

Level III of the CFA® Exam

Essay-Set Questions with Answers - Private Markets Pathway - Volume 1

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Case 5: Alex Thompson

Alex Thompson, a senior investment analyst at Apex Capital, is tasked with evaluating the performance metrics of a new private equity fund the firm is considering. The fund will focus on buyout and growth equity investments. Apex Capital aims to enhance its portfolio by including high-potential private investments that can generate superior returns.

The firm's research team has provided the following data to aid in the analysis:

1. The fund's initial capital is \$200 million.
2. The fund's investments are projected to return \$500 million over a 10-year period.
3. The fund will distribute \$150 million to investors at the end of year 5 and \$200 million at the end of year 10.
4. The fund's management fee is 2% per year, and the carried interest is 20% on profits exceeding an 8% hurdle rate annually with no compounding.
5. The remaining value of the investment portfolio at the end of year 10 is projected to be \$150 million.

Q. 1 Calculate the Distributed to Paid-In (DPI) multiple for Apex Capital's private equity fund at the end of year 10.

The Distributed to Paid-In (DPI) multiple is a performance metric used in private equity to measure the cumulative distributions to investors relative to the total capital they have contributed. It indicates how much money has been returned to investors compared to their invested capital.

$$\text{DPI} = \frac{\text{Total Distributions}}{\text{Paid-in Capital}}$$

Total distributions: The sum of all cash flows distributed to investors.

Paid-in capital: The total amount of capital contributed by investors

Calculations:

- Total distributions:
 - Distribution at the end of year 5: \$150 million
 - Distribution at the end of year 10: \$200 million
 - Total distributions = \$150 million + \$200 million = \$350 million
- Paid-In capital: \$200 million

$$\text{DPI} = \frac{\$350 \text{ million}}{\$200 \text{ million}} = 1.75$$

So, the DPI multiple at the end of year 10 is 1.75.

Private Markets Pathway, Volume 1, Learning Module 1: Private Investments and Structures LOS 1(c): Discuss the difference between public and private market performance, and calculate, interpret, and discuss the use of performance metrics including distributed to paid-in, residual value to paid-in, and total value to paid-in.

Q. 2 Calculate the Residual Value to Paid-In (RVPI) multiple for Apex Capital's private equity fund at the end of year 10.

The Residual Value to Paid-In (RVPI) multiple is a performance metric used in private equity to measure the remaining value of an investment portfolio relative to the total capital contributed by investors. It indicates the unrealized value of the fund's investments.

$$RVPI = \frac{\text{Residual Value}}{\text{Paid-In Capital}}$$

Residual value: The current value of the remaining investments in the portfolio.

Paid-in capital: The total amount of capital contributed by investors.

Calculations:

- Residual value at the end of year 10: \$150 million
- Paid-In capital: \$200 million

$$RVPI = \frac{150}{200} = 0.75$$

So, the RVPI multiple at the end of year 10 is 0.75.

Private Markets Pathway, Volume 1, Learning Module 1: Private Investments and Structures LOS 1(c): Discuss the difference between public and private market performance, and calculate, interpret, and discuss the use of performance metrics including distributed to paid-in, residual value to paid-in, and total value to paid-in.

Q. 3 Calculate the Total Value to Paid-In (TVPI) multiple for Apex Capital's private equity fund at the end of year 10.

The Total Value to Paid-In (TVPI) multiple is a performance metric used in private equity

to measure the sum of the distributed and residual value of investments relative to the total capital contributed by investors. It indicates the overall value generated by the fund, both realized and unrealized.

$$\text{TVPI} = \frac{\text{Total Value}}{\text{Paid-In Capital}}$$

Total value = total distributions + residual value

Terms Defined:

- Total distributions: Sum of all cash flows distributed to investors.
- Residual value: Current value of the remaining investments in the portfolio.
- Paid-in capital: Total amount of capital contributed by investors.

Calculations:

- Total distributions: \$350 million
- Residual value: \$150 million
- Total value = Total distributions + Residual value = \$350 million + \$150 million = \$500 million
- Paid-in capital: \$200 million

$$\text{TVPI} = \frac{500}{200} = 2.5$$

So, the TVPI multiple at the end of year 10 is 2.5.

Private Markets Pathway, Volume 1, Learning Module 1: Private Investments and Structures LOS 1(c): Discuss the difference between public and private market performance, and calculate, interpret, and discuss the use of performance metrics including distributed to paid-in, residual value to paid-in, and total value to paid-in.

Q. 4 Calculate the amount of carried interest Apex Capital would earn at the end of year 10.

Carried interest is a share of the profits of an investment paid to the investment manager in excess of the amount that the manager contributes to the partnership. It serves as a performance fee that aligns the interests of the general partner (GP) with those of the investors.

