

Question #1 of 126

Question ID: 463620

Which of the following *least accurately* describes a major category of due diligence factors that should be investigated in determining the value of a property?

- ☐ A) Structural integrity.
- ☒ B) Pipeline analysis.
- ☐ C) Operating expenses.

Explanation

The major due diligence factors that are likely to affect the value of a property include: operating expenses; structural integrity; environmental issues; leases and lease history; lien, ownership, and property tax history; and compliance with relevant regulations and laws.

(Study Session 13, LOS 38.I)

Question #2 of 126

Question ID: 463622

A real estate investment is expected to have cash flows after taxes in each of the next three years equal to CAD70,000, CAD50,000, and CAD65,000, respectively. The initial equity investment in this property is CAD600,000 and the equity at the end of year three is estimated to be CAD500,000. The internal rate of return (IRR) for this investment is *closest* to:

- ☐ A) -7.8%.
- ☒ B) 5.0%.
- ☐ C) 8.0%.

Explanation

Using your TI BAII Plus:

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[CF] [2nd] [CLR WORK]
600,000 [+/-] [ENTER] [↓]
70,000 [ENTER] [↓] [↓]
50,000 [ENTER] [↓] [↓]
565,000 [ENTER] [↓][↓] (note: CF3 = 65,000 + 500,000)
[IRR] [CPT] = 5.0056 percent
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Question ID: 463692

The private equity firm Purcell & Hyams (P&H) is considering a \$17 million investment in Eizak Biotech. Eizak's owners firmly believe that with P&H's investment they could develop their "wonder" drug and sell the firm in six years for \$120 million. Given the project's risk, P&H believes a discount rate of 30% is reasonable.

The pre-money valuation (PRE) and P&H's fractional ownership, respectively, are *closest* to (in millions):

<u>PRE</u>	<u>Fractional ownership</u>
✓ A) \$7.86	0.68
x B) \$24.86	0.68
x C) \$7.86	0.14

Explanation

Step 1: The exit value must first be discounted at the appropriate discount rate to its present value to arrive at the post-money (POST) valuation (all dollar figures in millions):

$$\text{POST} = (\$120) / (1.30)^6 = \$24.86 \text{ million.}$$

Step 2: The pre-money valuation is Eizak's current value without P&H's investment:

$$\text{PRE} = \$24.86 \text{ million} - \$17 \text{ million} = \$7.86 \text{ million.}$$

Step 3: P&H's fractional ownership is the value of its investment as a fraction of Eizak's POST valuation:

$$f = \text{INV} / \text{POST} = \$17 / \$24.86 = 0.68.$$

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Question ID: 463661

The party in a private equity fund that has unlimited liability for the firm's debts, and this party's share in fund profits, respectively, is referred to as:

<u>Unlimited liability</u>	<u>Share in fund profits</u>
x A) Limited partner	Distribution waterfall
x B) Manager	Management fees
✓ C) General partner	Carried interest

Explanation

Limited partners' liability does not extend beyond their capital investment, whereas general partners (the fund managers) have unlimited liability for the firm's debt. The general partner's share in fund profits is referred to as *carried interest*. Management fees are paid annually as a percentage of capital (NAV, paid-in-capital, or committed capital) and are not tied to fund profits.

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Question ID: 463654

A private equity firm is guaranteed to receive 80% of the residual value of a leveraged buyout investment, with the remaining 20% owing to management. The initial investment is \$500 million, and the deal is financed with 70% debt and 30% equity. The projected multiple is 2.0. The equity component consists of:

- \$120 million preference shares.
- \$25 million private equity firm equity.
- \$5 million management equity.

At exit in 5 years the value of debt is \$150 million and the value of preference shares is \$300 million. The payoff multiple for the private equity firm and for management, respectively, is *closest* to:

	<u>Private equity</u>	<u>Management</u>
x A) 3.03		11.0
x B) 6.34		46.0
✓ C) 5.10		22.0

Explanation

The calculations at exit are as follows (all in million \$):

- The exit value will be $\$500 \times 2.0$ (the specified multiple) = \$1,000.
- Outstanding debt is \$150.
- Preference shares are worth \$300.
- Private equity firm's value: 80% of the residual exit value:
 $(0.80)(\$1,000 - \$150 - \$300) = \440 .
- Management's value: 20% of the residual exit value:
 $(0.20)(\$1,000 - \$150 - \$300) = \110 .

Total initial investment by the private equity firm is \$145, and by management \$5.

Total payoff to the private equity (PE) firm at exit is $\$440 + \$300 = \$740$.

Payoff multiple for the PE firm is $\$740 / \$145 = 5.10$.

Total payoff to management at exit is \$110.

Payoff multiple to management is $\$110 / \$5 = 22.0$.

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Question ID: 463699

Dan Garant makes the following statement regarding the classification of commodities:

- | | |
|-------------|---|
| Statement 1 | The price of nonrenewable commodities is heavily influenced by current investor demand. |
| Statement 2 | The spot price of renewable commodities is independent of future production costs. |

Which of Garant's statements is CORRECT?

- ✓ **A) Statement 1 only.**
- ✗ **B) Both statements are correct.**
- ✗ **C) Statement 2 only.**

Explanation

The spot price of renewable resources depends on expected future production costs while the spot price of non-renewable commodities is influenced by current demand.

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Question ID: 463625

Which of the following *least accurately* identifies a type of publicly traded real estate security?

- ✓ **A) Direct mortgage lending**
- ✗ **B) Operating companies**
- ✗ **C) Investment trusts**

Explanation

The main types of publicly traded real estate securities are REITs (Real Estate Investment Trusts), REOCs (Real Estate Operating Companies), and RMBS and CMBS (Residential and Commercial Mortgage-Backed Securities). An investment in mortgages is most likely to be a private rather than public investment.

(Study Session 13, LOS 39.a)

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Question ID: 463637

The net asset value approach to valuation makes sense for REITs because:

- ✗ **A) the price at which a REIT trades very closely tracks NAV.**
- ✓ **B) there exist active private markets for real estate assets.**
- ✗ **C) NAV equals the value that public equity investors attach to a REIT.**

Explanation

Because active private markets for real estate assets exist, REITs lend themselves to a net asset value approach to valuation. NAV reflects the estimated value of REIT assets to a private market buyer, however this may be different from the value that public equity investors would attach to the REIT. REITs have historically traded at a large premium or discount to NAV.

(Study Session 13, LOS 39.e)

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Question ID: 463688

A private equity investor makes a \$5 million investment in a venture capital firm today. The investor expects to sell the firm in four years. He believes there are three equally possible scenarios at termination:

1. expected earnings will be \$20 million, and the expected P/E will be 10.
2. expected earnings will be \$7 million, and the expected P/E will be 6.

3. expected earnings will be zero if the firm fails.

The investor believes an IRR of 25% is appropriate. The expected terminal value and the investor's pre-money valuation, respectively, are *closest* to (in \$ million):

<u>Expected terminal value</u>	<u>Pre-money valuation</u>
<input checked="" type="radio"/> A) \$80.67	\$33.04
<input checked="" type="radio"/> B) \$80.67	\$28.04
<input checked="" type="radio"/> C) \$9.00	\$3.69

Explanation

The terminal value under each scenario is the expected earnings multiplied by the P/E ratio. The expected terminal value is the weighted average of the three scenarios (all in \$ million):

Scenario 1: Terminal value = $\$20 \times 10 = \200

Scenario 2: Terminal value = $\$7 \times 6 = \42

Scenario 3: terminal value = \$0

Expected terminal value = $(\$200 + \$42 + \$0) / 3 = \80.67

The expected terminal value is then discounted at the IRR rate to arrive at the post-money (POST) valuation:

$POST = FV / (1 + r)^N = \$80.67 / (1 + 0.25)^4 = \$33.04$

The pre-money (PRE) valuation is the post-money valuation less the investor's initial investment:

$PRE = POST - INV = \$33.04 - \$5.0 = \$28.04$

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Question ID: 463590

Demand for which real estate type is most affected by foreign trade:

- ☒ A) Retail
- ☒ B) Office
- ☒ C) Industrial

Explanation

Demand for industrial properties are most affected by level of industrial activity in the economy (evidenced by import-export activity). Demand for retail real estate is most influenced by consumer spending and demand for office properties is most influenced by job growth.

