

Checkpoint Exam 3 (Private Markets)

TOPIC: PRIVATE MARKETS - PRIVATE INVESTMENTS AND STRUCTURES

TOTAL POINT VALUE OF THIS QUESTION SET IS 12 POINTS

Kelsey Jones, CFA, specializes in performance metrics for both public and private investments. She has been asked by her manager to interview a potential new analyst in her department. The first task she gives him is a table showing the cash inflows and outflows (in millions of dollars) associated with four assets. The assets are part of an overall portfolio, and she provides the new analyst with the individual asset IRRs.

Asset	CF0	CF1	CF2	CF3	CF4	CF5	CF6	CF7	Asset IRR
ABC	-11	4	4	4	9				27.2%
DEF		-13	3	4	5	10			20.0%
RST			-10	3	2	6	12		31.9%
XYZ				-15	4	4	4	19	26.7%

Question 1 of 28

Based on the information provided, the analyst should derive an IRR for the portfolio overall that is *closest* to:

- A) 26.0%. ✓
- B) 26.5%.
- C) 27.0%.

Explanation

Because the timing of the cash flows across the four assets differ, the sum of the cash inflows and outflows each year must be calculated. The overall portfolio IRR (26.0%, rounded from 25.95%) is derived using the cash flows from the bottom row of the table.

26.5% is the average of the four individual asset IRRs and 27.0% is the median of the middle two asset IRRs (ABC and XYZ).

Asset	CF0	CF1	CF2	CF3	CF4	CF5	CF6	CF7	Asset IRR
ABC	-11	4	4	4	9				27.2%
DEF		-13	3	4	5	10			20.0%
RST			-10	3	2	6	12		31.9%
XYZ				-15	4	4	4	19	26.7%
Net cash flow	-11	-9	-3	-4	20	20	16	19	26.0%

(Module M1.3, LOS M1.c)

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Question 2 of 28

The next set of data that Jones provides is shown in the following table. The values (in millions of dollars) are associated with the Jennings Brothers' Private Equity Fund, which originated several years ago and has been highly successful to date.

Years	0	1	2	3	4	5
Net asset value (NAV)		40	60	85	100	90
Capital called	-12	-23	-26	-10		
Distributed capital		0	0	0	35	40

She poses the following three questions to the interviewee:

As of the end of Year 2, the paid-in capital (PIC) will be *closest* to:

- A) 0.72.
- B) 0.86. ✓
- C) 1.02.

Explanation

The PIC is calculated per the equation shown:

$$PIC = \frac{\text{Capital invested}}{\text{Total capital committed}}$$

Total capital committed = 12 + 23 + 26 + 10 = 71 million. Total capital invested as of the end of Year 2 is equal to 12 + 23 + 26 = 61 million. PIC = 61 million / 71 million = 0.859, or 0.86.

0.72 is equal to capital calls of 61 million divided by 85 million NAV as of the end of Year 3. 1.02 is equal to capital calls of 61 million divided by 60 million in NAV as of the end of Year 2.

(Module M1.3, LOS M1.c)

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Question 3 of 28

Based on the table in the previous question, as of the end of Year 4, the residual value to paid-in (RVPI) will be *closest* to:

- A) 1.41. ✓
- B) 1.54.
- C) 2.86.

Explanation

The RVPI is calculated per the equation shown:

$$\text{RVPI} = \frac{\text{Net asset value}}{\text{Total capital invested}}$$

Total capital committed = 12 + 23 + 26 + 10 = 71 million. Total net asset value at the end of Year 4 is equal to 100 million. RVPI = 100 million / 71 million = 1.41.

1.54 is equal to the NAV of 100 million divided by the difference between the NAV and the distributed capital. 2.86 is the NAV of 100 million divided by the distributed capital of 35 million.

(Module M1.3, LOS M1.c)

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Question 4 of 28

Without using any numbers from the table, which of the following numbers when subtracted from the total value to paid-in (TVPI) will produce the RVPI in Year 5?

