fund manager's choice will depend on the fund's performance, not just the potential for higher returns from the variable performance fee.

Q.4355 A small fund with strong performance and capacity constraints is considering its fee structure. The fund manager is aware that larger investors may demand lower fees but is reluctant to reduce the fund's fees. Which of the following actions is the fund manager *most likely* to take?

A. The fund manager will reduce the fund's fees to attract larger investors.

B. The fund manager will increase the fund's fees to compensate for the loss of larger investors.

C. The fund manager will maintain the fund's higher fees and may decline business from larger investors.

The correct answer is **C.**

The fund manager is most likely to maintain the fund's higher fees and may decline business from larger investors. This is because the fund manager is aware of the fund's strong performance and capacity constraints. The fund's strong performance means that it is likely to attract investors even with higher fees. Moreover, the capacity constraints mean that the fund may not be able to accommodate a large number of investors.
Therefore, the fund manager may prefer to maintain the higher fees to maximize the fund's revenue and may decline business from larger investors who demand lower fees. This strategy allows the fund to maintain its profitability while managing its capacity constraints. It also ensures that the fund's performance is not diluted by accommodating a large number of investors. This approach is often adopted by small funds with strong performance and capacity constraints.
A is incorrect. While reducing the fund's fees could attract larger investors, it could also reduce the fund's revenue and profitability. Moreover, the fund's capacity constraints mean that it may not be able to accommodate a large number of investors. Therefore, reducing the fees may not be the best strategy for the fund manager.

B is incorrect. Increasing the fund's fees to compensate for the loss of larger investors is not a viable strategy. Higher fees could deter potential investors and reduce the fund's investor base. Moreover, it could also negatively impact the fund's reputation in the market. Therefore, the fund manager is unlikely to increase the fund's fees.

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Q.4400 If the risks associated with the investment lead to a reduction in the IRR versus the initial expectations, what does this *most likely* imply about the investor's compensation for the risk and illiquidity of the investment? The investor:

A. is overcompensated for the risk and illiquidity of the investment.

B. is adequately compensated for the risk and illiquidity of the investment.

C. may not be adequately compensated for the risk and illiquidity of the investment.

The correct answer is **C.**

If the risks associated with the investment lead to a reduction in the Internal Rate of Return (IRR) versus the initial expectations, it implies that the investor may not be adequately compensated for the risk and illiquidity of the investment. The IRR is a measure of the potential return on investment, taking into account the time value of money. It is used to compare the profitability of different investments.
If the IRR is lower than initially expected, it means that the net present value of the future cash inflows from the investment is lower than initially expected. This could be due to higher-than-expected costs, lower-than-expected revenues, or a longer-than-expected time horizon for the investment to pay off. All of these factors increase the risk of the investment. If the investor is not receiving a higher return to compensate for this increased risk, then they may not be adequately compensated for the risk and illiquidity of the investment.
A is incorrect. If the IRR is lower than initially expected, it does not mean that the investor is overcompensated for the risk and illiquidity of the investment. On the contrary, it suggests that the investor may not be receiving a high enough return to compensate for the increased risk and illiquidity.

B is incorrect. If the IRR is lower than initially expected, it does not necessarily mean that the investor is adequately compensated for the risk and illiquidity of the investment. The adequacy of the compensation would depend on the investor's risk tolerance and the returns available from other, similar investments. If the IRR is lower than the returns available from other, similar investments, then the investor may not be adequately compensated for the risk and illiquidity of the investment.

CFA Level I, Alternative Investments, Learning Module 2: Alternative Investment: Performance and Returns. LOS (b): Calculate and interpret alternative investment returns both before and after fees.