(Study Session 13, LOS 38.d)

Question #11 of 126

Question ID: 463652

A private equity investor is considering making an investment in a venture capital firm. The investor values the firm at \$1.5

million following a \$300,000 capital investment by the investor. The venture capital firm's pre-money (PRE) valuation and the investor's proportional ownership, respectively, are:

<u>PRE valuation</u>	<u>Ownership proportion</u>
----------------------	-----------------------------

- ☐ A) \$1.5 million 25%
- ☐ B) \$1.5 million 20%
- ☒ C) \$1.2 million 20%

Explanation

The pre-money valuation (PRE) is simply the venture capital firm's post-money valuation (POST) less the capital investment (INV):

$$\text{PRE} = \text{POST} - \text{INV} = \$1.5 \text{ million} - \$300,000 = \$1.2 \text{ million.}$$

The ownership proportion is the investor's fractional ownership of the firm value after the capital infusion:

$$\text{Ownership proportion} = \text{INV}/\text{POST} = \$300,000 / \$1.5 \text{ million} = 0.20 \text{ or } 20\%.$$

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Question ID: 463698

Ben Tarson, CFA is currently undertaking an analysis of the commodity markets to present to a potential client. Part of his presentation concerns the impact short hedgers have on the price of commodity futures contracts. Which of the following market participants is *most* likely to take a short hedge position?

- ☐ A) A hedge fund buying copper in the spot market and selling copper futures contracts.
- ☒ B) Wheat farmer looking to sell wheat forward.
- ☐ C) Airline looking to purchase fuel forward.

Explanation

The wheat farmer is looking to lock in the sales price of his product. This is a short hedge as the farmer will sell contracts. The airline is looking to undertake a long hedge and the hedge fund is looking to make an arbitrage trade.

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Question ID: 463593

An investor in a hotel property is evaluating the acquisition of an old hotel building. He is interested in this property as the land prices in the locality have held up pretty well during the last downturn. He contacts the builder for a new hotel in the area and obtains the estimate per square foot if the property is newly constructed.

In valuing the subject property, he is most likely using the:

- ☐ A) Sales comparison approach
- ☒ B) Cost approach
- ☐ C) Income approach

Explanation

Cost approach starts with estimate of land and cost of new construction and then deducts the deterioration in value occurring in an older property. Sales comparison approach simply compares the value (after appropriate adjustments) estimated using recent transactions of comparable properties. Income approach estimates value of a property based on estimated income generated by the property.

(Study Session 13, LOS 38.e)

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Question ID: 463697

A private equity investor is considering an investment in a venture capital firm, and is looking to calculate the firm's terminal value. The investor determines that there is equal likelihood of the following:

1. Expected firm earnings are \$2.5 million with a P/E ratio of 8.
2. Expected firm earnings are \$3.0 million with a P/E ratio of 10.

The firm's expected terminal value, and the analysis used by the investor, respectively, is:

Terminal value Analysis

- ☐ A) \$50 million Scenario
- ☒ B) \$25 million Scenario
- ☐ C) \$2.75 million Sensitivity

Explanation

The investor is using *scenario* analysis to determine the venture capital firm's terminal value. The terminal value under each scenario is calculated by multiplying the expected earnings by the P/E ratio:

Scenario 1: \$2.5 million × 8 = \$20 million

Scenario 2: \$3.0 million × 10 = \$30 million

The expected terminal value is then the weighted value under each scenario:

Expected terminal value = (0.50)(\$20 million + \$30 million) = \$25 million.

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Question ID: 463586

Which of the following *most accurately* identifies one of the characteristics of a private equity investment in income-producing real estate?

- ☐ A) Passive management.

- ✓ **B)** Sensitivity to the credit market.
- x **C)** Homogeneity.

Explanation

Real estate values are sensitive to the cost and availability of debt capital since of the large amounts of borrowing are required to purchase real estate properties. Real estate is heterogeneous, as no two properties are the same. Direct ownership of real estate properties is management intensive. Other unique characteristics possessed by real estate properties include: fixed location, high unit value, depreciation, high transaction cost, illiquidity, and difficult to value.

(Study Session 13, LOS 38.b)

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Question ID: 463643

Patricia Ly, CFA is a portfolio manager who wishes to add diversification to her portfolio through the addition of a real estate investment. Ly finds the following data for a particular industrial REIT:

Net operating income (NOI): \$710,000

Funds from operations (FFO): \$630,000

Assumed cap rate: 6%

Shares outstanding: 90,000 shares

Storage property average P/FFO multiple: 13x.

Industrial property average P/FFO multiple: 10x.

Ly decides to perform a valuation on this REIT. The value per share of this REIT using a price-to-FFO approach is closest to:

- ✓ **A) \$70**
- x **B) \$112**
- x **C) \$91**

Explanation

$\text{FFO/share} = \text{FFO} / \text{Shares outstanding} = \$630,000 / 90,000 \text{ shares} = \$7/\text{share}.$

The relevant subsector average P/FFO multiple is the value for industrial properties of 10x.

$\text{FFO/share} \times \text{P/FFO multiple} = \$7.00 \times 10x = \$70.00$

(Study Session 13, LOS 39.h)

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Question ID: 463680

Dr. Jason Bruno is a qualified investor in the US who is considering a \$10 million investment in a private equity fund. Upon reading the fund's prospectus, Dr. Bruno encounters several contract terms and expressions with which he is unfamiliar. In particular, he would like to know the meaning of *ratchet* and distributed paid-in capital (*DPI*). The *most appropriate* answer by the fund's manager to Dr. Bruno would be that ratchet and DPI, respectively, is:

Ratchet

DPI

- | | |
|---|--|
| <p><input checked="" type="checkbox"/> A) The general partner's share of fund profits</p> <p><input checked="" type="checkbox"/> B) The year the fund was set up</p> <p><input checked="" type="checkbox"/> C) The allocation of equity between shareholders and management</p> | <p>The general partner's realized return</p> <p>Dividends paid out as a fraction of paid-in capital</p> <p>The limited partner's realized return from the fund</p> |
|---|--|

Explanation

Ratchet is a contract term that specifies the allocation of equity between management and shareholders.

DPI, or distributed to paid-in capital, is the cumulative distributions paid out from the fund as a fraction of cumulative invested capital. DPI measures the limited partners' realized return from the fund.

Note: The GP's share of fund profits is called *carried interest*. The year the fund was set up is called the *vintage*. There should be no distinction between realized and unrealized return for the GP. Also, there is no term for dividends over paid-in capital as dividends are seldom paid out from a private equity fund.

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Question ID: 463632

The *most likely* consequence of the high income distribution that REITs are required to make is:

- ☒ A) frequent secondary equity offerings compared to other kinds of companies.
- ☒ B) high volatility of reported income.
- ☒ C) dividend yields that are nearly on-par with the yields of other publicly traded equities.

Explanation

Because REITs are not able to retain earnings as other companies do, REITs make frequent secondary equity offerings, in order to finance growth and property acquisitions. REITs' required distributions result in a dividend yield that is significantly higher than those of most other publicly-traded equities. REITs' focus on income from rental properties leads to low volatility of reported income.

(Study Session 13, LOS 39.c)

Question #19 of 126

Question ID: 463689

The Milat Private Equity Fund (Milat) makes a \$35 million investment in a promising venture capital firm. Milat expects the venture capital firm could be sold in four years for \$150 million and determines that the appropriate IRR rate is 40%. The founders of the venture capital firm currently hold 1 million shares. Milat's fractional ownership in the firm and the appropriate share price, respectively, is *closest* to:

Fractional
ownership

Share price

- ☐ A) 23.33% \$115.00
- ☒ B) 89.64% \$4.05
- ☐ C) 89.64% \$3.63

Explanation

The calculation requires four steps:

Step 1: Calculate the expected future value of Milat's \$35 million investment in four years using an IRR rate of 40%:

$$W = (\$35 \text{ million}) \times (1.40)^4 = \$134.46 \text{ million}$$

Step 2: Milat's fractional ownership of the venture capital firm is the future expected wealth divided by the exit value:

$$f = \$134.46 \text{ million} / \$150 \text{ million} = 0.8964, \text{ or } 89.64\%$$

Step 3: Calculate the number of shares required by Milat (S_{pe}) for its fractional ownership of 89.64%:

$$S_{pe} = 1,000,000 [0.8964 / (1 - 0.8964)] = 8,652,510$$

Step 4: The share price is the value of Milat's initial investment divided by the number of shares Milat requires:

$$P = INV_1 / S_{pe} = \$35 \text{ million} / 8,652,510 = \$4.05$$

(Note that both the NPV and IRR approach will yield the same answers.)