- A) Paid-in capital (PIC).
- B) Cumulative distributions.
- C) **Distributed to paid-in (DPI). ✓**

Explanation

The total value to paid-in (TVPI) can be calculated as shown:

$$\text{TVPI} = \frac{\text{Cumulative distributions} + \text{Net asset value}}{\text{Total capital invested}}$$

$$\text{TVPI} = \text{DPI} + \text{RVPI}$$

The formula can be rearranged to show: $\text{TVPI} - \text{DPI} = \text{RVPI}$.

(Module M1.3, LOS M1.c)

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TOPIC: PRIVATE MARKETS - GENERAL PARTNER AND INVESTOR PERSPECTIVES AND THE INVESTMENT PROCESS

TOTAL POINT VALUE OF THIS QUESTION SET IS 12 POINTS

Cedar Partners is a U.S.-based private equity fund seeking an equity commitment from a college endowment. The fund will draw down a total of USD 150 million from the college endowment over an initial three-year period, with USD 100 million drawn down in the first year, followed by USD 25 million in the second and third years.

In the fourth year, Cedar begins to exit investments, with investments with a cost base of 25% of committed capital being exited in both the fourth and fifth years of the fund. A further 20% of the cost basis is exited in the sixth year and the remaining 30% of the committed capital is written off in the seventh year, as these investments were not a success due to operational issues.

The management fee is 2%.

The college endowment trustees are concerned that the management fee in this form may incentivize the general partners to act in their own interests to maximize the fees. One of the trustees makes the following statement:

"The treatment of the committed capital in the calculation of the management fee gives the GP an incentive to rush the due diligence process in order to start earning higher fees."

Another trustee states:

"With this method of management fee calculation, I am concerned about GPs inflating investment values as the underlying investments are not publicly traded, and we therefore cannot check the valuations."

Question 5 of 28

By the end of the third year, what is the total management fee that has been charged to the college endowment fund?

- A) USD 3 million.
- B) USD 7 million.
- C) **USD 9 million. ✓**

Explanation

Answer C is correct. The management fee is calculated on the committed capital, which includes the drawn and undrawn portions. Therefore, each year there is a management fee of 2% of USD 150 million = USD 3 million, giving USD 9 million in total over the three year period.

Answer A only considered one year. Answer B only calculated the fee on the drawn down element each year.

(Module M2.2, LOS M2.b)

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Question 6 of 28

Which of the following is *closest* to the management fee charged for Year 5?

- A) **USD 1.5 million. ✓**
- B) USD 2.3 million.
- C) USD 3.0 million.

Explanation

Answer A is correct. Once the capital has been fully deployed, the management fee is charged as 2% of the committed capital less the cumulative cost basis of investments exited and written off during the fund's life.

Management fee = 2% of (USD 150 million – 25% × USD 150 million – 25% × USD 150 million) = USD 1.5 million

(Module M2.2, LOS M2.b)

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Question 7 of 28

If the investment that was written off in Year 7 had instead been exited at a profit, how would this have changed the management fee?

- A) Reduced the Year 7 management fee.
- B) Increased the Year 7 management fee.
- C) **No impact on the Year 7 management fee. ✓**

Explanation

Answer C is correct. The management fee is calculated as 2% of the committed capital minus the *cost basis* of exited or written off investments. Therefore, for this element of the fee there is no consideration of how the investments actually performed.

(Module M2.2, LOS M2.b)

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Question 8 of 28

How many of the concerns of the trustees are valid?

- A) One of the concerns is valid.
- B) Both of the concerns are valid.
- C) **Neither of the concerns are valid. ✓**

Explanation

Answer C is correct. The first trustee is incorrect because the use of *committed capital* in calculating management fees ensures that the GP is not incentivized to rush the investment due diligence process in order to earn fees, as would be the case if fees were based on drawn-down capital.

The second trustee is also incorrect because the committed capital minus the cost basis is used and therefore the actual investment value does not affect the management fee calculation.

For reference, the full fee schedule is shown (all figures in USD million):

Year	1	2	3	4	5	6	7
Invested capital	100	25	25				
Cost basis of exits/write offs				37.5	37.5	30	45
Committed capital minus exists/write offs	150	150	150	112.5	75	45	0
Management fee 2%	3	3	3	2.25	1.5	0.9	0

(Module M2.2, LOS M2.b)

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