$\text{Carried interest} = \text{carried interest rate} \times (\text{total return} - \text{hurdle amount})$

$\text{Hurdle amount} = \text{hurdle rate} \times \text{paid-in capital} \times \text{number of years}$

Terms Defined:

- Carried interest rate: Percentage of profits paid to the GP.
- Total return: Total profit generated by the fund.
- Hurdle Rate: Minimum rate of return required by investors before the GP can receive carried interest.
- Paid-in capital: Total amount of capital contributed by investors.
- Number of years: Duration over which the hurdle rate is applied.

Calculations:

- Initial capital: \$200 million
- Hurdle rate: 8% per year
- Number of years: 10
- Hurdle amount: $8\% \times \$200 \text{ million} \times 10 \text{ years} = \$160 \text{ million}$
- Total return: \$240 million
- Profit exceeding the hurdle rate: $\$240 \text{ million} - \$160 \text{ million} = \$80 \text{ million}$
- Carried interest rate: 20%

Carried Interest = $20\% \times \$80 \text{ million} = \$16 \text{ million}$

So, Apex Capital would earn \$16 million in carried interest at the end of year 10.

Private Markets Pathway, Volume 1, Learning Module 2: General Partner and Investor Perspectives and the Investment Process. LOS 2(b): Discuss how private investment firms align their interests with those of their investors, and calculate, interpret, and discuss private market fund performance from an investor perspective, including management fees and carried interest.

Case 5: Jane Johnson

Jane Johnson, a portfolio manager at a large institutional investment firm, is evaluating the firm's strategy for diversifying its portfolio by increasing its allocation to private markets. The firm currently holds a diversified portfolio of public equities and fixed-income securities but has minimal exposure to private investments. Jane is tasked with presenting a comprehensive analysis to the investment committee, covering various aspects of private investments and their integration into the firm's strategic asset allocation.

The investment committee is particularly interested in understanding the key differences between private and public investments, the various methods and structures available for private market investments, performance metrics specific to private investments, and the risk-return profile of private versus public markets.

To assist Jane, the firm's research team has gathered some initial data and information:

1. The firm is considering a potential private equity investment with the following data: Initial capital invested of \$500,000, distributed proceeds of \$300,000, and remaining value of the investment portfolio at \$400,000.
2. The firm's goal is to achieve higher returns through active management and value creation.
3. The firm aims to diversify its portfolio and reduce overall portfolio volatility by incorporating private market investments.

Q. 1 **Discuss**, with two reasons, why Jane's firm might prefer private investments over public investments. Note: Each reason should be in a separate paragraph.

Potential for higher returns: Private investments, such as private equity, often involve investing in companies at an earlier stage of their life cycle or in distressed assets that require significant restructuring. These investments can generate substantial returns if the companies grow successfully or if the restructuring leads to improved performance. The firm's ability to take a more active role in managing these investments allows for potential value creation that is not typically available with public investments, which are

more passively managed and usually involve mature companies with less growth potential.

Portfolio diversification benefits: Private investments often have low correlations with public market securities. This is due to the unique characteristics of private investments, such as their illiquidity and the fact that they are not subject to the same market fluctuations as public securities. By adding private investments to the portfolio, Jane's firm can potentially reduce overall portfolio volatility and achieve better risk-adjusted returns. This diversification can help protect the firm's portfolio during periods of public market downturns.

More control over the investment process and outcomes: Unlike public investments, where shareholders generally have limited influence over company operations, private investors often acquire significant or controlling stakes in companies. This allows them to implement strategic changes, operational improvements, and other value-creating activities. For Jane's firm, having more control can lead to better alignment with their investment goals and strategies, potentially resulting in superior performance.

Opportunities for investing in unique assets: For example, private infrastructure or real estate projects can offer attractive returns and long-term cash flows that are not accessible through public market securities. These unique investment opportunities can enhance the firm's ability to achieve specific investment objectives and meet the needs of their clients.

Less regulatory scrutiny compared to public investments: Public companies are required to comply with extensive regulatory requirements and provide detailed financial disclosures, which can be costly and time-consuming. Private companies, on the other hand, face fewer regulatory burdens, allowing them to focus more on long-term growth and strategic initiatives. This regulatory flexibility can be advantageous for Jane's firm, enabling them to invest in businesses that prioritize strategic growth over short-term regulatory compliance.

Longer investment horizons: Public market investments are subject to market volatility and short-term performance pressures, whereas private investments typically require a

longer time frame to realize their full potential. This long-term focus can be beneficial for Jane's firm as it allows for a more patient capital approach, giving the firm the opportunity to achieve significant value creation over time.

Private Markets Pathway, Volume 1, Learning Module 1: Private Investments and Structures. LOS 1(a): Contrast the features of private and public investments and discuss characteristics of private and public markets.

Q. 2 Based on the case information, **identify** and **explain** two private investment methods that Jane could consider for diversifying the firm's portfolio. **Justify** why each method would be suitable for the firm's strategic goals. Note: Each explanation and justification should be in a separate paragraph.