Question #20 of 126

Question ID: 463628

Which of the following *most accurately* identifies one of the advantages of investing in real estate through publicly traded securities?

- ☐ A) Publicly traded corporate structures cost less to maintain.
- ☒ B) Diversification by geography and property type is facilitated.
- ☐ C) Structural conflicts of interest are eliminated.

Explanation

One of the advantages of publicly traded real estate securities is that they offer investors greater potential for diversification by geography, property, and property type. Disadvantages of publicly traded real estate securities include the costs of maintaining a publicly traded corporate structure, and the potential for structural conflicts of interest that can occur between the partnership and REIT shareholders under an UPREIT or DOWNREIT structure.

(Study Session 13, LOS 39.b)

Question #21 of 126

Question ID: 463601

Which one of the following is *least likely* an error in using DCF method of real estate valuation?

- ☐ A) Terminal cap rate applied to atypical NOI.
- ☐ B) Terminal cap rate and going-in cap rate are not consistent

✓ **C)** Income growth is equal to expense growth.

Explanation

DCF valuation often assumes that income growth is same as expense growth (and hence same as the NOI growth assumed). When they differ, an error is made in using DCF method assuming constant growth in NOI. Terminal cap rate should be applied to typical NOI (NOI normally expected) and not to atypical NOI (NOI estimate artificially too high or too low temporarily). If the terminal cap rate and going-in cap rate are inconsistent (based on different set of assumptions), the valuation using DCF will be flawed.

(LOS 38.h, LOS type)

Question #22 of 126

Question ID: 463647

Pauler Investment Co. ("Pauler") just proposed to make a sizeable investment in Bada Cork, a recently established Hungarian producer of synthetic wine bottle corks with a patented new technology. Pauler is looking to make further strategic acquisitions in small venture capital companies in the food and beverage industry and has set up a fund to manage the portfolio companies. It has also brought onboard Kristina Sandorf as portfolio manager. Upon receiving her contract, Sandorf complains to a friend of the contract terms proposed by Pauler. In particular, she grumbles that an *earn-out* clause is inserted, which she believes would give Pauler priority on the earnings and dividends of companies in the portfolio ahead of herself.

In her description of *earn-outs*, Sandorf is:

- ☒ **A) incorrect, because earn-outs refer to Pauler having priority over Bada's assets in case of bankruptcy or liquidation.**
- ✓ **B) incorrect, because earn-outs refer to tying the acquisition price paid by Pauler for the portfolio companies to the companies' future performance.**
- ☒ **C) correct.**

Explanation

Earn-outs are typically used in venture capital investments where the acquisition price paid for portfolio companies by private equity firms is tied to the companies' future performance.

Question #23 of 126

Question ID: 463535

Assume that a property has a gross annual income equal to \$150,000, and that comparable properties have a gross income multiplier equal to 11.25. The gross income multiplier approach provides a market value for this property that is *closest* to:

- ☒ **A) \$1,625,000.**
- ☒ **B) \$1,333,333.**
- ✓ **C) \$1,687,500.**

Explanation

Gross income multiplier technique: $MV = \text{gross income} \times \text{income multiplier}$.

$MV = \$150,000 \times 11.25 = \$1,687,500$

Question #24 of 126

Question ID: 463690

The primary difference between the venture capital method using the IRR and NPV approach is that:

- ☐ A) the NPV approach does not require fractional ownership calculations.
- ☐ B) the IRR method does not use exit values.
- ☒ C) the IRR approach starts by calculating the investor's expected future wealth.

Explanation

The IRR approach in venture capital firm valuations can be thought of as a reverse NPV calculation, where the IRR rate is used to first calculate the investor's expected future wealth.

Both the IRR and NPV approach use exit values and fractional ownership calculations.

Question #25 of 126

Question ID: 463597

Which of the following valuation approaches is only applicable in its application to income-generating properties?

- ☐ A) Only the direct income capitalization approach.
- ☒ B) Both the gross income multiplier approach and the direct income capitalization approach.
- ☐ C) Only the gross income multiplier approach.

Explanation

Both valuation approaches are limited to use with income producing properties. Neither approach can provide an accurate value estimate for owner-occupied properties because the benefit derived by the owner is difficult to measure in monetary terms.

Question #26 of 126

Question ID: 463644

The Austrian private equity firm RD primarily makes leveraged buyout investments as the firm's management strongly believes that debt makes companies more efficient. The *least likely* explanation of management's rationale is to:

- ☒ A) reduce the interest tax shield.
- ☐ B) increase firm efficiency.
- ☐ C) transfer risk.

Explanation

A PE firm's debt is frequently securitized and repackaged as collateralized debt or loan obligations, resulting in a transfer of risk to the debt buyer. Greater use of debt also requires disciplined and timely payment of interest, causing a PE firm's portfolio companies to use free cash flow efficiently. Higher leverage generally increases the tax savings from the use of debt (the interest tax shield) increasing firm value in the meantime.

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Question ID: 463623

A real estate investment is expected to have cash flows after taxes in each of the next three years equal to CAD70,000, CAD50,000, and CAD65,000, respectively. The initial equity investment in this property is CAD600,000 and the equity at the end of year-three is estimated to be CAD300,000. Assuming a required return on equity of 8 percent, the net present value (NPV) for this investment is *closest* to:

- ✓ **A) -CAD202,569.**
- ✗ B) CAD220,360.
- ✗ C) -CAD238,150.

Explanation

$$PVCF_1 = \frac{70,000}{1.08} = 64,814.81$$

$$PVCF_2 = \frac{50,000}{(1.08)^2} = 42,866.94$$

$$PVCF_3 = \frac{65,000}{(1.08)^3} = 51,599.09$$

$$PV_{ER} = \frac{300,000}{(1.08)^3} = 238,149.67$$

$$NPV = -600,000 + 64,814.81 + 42,866.94 + 51,599.09 + 238,149.67 \\ = -CAD202,569.48$$

Or, using your TI BAII Plus:

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[CF] [2nd] [CLR WORK]
600,000 [+/-] [ENTER] [↓]
70,000 [ENTER] [↓] [↓]
50,000 [ENTER] [↓] [↓]
365,000 [ENTER] [↓] [↓] (note: CF3 = 65,000 + 300,000)
[NPV] {8} [ENTER] [↓]
[CPT] = -CAD202,569.48
```

Question #28 of 126

Question ID: 463591

Which of the following *most accurately* identifies non-core (i.e., high-risk) income-producing real estate property types?

- ✗ **A) Office and industrial.**
- ✗ B) Retail and multi-family residential.
- ✓ **C) Hotel and hospitality.**

Explanation

Hospitality properties such as hotels represent relatively risky investments because these properties do not use long-term leases and their performance may be highly correlated with the business cycle. The core commercial income-producing real estate property types are retail, multi-family, office, industrial and warehouse. These "core" property types are the main properties used to create a low-risk real estate portfolio.

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Question ID: 463621

Leverage results in higher returns when:

- ✓ **A) Investment return exceeds cost of debt.**
- ✗ **B) Asset prices are increasing.**
- ✗ **C) Debt is cheap.**

Explanation

Leverage results in higher returns to equity investors when the return on investment exceeds the cost of debt. Even if debt is cheap, low investment returns would not lead to higher returns due to use of leverage. Similarly, even if return on investment is high, as long as it does not exceed the cost of debt, leverage will not generate higher returns.

Question #30 of 126

Question ID: 463600

Assume that a property has an estimated net operating income (NOI) equal to \$150,000. Further assume that comparable properties have a capitalization rate of 11%. The direct income capitalization approach provides a market value for this property that is *closest* to:

- ✓ **A) \$1,363,636.**
- ✗ **B) \$1,500,000.**
- ✗ **C) \$13,636,363.**

Explanation

$$MV = \frac{NOI}{C} = \frac{150,000}{0.11} = \$1,363,636$$

Question #31 of 126

Question ID: 463588

Which of the following *most accurately* identifies a private equity investment in income-producing real estate?

- ✗ **A) Private market mortgage lending by an insurance company.**
- ✓ **B) Direct ownership of real estate properties.**
- ✗ **C) Investment in a real estate investment trust (REIT).**

Explanation

Real estate investments take four major forms: private equity, publicly traded equity, private debt, and publicly traded debt. Private equity investment in real estate refers to direct ownership of real estate properties. Mortgage lending by banks or insurance companies is best described as private debt. Indirect ownership of real estate through equity securities such as REITs is an example of publicly traded equity.

(Study Session 13, LOS 38.b)

Question #32 of 126

Question ID: 463641

Which of the following is an expense normally deducted from accounting net earnings but not from FFO?

- ☐ A) Property taxes
- ☐ B) Property operating expenses
- ☒ C) Depreciation expense

Explanation

Depreciation on real estate is excluded from FFO because most investors believe that real estate maintains its value to a greater extent than does other types of long-term business assets. Therefore, taking depreciation deductions, which reduce the value of the real estate, does not represent economic reality. FFO is accounting net earnings excluding depreciation charges on real estate, deferred tax charges, and gains or losses from sales of property and debt restructuring. Property operating expenses and property taxes are both normal rental expenses deducted to arrive at operating income.

(Study Session 13, LOS 39.f)

Question #33 of 126

Question ID: 463696

The founders of a small technology firm are seeking a \$3 million venture capital investment from prospective investors. The founders project that their firm could be sold for \$25 million in 4 years. The private equity investors deem a discount rate of 25% to be appropriate, but believe there is a 20% chance of failure in any year.

The adjusted pre-money valuation (PRE) of the technology firm is *closest* to (in millions):

- ☐ A) \$7.24.
- ☒ B) \$1.19.
- ☐ C) \$4.19.

Explanation

The general formula for determining the pre-money value (PRE) is to first discount the exit (sale) value at the appropriate discount rate to its present value. This value is called the post-money value (POST). The pre-money value is the post-money value less the investment (INV):

$$\text{POST} = \text{FV} / (1+r)^N$$

$$\text{PRE} = \text{POST} - \text{INV}$$

This would yield a PRE value of \$7.24 million when using the unadjusted discount rate of 25%. This rate, however, must be adjusted for the possibility of failure in any particular year. This is calculated as follows:

$r^* = (1 + r) / (1 - q) - 1$, where r is the unadjusted discount rate and q is the probability of failure.

The discount rate adjusted for failure is then:

$$r^* = (1 + 0.25) / (1 - 0.20) - 1 = 0.5625 \text{ or } 56.25\%$$

The pre value is then calculated as:

$$\text{POST}^* = \$25 / (1.5625)^4 = \$4.19 \text{ million.}$$

PRE* = \$4.19 – \$3.0 = \$1.19 million.

Question #34 of 126

Question ID: 463656

Which of the following statements *most accurately* describes the components of returns on a leveraged buyout (LBO) investment:

- ☒ A) The return on preference shares, the increase in the price multiple on exit, and the reduction in debt claims.
- ☐ B) The return on common shares, the increase in the price multiple on exit, and the equity held by management.
- ☐ C) The interest earned on debt financing, the return on common shares and the return on preference shares.

Explanation

The components of a private equity firm's returns are the return on preference shares, the increased price multiple and the reduction in debt claims. The private equity firm should see an increase in the price multiples as the operational efficiencies of the LBO firm improve. The second component is the value of the interest-bearing preference shares. The third component is the reduction in debt over the time period to exit.

Question #35 of 126

Question ID: 463645

Contrary to most public companies, the magnitude that debt is typically utilized in private equity (PE) firms and the way this debt is quoted, respectively, is:

Debt is utilized: Debt is quoted:

- ☐ A) less heavily as a multiple of sales
- ☐ B) more heavily as a multiple of equity
- ☒ C) more heavily as a multiple of EBITDA

Explanation

PE firms typically use higher leverage than most public companies do, especially in leveraged buyout investments. Debt is usually quoted as a multiple of EBITDA, while public firm debt is usually quoted as a multiple of equity (debt-to-equity ratio).

Question #36 of 126

Question ID: 463701

Kerry Barnton is currently putting together a training manual covering valuation techniques for various classes of assets. Extracts from the draft manual are shown below:

Asset	Class	Notes
Blue Chip Equities	Capital Assets	NPV type valuation models appropriate

Copper	Consumable/Transferable	CAPM based models not suitable
Wheat	Consumable/Transferable	Interest rates significant driver of value

Which of the assets is *least accurately* described?

- ✓ **A) Wheat as interest rate is not a significant driver of value.**
- ✗ **B) Copper as it is a commodity and hence a store of value asset rather than a consumable/transferable asset.**
- ✗ **C) Blue Chip Equities as they are incorrectly described as a capital asset.**

Explanation

Commodities are consumable/transferable assets. Pricing is driven by supply and demand rather than the generation of cash flows, hence interest rates are not a significant factor in pricing.

Question #37 of 126

Question ID: 463626

Which of the following is *most likely* to represent a publicly traded real estate debt investment?

- ✓ **A) A mortgage real estate investment trust (Mortgage REIT).**
- ✗ **B) Secured bank debt collateralized by real estate.**
- ✗ **C) A real estate operating company (REOC).**

Explanation

Mortgage REITs are publicly traded securities that make loans secured by real estate, therefore they are publicly traded debt investments. REOCs are classified as equity (not debt) securities, while bank debt is classified as a private rather than public investment.

(Study Session 13, LOS 39.a)

Question #38 of 126

Question ID: 463674

Private equity values have declined significantly over the last year. Which of the following risk factors is the *least likely* reason for the decline?

- ✓ **A) Tax risk.**
- ✗ **B) Investment-specific risk.**
- ✗ **C) Market risk.**

Explanation

Market risk is the risk of long-term changes in interest rates, exchange rates and economic risk. Certainly all of these have been factors in the less than spectacular private equity returns recently. Investment-specific risk is probably the most important source of risk in recent times, as many private equity investments suffered significant losses as a result of the subprime mortgage and real estate meltdown. Tax risk is the risk of tax changes over time, which has not been a significant factor in private equity valuations recently.

Question #39 of 126

Question ID: 463681

The net asset value (NAV) *after* distributions of a private equity fund is calculated as:

- ☐ A) NAV before distributions + Carried interest - Distributions.
- ☒ B) NAV before distributions - Carried interest - Distributions.
- ☐ C) NAV before distributions + Capital called down - Management fees.

Explanation

NAV after distributions is calculated as NAV before distributions minus carried interest (the general partner's profit from the fund) minus distributions from the fund.

Question #40 of 126

Question ID: 463650

The *most appropriate* pairing for valuing a buyout and a venture capital investment, respectively, is:

Buyout

Venture capital

- ☒ A) Discounted cash flow Pre-money valuation
- ☐ B) Relative value approach Discounted cash flow