Direct investment

This method involves purchasing a significant equity stake or private debt in a company without using intermediaries. This approach allows the firm to have a high level of control over the investment, enabling them to directly influence company operations and strategic decisions. For example, by taking a controlling stake in a promising private company, Jane's firm can implement specific operational improvements or strategic initiatives to drive value creation. This method aligns well with the firm's strategic goal of achieving higher returns through active management and value creation.

- **Justification:** Direct investment is suitable for Jane's firm because it leverages the firm's expertise and resources to actively manage and improve the performance of the investment. By directly investing in companies, the firm can target specific industries or sectors where it has knowledge and experience, thereby increasing the likelihood of achieving superior returns. Additionally, direct investment can provide the firm with greater flexibility in structuring the investment and exit strategies, tailored to their risk-return preferences and investment horizon.

Co-investment

Co-investment involves investing alongside a lead private equity fund or other institutional investors in a particular deal or portfolio of assets. This method allows Jane's firm to participate in larger and potentially more lucrative deals than they might be able to on their own, without bearing the full risk and cost of managing the investment. By co-investing, the firm benefits from the expertise and due diligence of the lead investors, while also gaining exposure to attractive private market opportunities.

- **Justification:** Co-investment is suitable for Jane's firm because it offers a way to diversify the portfolio without requiring the same level of internal resources and expertise as direct investments. It allows the firm to participate in high-quality investments identified by experienced lead investors, thus reducing the overall risk through shared investment. Moreover, co-investments often come with lower fees compared to traditional fund investments, enhancing the net return for Jane's firm. This method aligns with the firm's strategic goal of diversifying their portfolio and accessing private market opportunities while managing costs and risks effectively.

Private market funds

In this approach, Jane's firm commits capital to a private equity or private debt fund managed by a general partner (GP). The GP is responsible for sourcing investment opportunities, conducting due diligence, and managing the portfolio. This method provides Jane's firm with access to a diversified portfolio of private investments and the expertise of experienced fund managers.

- **Justification:** Investing through private market funds is suitable for Jane's firm because it allows them to diversify their exposure across multiple investments and sectors without needing extensive internal resources. The general partner's expertise in sourcing and managing investments can help mitigate risks and enhance returns. Additionally, this method provides a structured and managed approach to private market investing, which can be beneficial for institutional investors seeking to expand their private market exposure. Fund investments can also offer economies of scale and access to deals that might not be available

to individual investors.

Private Markets Pathway, Volume 1, Learning Module 1: Private Investments and Structures. LOS 1(b): Discuss private investment methods and structures and their uses.

Q. 3 **Calculate** the Total Value to Paid-In (TVPI) for the potential private equity investment with the data provided. Interpret this metric for the investment committee's decision.

To calculate the TVPI, we use the formula:

$$\text{TVPI} = \frac{\text{Distributed proceeds} + \text{Remining Value}}{\text{Paidin capital}}$$

Where:

Distributed proceeds: The amount of cash that has been returned to the investors from the investment. In this case, it is \$300,000.

Remaining value: The current estimated value of the investment that is still held. In this case, it is \$400,000.

Paid-in capital: The total amount of capital that was originally invested. In this case, it is \$500,000.

Thus,

$$\text{TVPI} = \frac{300,000 + 400,000}{500,000} = 1.4$$

Implication

The TVPI of 1.4 indicates that for every dollar invested, the total value (including both distributed proceeds and the remaining value) is \$1.40. This suggests that the investment has generated a 40% return on the initial capital invested when combining both the realized returns (distributed proceeds) and the unrealized returns (remaining value of the

investment).

A TVPI greater than 1.0 indicates that the investment has appreciated in value and has provided positive returns.

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Q. 4 **Explain** two reasons why Jane's firm might be cautious about increasing its allocation to private investments. Note: Each reason should be in a separate paragraph.

Illiquidity: Private investments are typically not traded on public exchanges, which means they cannot be easily bought or sold. This illiquidity can pose significant challenges, especially if the firm needs to quickly raise cash for other opportunities or obligations. The firm must be prepared to hold these investments for extended periods, potentially several years, which can limit their ability to respond to changing market conditions or take advantage of new investment opportunities. The lack of liquidity also makes it difficult to quickly adjust the portfolio in response to market changes .

Higher risk/uncertainty: Unlike public investments, which have transparent and frequent pricing due to market trading, private investments lack regular pricing updates. Valuations are often based on models and assumptions that can be highly subjective. This uncertainty can make it difficult to accurately assess the performance and value of the investment over time, leading to potential mispricing and unexpected losses. The firm needs to have robust due diligence and valuation processes in place to mitigate these risks.

Higher level of management involvement and expertise: Managing private investments can be resource-intensive, requiring specialized knowledge and significant time commitment from the firm's investment professionals. This can lead to higher operational costs and may divert resources from other important areas of the firm's operations. The firm needs to ensure that it has the necessary expertise and infrastructure to effectively manage and monitor these investments.

Private Markets Pathway, Volume 1, Learning Module 1: Private Investments and Structures. LOS 1(a): Contrast the features of private and public investments, and discuss characteristics of private and public markets.