- ☐ C) Pre-money valuation Relative value approach

Explanation

Buyout investments have predictable cash flows and there are typically several comparable firms in the industry. Both the discounted cash flow and relative value approach are thus reasonable valuation techniques for buyout firms.

Venture capital firms, on the other hand, have less stable cash flows and few industry comparables given their young age and position in the business life cycle. Pre- and post-money valuation techniques are frequently used valuations for these firms.

Question #41 of 126

Question ID: 463676

An implicit cost in private equity of additional financing or issuing stock options to management is called:

- ☐ A) capital cost.
- ☐ B) management and performance cost.
- ☒ C) dilution cost.

Explanation

Management and performance cost is the explicit cost of manager compensation as a percentage of committed capital and annual fund performance. Capital costs are not discussed as a cost in private equity.

Dilution is the implicit cost of reduced investor value when firms take on additional financing or when stock options are granted (and exercised) by management.

Question #42 of 126

Question ID: 463675

The *most relevant* market risk to a private equity investor is:

- ✓ **A) long-term macro changes only.**
- ✗ **B) short-term macro changes only.**
- ✗ **C) both short-term and long-term macro changes.**

Explanation

Private equity investments are affected to a large degree by long-term macro- factors such as interest rate and exchange rate fluctuations and various market risks. Short-term macro-factors and short-term fluctuations are less relevant as the investor's time horizon typically exceeds 10 years.

Question #43 of 126

Question ID: 463619

Compared to transaction-based indices used to track the performance of private real estate, appraisal-based indices are *most likely* to exhibit an apparent:

- ✗ **A) higher correlation with other asset classes.**
- ✗ **B) higher volatility.**
- ✓ **C) time lag.**

Explanation

Appraisal-based indices tend to lag transaction-based indices, as appraised values adjust only slowly to sudden shifts in the market.

Appraisal-based indices are "smoothed" by this lag, which causes appraisal-based indices to appear to have *lower* volatility and *lower* correlation with other assets than a transaction-based index would.

Question #44 of 126

Question ID: 463677

An investor in a private equity fund realizes that the residual value to paid-in capital (RVPI) is fairly large relative to the distributed to paid-in capital (DPI). The *most* appropriate conclusion drawn by the investor would be that:

- ✗ **A) there were significant cash flows from the fund to the investor.**
- ✓ **B) it will take longer for the investor to realize a return from the fund.**
- ✗ **C) the fund successfully earned profits from its investments.**

Explanation

Paid-in capital measures the amount of capital drawn down out of total committed capital. Residual value to paid-in capital is

the value of the investor's holding in the fund as a ratio of cumulative invested capital.

A high RVPI to DPI ratio indicates that the fund has not distributed a large portion of profits and may indicate difficulty realizing profits from its investments. In this case it would take longer for the investor to receive distributions from the fund (low cash flows to date).

Question #45 of 126

Question ID: 463648

In a private conversation with his best friend, Harry Veasley, CFA, makes the following statements:

Statement 1: Private equity (PE) firms generally focus on short-term results. For example, they frequently use restructuring of acquired companies in an effort to quickly divest them for a profit.

Statement 2: PE firms also want to ensure that the interests of portfolio company managers and of limited partners are aligned. For example, they frequently tie manager compensation to firm performance and include *tag-along*, *drag-along* clauses to give management a stake in the firm under certain trigger events.

With regard to Veasley's statements:

- ☒ A) both are correct.
- ☒ B) only one is correct.
- ☒ C) both are incorrect.

Explanation

Statement 1 is incorrect. PE firms tend to have a long-term, rather than short-term focus in their investment strategies, which often exceeds 10 years. Restructuring is generally a lengthy process and requires a long-term perspective.

Statement 2 is correct with regard to both manager compensation and the use of *tag-along*, *drag-along clauses*.

Question #46 of 126

Question ID: 463639

If a REIT has assets with a current market value of \$3,000,000, liabilities with a current market value of \$2,000,000, and 100,000 shares outstanding, what is the NAVPS per share?

- ☒ A) \$30.00
- ☒ B) \$10.00
- ☒ C) \$50.00

Explanation

NAVPS per share can be calculated by beginning with assets, subtracting liabilities, and then dividing the result by the number by shares outstanding. Thus, $\$3,000,000 - \$2,000,000 = \$1,000,000$ and $\$1,000,000 / 100,000 = \10.00 per share.

Question #47 of 126

Question ID: 463659

The primary advantage of an initial public offering (IPO) as an exit route in private equity is that it:

- ✓ **A) offers the highest exit value potential.**
- ✗ **B) is appropriate for firms regardless of firm size and operating history.**
- ✗ **C) is more cost-efficient and flexible than alternative exit routes.**

Explanation

A private equity firm can generally realize the highest exit value for a portfolio company through an IPO, as the post-IPO firm offers greater liquidity (it is continuously traded on an open exchange) and access to capital. IPOs, however, are costly to implement and involve a complex process that ranges from dealing with underwriters, gauging market interest and complying with various regulatory requirements. IPOs are also most appropriate for large firms with a stable operating history.

Question #48 of 126

Question ID: 463678

The relevant measure of cash flows for the limited partners (LPs), and the LPs' realized return from investment in the private equity fund, respectively, is:

	<u>Return metric</u>	<u>LPs' realized return</u>
✗ A) Paid-in capital	Net IRR	
✗ B)	Gross IRR	Residual value to paid-in capital
✓ C)	Net IRR	Distributed to paid-in capital

Explanation

Net IRR measures the cash flows between the fund and the limited partners and is therefore the relevant return metric for the LPs. Distributed to paid-in capital (DPI) measures the LPs' realized return from investment in the fund. It is calculated as the cumulative distributions already paid to the LPs over the cumulative invested capital.

Gross IRR measures the cash flows between the fund and the portfolio companies. Residual value to paid-in capital (RVPI) measures the LPs' unrealized return from the fund. Paid-in capital measures the percent of capital used by the general partner.

Question #49 of 126

Question ID: 463679

An analyst is considering the performance of two private equity funds, Delta and Kappa.

Performance of private equity fund Delta and Kappa		
	Delta	Kappa
DPI	2.0	0.0

RVPI	0.0	2.0
TVPI	2.0	2.0

The *most appropriate* conclusion an analyst can draw from the table is that:

- ☐ A) Kappa has distributed \$2.0 for every dollar invested.
- ☐ B) Delta has yet to turn a profit.
- ☒ C) Kappa may be a younger fund than Delta.

Explanation

Delta's distributed to paid-in capital (DPI) ratio of 2.0 indicates that investors in the fund realized a profit of \$2.0 for every dollar invested and that this profit has already been paid out. Kappa's multiples indicate that the fund has yet to pay out profits to its investors. The residual value to paid-in capital (RVPI) of 2.0 implies that all returns are still unrealized and will be paid out in future years. One likely explanation for Kappa's multiples is that the fund is younger than Delta.

Question #50 of 126

Question ID: 463618

A real estate market is characterized by frequent transactions. However, individual properties have long holding periods. Which real estate pricing index would be *least* suitable in such an environment?

- ☐ A) Appraisal based index.
- ☒ B) Repeat sales index.
- ☐ C) Hedonic price index.

Explanation

Repeat sales index relies on repeat sales of individual properties. Since individual properties have long holding periods, repeat sales index would be least suitable. Hedonic price index relies on transaction data and the regression model explains the variation in transaction prices based on differences between individual properties sold. Appraisal based indices use transaction prices also to estimate value after adjustments for differences. Since there are plenty of transactions, appraisal and hedonic price index have sufficient data to provide good value estimates.

(Study Session 13, LOS 38. K)

Question #51 of 126

Question ID: 463587

Which of the following is *least likely* a difference between real estate investments and traditional asset classes like stocks and bonds?

- ☐ A) Real estate tends to be difficult to value
- ☒ B) Real estate tends to be homogenous
- ☐ C) Real estate tends to be indivisible

Explanation

Investment in real estate is complicated by difficulty in valuing real estate, indivisibility of real estate investment (high unit

value) and heterogeneity of different real estate properties even within the same class/geographical location.
(Study Session 13, LOS 38.b)

Question #52 of 126

Question ID: 463706

Don Chancery is currently producing a forecast of commodity price movements for the economic research department at his investment firm. He is basing his prediction on the theory that pricing is driven solely by producers who hold commodities in stock or expect to have in stock and therefore hedge their position with a short futures contract. Chancery believes this leads to normal backwardation. Which of the following theories is Chancery *most likely* using?

- ☒ A) The theory of storage.
- ☐ B) The insurance perspective.
- ☒ C) The hedging pressure hypothesis.

Explanation

The hedging pressure hypothesis extends the insurance perspective to include consumers who hedge will long positions, not solely producers with short positions. The theory of storage is links convenience yields to inventory levels.

Question #53 of 126

Question ID: 463682

A private equity fund pays a management fee of 3% of PIC and carried interest of 20% to the general partner using the total return method based on committed capital. In 2008 the fund has drawn down 80% of its committed capital of \$250 million, and has a net asset value (NAV) before distributions of \$260 million. The 2008 management fee and carried interest paid, respectively, is (in millions):

<u>Management</u>	<u>Carried</u>
<u>fee:</u>	<u>interest:</u>
<input checked="" type="checkbox"/> A) 6.0	2.0
<input checked="" type="checkbox"/> B) 7.5	50.0
<input checked="" type="checkbox"/> C) 7.8	2.0

Explanation

(All dollar figures are in millions)

Management fee is paid annually on paid-in capital (PIC), which is just cumulative capital drawn down. 2008 management fee is thus 3% of \$200, or \$6.0.

Carried interest is the profit distributed to the general partner. The fund specifies a total return method based on *committed* capital and is calculated as the excess of NAV before distributions above committed capital. The 2008 carried interest paid out is then 20% of $(\$260 - \$250) = \$2.0$.

Question #54 of 126

Question ID: 463664

Which of the following is the *least likely* disadvantage in calculating the net asset value (NAV) for a private equity fund?

- ✓ **A) The limited partners use a third party to calculate the NAV of a private equity fund.**
- ✗ **B) Only capital commitments already drawn down are included in the NAV calculation.**
- ✗ **C) NAV may be difficult to calculate since firm values are not known with certainty prior to exit.**

Explanation

NAV is usually calculated by the fund's general partner, which could result in a subjective and inflated NAV. Limited partners, however, often use third party valuations to arrive at an objective and up-to-date NAV. This scenario thus describes a countermeasure to an issue in calculating NAV rather than a disadvantage itself.

The other two answers are both disadvantages in calculating NAV.

Question #55 of 126

Question ID: 463702

Robin Santander is preparing for a meeting with a high net worth client who is looking to gain some exposure to commodities. The client is looking to use commodity futures indexes to gain exposure via an Exchange Traded Fund (ETF) or Commodity Index Certificate. Which of the following statements would be *least appropriate* for Santander to make?

- ✗ **A) Both ETFs and Certificates expose the investor to currency risk.**
- ✓ **B) Both ETFs and Certificates have the advantage of exposure to both long term and short term futures contracts.**
- ✗ **C) ETFs have the advantage of lower credit risk as compared to certificates.**

Explanation

Certificates are issued by banks and hence the investor is exposed to credit risk. As commodity indexes are denominated in U.S. dollars, Non-U.S. investors are exposed to currency risk in any instrument that invests in an index. However, indexes focus exclusively on short term contracts.

Question #56 of 126

Question ID: 463704

Which of the following statements regarding commodity returns is *least* accurate?

- ✗ **A) A commodity futures market in backwardation will increase the return on an investor's position via a positive roll yield.**
- ✗ **B) Due to roll yield and collateral yield, a commodity futures position may have a positive yield despite a drop in the spot price.**
- ✓ **C) The collateral yield on a commodity futures position is negative if the convenience yield is lower than the storage cost.**

Explanation

The collateral yield is the return on the cash used to collateralize the futures position and is independent of the futures price.

Question #57 of 126

Question ID: 463691

A private equity firm makes a \$10 million investment in a portfolio company. The founders of a portfolio company currently hold 300,000 shares and the pre-money valuation is \$6 million. The number of shares to be held by the private equity firm, and the appropriate share price, respectively, are *closest* to:

Number of shares Share price

- ☐ A) 480,000 \$20.83
- ☒ B) 500,000 \$20.00
- ☐ C) 500,000 \$32.00

Explanation

The answer requires four steps:

Step 1: Calculate the post-money (POST) valuation, which is simply the pre-money (PRE) valuation plus the investment:

$$\text{POST} = \text{PRE} + \text{INV} = \$6 \text{ million} + \$10 \text{ million} = \$16 \text{ million}$$

Step 2: Calculate the private equity firm's fractional ownership in the portfolio company:

$$f = \text{INV} / \text{POST} = \$10 \text{ million} / \$16 \text{ million} = 0.625$$

Step 3: If the founders currently hold 300,000 shares, the number of shares to be held by the private equity firm to have 62.5% ownership is:

$$\text{Number of shares} = 300,000 [0.625 / (1-0.625)] = 500,000$$

Step 4: Given the private equity firm's \$10 million investment and 500,000 shares, the share price is calculated as:

$$P = \$10 \text{ million} / 500,000 = \$20.00$$

Question #58 of 126

Question ID: 463638

When calculating NAVPS, a real estate company's assets and liabilities are valued at their:

- ☒ A) market value.
- ☐ B) book value.
- ☐ C) liquidation value.

Explanation

All assets and liabilities of a company are taken at current market value when calculating NAVPS. NAVPS is a superior measure of a company's net worth when compared to its book value per share. (Study Session 13, LOS 39.e)

Question #59 of 126

Question ID: 463589

If the costs of debt financing are greater than the return on a real estate investment, then it is *most likely* that the:

- ☐ A) discount rate is less than the cap rate.
- ☐ B) value of the property is lower.
- ☒ C) use of leverage decreases equity returns.

Explanation

If debt costs are higher than investment returns, then the use of leverage will lower the investment returns as the cost of capital has increased. Debt financing is usually chosen to lower the cost of capital - magnifying the returns to equity investors. The value of property is not determined by the financing choice. The discount rate cannot be less than the cap rate (assuming normal growth projections).

(Study Session 13, LOS 38.c)

Question #60 of 126

Question ID: 463651

A private equity firm is considering the valuation characteristics of both a venture capital and a buyout investment. Increasing working capital requirements and stable EBITDA growth is *most likely* associated with:

<u>Increasing working capital</u>	<u>Stable EBITDA growth</u>
-----------------------------------	-----------------------------

- | | |
|---|-----------------|
| <input type="radio"/> A) Buyout | Buyout |
| <input type="radio"/> B) Buyout | Venture capital |
| <input checked="" type="radio"/> C) Venture capital | Buyout |

Explanation

Venture capital investments often have high and increasing working capital (current assets less current liabilities) requirements to finance growth. Buyouts typically have low requirements due to more reliable cash flows and earnings and a substantial asset base.

Stable EBITDA (or EBIT) growth is generally a characteristic of buyout investments. These firms traditionally have a history of stable sales and cash flows and have already established a strong market position. The high amount of debt required by the private equity firm to make the investment also requires that the buyout firm have stable and steady earnings to finance the interest payments.

Question #61 of 126

Question ID: 463629

Private equity firms can maintain control over portfolio companies in a variety of ways. Which of the following contract terms would *least likely* achieve this goal?

- ☐ A) Priority in claims.
- ☐ B) Board representation.
- ☒ C) Tag-along, drag-along clauses.

Explanation

A tag-along, drag-along clause is less a control mechanism for private equity firms and more a tool to tie portfolio manager interests to the portfolio companies. The clause gives portfolio managers the right to obtain an equity stake in the portfolio companies should the private equity firm decide to dispose of its holding.

Priority in claims and board representation are both effective tools that give PE firms greater control over portfolio companies. Priority in claims allows the PE firm to receive distributions before all other owners. Should the portfolio company experience a major event (bankruptcy, restructuring, IPO, etc.), the private equity firm can gain control of the company through board representation.

Question #62 of 126

Question ID: 463684

Which of the following pairs *correctly* identifies the fees paid to agents for raising funds for the private equity firm, and the fees paid to the general partner (GP) for investment banking services, respectively?

<u>Fees to agents</u>	<u>Fees to GP</u>
-----------------------	-------------------

- | | |
|---|----------------------|
| <input type="checkbox"/> A) Transaction fees | Administrative costs |
| <input type="checkbox"/> B) Administrative costs | Placement fees |
| <input checked="" type="checkbox"/> C) Placement fees | Transaction fees |

Explanation

Placement fees are upfront fees paid to agents for raising funds for the private equity firm. These fees typically are in the 2% range or paid as trailers.

Transaction fees are paid to the GP for investment banking services in the event of a merger or acquisition. Transaction fees are usually split with the limited partners and deducted from management fees.

Administrative costs are various annual costs including custodian fees, fees to transfer agents and accounting costs.

Question #63 of 126

Question ID: 463663

The pair of terms that *correctly* identifies the method of profit distribution between limited partners (LPs) and general partners (GPs), and the allocation of equity between shareholders and management of a portfolio company, respectively, is:

Method of profit

distribution

Equity allocation

- | | | |
|-------------------------------------|-------------------------|-------------------------------|
| <input type="radio"/> A) | Carried interest | Distribution waterfall |
| <input type="radio"/> B) | Ratchet | Carried interest |
| <input checked="" type="radio"/> C) | Distribution waterfall | Ratchet |

Explanation

Distribution waterfall identifies the profit allocation between LPs and GPs and specifies when GPs can receive carried interest. *Ratchet* refers to the equity allocation between shareholders and management. *Carried interest* is the GP's share in fund profits.

Question #64 of 126

Question ID: 463657

Christina Wagner is a CFA level II candidate currently studying about hedge funds, private equity and commodity futures. One of her friends is fascinated by what Wagner is learning and asks several questions on the topic. In particular, she is curious to know what exit options are available to a promising young venture capital (VC) firm if it is having difficulty attracting buyers due to poor market conditions. What should be Wagner's *most appropriate* response?

- ☐ A) **Since an initial public offering is not feasible, the VC firm should be sold to another firm through a buyout or secondary market sale.**
- ☒ B) The VC firm should consider the acquisition of another firm and sell the merged entity once capital market conditions have improved.
- ☐ C) The VC firm should be liquidated in the absence of prospective buyers through the sale of the firm's assets.

Explanation

Liquidation occurs when a firm becomes insolvent or bankrupt, cannot function as an independent entity, and there are very few or no interested buyers. Liquidation results in low exit values. Selling the VC firm through a buyout or secondary market sale is also less feasible since these transactions require significant debt financing which the young VC firm may be unable to support.

In poor market conditions it may be feasible for the VC firm to make a strategic acquisition through a merger and sell the merged entity once market conditions have stabilized.

Questions #65-70 of 126

Patel, Sung and Wynn (PSW) is a private real estate company that buys, develops, manages and sells commercial real estate properties for its clients. PSW is considering buying the Monroe office building in the downtown section of Potus City. Adams, Jefferson and Madison are other office buildings that are similar properties also located in downtown. The following information was gathered by PSW analysts.

Potus City Economic Outlook: The economy is expected to rebound after a recent recessionary period. Economic expansion is

expected to last at least the next five years. Projected economic factors for next five years:

Job Growth	Moderate to High
Population Growth	Moderate
Inflation	Low

The job growth is expected to lead to an influx of young professionals to downtown. This will increase demand for residential rental properties. Other commercial developments are under consideration by the city government. Construction time for new buildings is three years after city approval.

Few sales of office buildings have occurred recently. The last three sales of comparable buildings are listed below. Supply of office space is limited because no commercial buildings of any kind have been built in downtown over the last seven years mostly due to the economic slowdown.

Monroe Office Building		Monroe Office Building	Cost estimates
Square footage	500,000	Effective age of building	10 years
Monthly rent	\$4.00 per sq ft	Total economic life	50 years
Expected vacancy	5.0%	Estimated value of land	\$45,000,000
Operating expenses	42.5% of EGI	Replacement cost	\$250.00 per sq ft
Property management fee	7.5% of EGI	Developer's profit	\$15.00 per sq ft
Other income	\$3,000,000 per year	Curable deterioration	\$5,000,000
Location	Prime	Total obsolescence	\$4,000,000
Growth rate	2.5%	Terminal cap rate	8.0%
NOI starting Year 8	\$15,000,000		

(Note: EGI = Effective gross income)

Recent Transactions of Office Buildings in Potus City:

Office Buildings	Adams	Jefferson	Madison
Size in square feet	400,000	300,000	600,000
Age in years	7	10	13
Location	Prime	Secondary	Secondary
Age of transaction (in months)	12	36	24
Sales price	\$110,000,000	\$67,500,000	\$165,000,000
Projected NOI	\$9,900,000	\$5,737,500	\$13,200,000

Additional information:

- Depreciation is 2.5% per year.
- Location can be: Prime, Secondary or Tertiary. Prime locations are the most sought and 10.0% is the adjustment needed per classification.
- Market prices have been increasing at a rate of 0.25% per month.

The cost approach method resulted in an estimated value of \$143.0 million.

For the discount cash flow approach: The NOI for year 1 and the estimated cap rate are the same as the calculated values for direct capitalization value. PSW is looking to sell the property at the end of seven years. The discount cash flow approach resulted in an estimated value of \$158.9 million.

In addition to the purchase of Monroe Building, PSW is considering developing a mixed use building (a combination of retail space and residential apartments) which has been approved by the city.

In discussing the project, the Patel makes the following statement:

"I recommend we structure the rental of retail space as a percentage lease".

Question #65 of 126

Question ID: 463611

The value of the property using the direct capitalization method is *closest to*:

- ✓ A) \$151 million.
- x B) \$137 million.
- x C) \$134 million.

Explanation

The direct capitalization calculation. (Study Session 13, LOS 40.g)

Net operating income	
Rental income	$500,000 \times \$4.00 \times 12 = \$24,000,000$
Other income	\$3,000,000
Potential gross income (PGI)	$\$24,000,000 + \$3,000,000 = \$27,000,000$
Vacancy	$5.0\% \times \$27,000,000 = \$1,350,000$
Effective gross income (EGI)	$\$27,000,000 - \$1,350,000 = \$25,650,000$
Property management fee	$7.5\% \times \$25,650,000 = \$1,923,750$
Operating expenses	$42.5\% \times \$25,650,000 = \$10,901,250$
NOI = EGI – OpEx – PM fee	$\$25,650,000 - \$12,825,000 = \$12,825,000$

Cap rate calculation

Office Building	Adams	Jefferson	Madison
Cap rate	$\$9.9/\$110.0 = 9.0\%$	$\$5.7375/\$67.5 = 8.5\%$	$\$13.2/\$165.0 = 8.0\%$

The average cap rate for the three office buildings is 8.5%. Value of Monroe is NOI of \$12,825,000 divided by the cap rate of 8.5% or \$150.88 million.

Question #66 of 126

Question ID: 472549

The value of the property using the sales comparison method is *closest to*:

- ☐ A) \$151 million.
- ☒ B) \$145 million.
- ☐ C) \$157 million.

Explanation

The sales comparison method calculation. (Study Session 13, LOS 40.i)

Variable	Adams	Jefferson	Madison
Sale price	\$110,000,000	\$67,500,000	\$165,000,000
Size	400,000	300,000	600,000
Sale price per sq ft	\$275.00	\$225.00	\$275.00
Age adjustment	-7.5%	0.0%	+7.5%
Location adjustment	0.0%	+10.0%	+10.0%
Dale of sale adjustment	+3.0%	+9.0%	+6.0%
Total adjustments	-4.5%	+19.0%	+23.5%
Adjusted sales price psf	$\$275 \times (1 - 0.045)$ = \$262.63	$\$225 \times (1 + 0.190)$ = \$267.75	$\$275 \times (1 + 0.235)$ = \$339.63

Average sales price per square foot is \$290.00. The sales comparison method estimates the value of the property at 500,000 square feet \times \$290.00 = \$145.0 million.

Question #67 of 126

Question ID: 463613

Based on Potus City economic outlook the *most* reliable estimated value is from the:

- ☐ A) cost approach.
- ☐ B) sales comparison approach.
- ☒ C) income approach.

Explanation

The most reliable approach for estimated value for Monroe is the income approach. There are only a few transactions over the years so the sales comparison approach may not be a good approach. Sales comparison is most reliable when the real estate market is active. Cost approach may not be very reliable because cost estimates will be difficult to find when there has not been new construction in Potus City for the last seven years. The property does have income streams that can be used to value the property. (Study Session 13, LOS 40.e)

Question #68 of 126

Question ID: 463614

If the estimated value for the direct capitalization approach is less than the estimated value for the discount cash flow approach, this may be possible because:

- ☐ A) the growth rate is not factored in the direct capitalization approach.
- ☒ B) the terminal cap rate is less than the going in cap rate.

- ☐ C) the estimated value of the discount cash flow approach is greater the first seven years.

Explanation

The estimated value of direct capitalization would equal the estimated value of the discount cash flow approach if the cap rate, the growth rate and NOI are the same and the property is held in perpetuity. In this example for the direct cash flow approach, the property is sold after year 7. The only way the estimated value of the discount cash flow approach can be greater than the estimated value of the direct capitalization approach is because of the terminal value. The inputs of the terminal value, NOI of \$15 million and the lower cap rate of 8.0% results in a value greater from Year 8 onward. (Study Session 13, LOS 40.h)

Question #69 of 126

Question ID: 463615

Which additional economic information would increase the likelihood that Patel's recommendation generates higher rents?

- ☐ A) Higher imports.
- ☐ B) Low vacancy rate.
- ☒ C) High consumer confidence.

Explanation

To achieve potential higher rents for a percentage rent lease, an increase in sales is necessary. Retail sales are heavily dependent on consumer spending. A higher consumer confidence leads to higher consumer spending. (Study Session 13, LOS 40.d)

Question #70 of 126

Question ID: 463616

The estimated value from the cost approach was revised upward. The *most likely* reason for this is:

- ☒ A) the replacement cost was updated to a value greater than \$250.00 psf.
- ☐ B) the effective age of the building was adjusted upward to more than 10 years.
- ☐ C) the total obsolescence was underestimated.

Explanation

The estimated value of the cost approach increases as replacement costs increase. The higher effective age increases the reduction for incurable deterioration which lowers the estimated value. An increase in any of the obsolescence will reduce the estimated value. (Study Session 13, LOS 40.i)

Question #71 of 126

Question ID: 463662

RDO is a private equity fund with \$50 million in committed capital and an investment in three portfolio companies totalling \$30 million. The fund earned a healthy profit of \$5 million after its first year on the sale of one of the companies but suffered a \$2 million loss after its second year on the sale of the second company. The fund pays carried interest of 20% on a *total return basis* using committed capital and also has a clawback provision.

The clawback the general partner must pay at the end of the second year is:

- ☒ A) \$0.

- ☐ B) \$400,000.
- ☐ C) \$600,000.

Explanation

A clawback provision in a private equity prospectus requires the general partner to repay part of previously distributed profits if the fund subsequently underperforms.

Since carried interest is paid on a total return basis using committed capital, the general partner of RDO would only receive interest when the portfolio value exceeds committed capital (\$50 million). First-year profit is \$5 million, bringing the portfolio value to \$35 million, therefore no carried interest is paid. Since no profit was distributed to the general partner in the first year, a clawback does not apply in the second year.

Question #72 of 126

Question ID: 463703

Roger Torsten is studying historical data on the commodities markets to assist with his a forecast he is producing in his role as an economic researcher. He has observed long periods in the past when the term structure of the futures market for a commodity displays a negative trend. Which of the following explanations is *most likely* an explanation for this observed trend?

- ☐ A) **Manufacturers, concerned about increasing commodity prices are buying commodity futures to hedge input costs.**
- ☒ B) Producers concerned about a potential drop in price of the commodity are taking hedging positions to lock in a sales price.
- ☐ C) Due to an increase in the supply of the commodity, the convenience yield has dropped to nearly zero.

Explanation

Producers taking short hedges will force the futures price down and may well lead to backwardation. If manufacturers are taking out long hedges the term structure is likely to be in contango. High convenience yields would lead to backwardation.

Questions #73-78 of 126

Spanos Klios analyzes investment opportunities for Central Europe Securities. Klios is considering proposals by several of the firm's junior analysts.

Josef Klein, one of the junior analysts, proposes a real estate project in Stuttgart and has put together a comprehensive packet on the project. Klein is optimistic about the potential apartment buildings because it is located in an area densely populated with high-income residents. Klios finds the proposal intriguing, but is worried about the equity needed to make the deal work. Most Central European properties' loan-to-values (LTV) are usually below 80% and Klein's project would require borrowing 60% of the value.

Klios calls Klein in for a conference and asks him some questions about the real estate proposal, including the different ways to value the properties. During the meeting, Klios takes notes based on Klein's findings:

- The market value of the land using comparables is 1.25 billion. The total area is 2.5 million square feet.
- Replacement cost and developer's profit is 630.00 per square foot. Curable deterioration is 10.0 million; total economic life

is 75 years and effective age is 15 years. All estimated obsolescence costs are 50.0 million.

- The expected purchase price is 2.35 billion and the expected selling price in 10 years is 2.80 billion. The debt value owed on the mortgage value in 10 years is 909,893,015.
- The expected net operating income for next year is 264 million and the debt service is expected to be \$121,220,135. No growth is expected in NOI or debt service during the 10-year holding period.
- Klein found three comparable properties. Information related to each property are as follows:
 - Property A - net operating income, 192 million; market value, 1.60 billion.
 - Property B - net operating income, 550 million; market value, 5.50 billion.
 - Property C - net operating income, 715 million; market value, 6.50 billion.

After Klios finishes his meeting with Klein, he turns his attention to a proposal from Carlotta Graccos. She is proposing a venture-capital investment in two firms; retail group Belgarrique and the KinderWerks toy company. Klios reviews a fact sheet prepared by Graccos, considering a number of factors relating to both companies:

	<u>Belgarrique</u>	<u>KinderWerks</u>
Management	Experienced	Strong leader, minimal experience
Best sales strategy	Auction	Private deals
Working capital needs	Moderate	High
Company financing	Private	Public
Exit strategy	Terms specified in contract	Uncertain
Company's chief goals	Cash-flow targets, market expansion	Market-share targets
Risk	Measurable	Difficult to measure

Klios knows most venture capital proposals are risky, and he has several preferred methods to account for unusual risks. In this case, he wants to address the possibility that either or both of the companies under consideration might produce substantially lower profits than expected, as well as the chance that they might declare bankruptcy.

After reviewing the proposal from Graccos, Klios considers Svetlana Nordqvist's recommendation of several hedge funds. Klios reads the proposal, but is concerned about whether the junior analyst has adequately considered the risks of the securities. He is concerned that the stated standard deviation inadequately captures the risk of investing in these funds.

Question #73 of 126

Question ID: 463604

The estimated value of the apartment building project using the cost approach is *closest to*:

- ☒ A) 2.95 billion.
- ☒ B) 2.45 billion.
- ☒ C) 1.20 billion.

Explanation

Market value of land	1,250 million
Replacement cost, including constructor's profit	$630.00 \times 2.5 \text{ million} = 1,575 \text{ million}$

Reduction for curable deterioration	- 10 million	
Reduction for incurable deterioration	$(15/75) \times [1,575 \text{ million} - 10 \text{ million}] = - 313 \text{ million}$	
Reduction for obsolescence	- 50 million	
Building value		1,202 million
Total Cost Value		2,452 million

(Study Session 13, LOS 40.e)

Question #74 of 126

Question ID: 463605

The levered internal rate of return for the apartment project is *closest to*:

- ☒ A) 22.0%.
- ☒ B) 19.2%.
- ☒ C) 12.3%.

Explanation

Net operating income	264,000,000
Annual debt service	121,220,135
Cash flows (PMT) for 10 years	$264,000,000 - 121,220,135 = 142,779,865$
Cash initial outflow year 0 (PV)	$2,350,000,000 \times 0.40 = 940,000,000$
Terminal value (FV) in 10 years	$2,800,000,000 - 909,893,015 = 1,890,106,985$

$PMT = 142,779,865$; $PV = - 940,000,000$; $FV = 1,890,106,985$; $N = 10$; Solve for I/Y.

Internal rate of return is 19.23%. (Study Session 13, LOS 40.m)

Question #75 of 126

Question ID: 463606

The *best* estimate for the real-estate project's value using the direct capitalization method is:

- ☒ A) 2.00 billion.
- ☒ B) 2.60 billion.
- ☒ C) 2.40 billion.

Explanation

The estimated market value is the net operating income divided by the capitalization rate. We determine the rate using comparable properties, and we have three of them.

Property A the cap rate is $192 \text{ million} / 1,600 \text{ million} = 12.0\%$.

Property B the cap rate is $550 \text{ million} / 5,500 \text{ million} = 10.0\%$.

Property C the cap rate is $715 \text{ million} / 6,500 \text{ million} = 11.0\%$.

The average cap rate is $12.0\% + 10.0\% + 11.0\% / 3 = 11.0\%$.

Market value = $NOI / \text{capitalization rate} = 264 \text{ million} / 11.0\% = 2.40 \text{ billion}$.

Question #76 of 126

Question ID: 463607

What kind of transaction seems *most suitable* for:

Belgarrique

KinderWerks

- | | | |
|------|-----------------|-----------------|
| ✓ A) | Buyout | Venture capital |
| x B) | Venture capital | Venture capital |
| x C) | Venture capital | Buyout |

Explanation

Data on management, sales strategy, working capital, exit strategy, and risk suggest Belgarrique is a buyout candidate and KinderWerks is a venturecapital candidate. Data on the companies' chief goals is inconclusive. Data on company financing is a red herring, as companies active in capital markets tend to be better candidates for buyouts than venture capital. However, five of the seven pieces of information in the relevant table above reflect characteristics that suggest Belgarrique is a buyout candidate, while KinderWerks is a better target for venture capital. (Study Session 13, LOS 42.c)

Question #77 of 126

Question ID: 463608

To address his concerns about lower-than-expected profits and bankruptcy, Klios should:

- x A) switch to a target IRR.
- ✓ B) adjust the terminal value.
- x C) adjust the discount rate.

Explanation

The target IRR method uses one discount rate, and it cannot compensate for a possibility of lower profits or failure. Klios can adjust a discount rate to compensate for a possibility of failure, but not both adverse actions. However, he can adjust to terminal value to account for more than one potential outcome. (Study Session 13, LOS 42.k)

Question #78 of 126

Question ID: 463609

Which of the following is *least likely* a reason for Klios's concern about standard deviation as a measure of hedge fund risk?

- x A) Negative skewness of hedge fund return distribution.
- ✓ B) Survivorship bias.
- x C) Excess kurtosis of hedge fund return distribution.

Explanation

Survivorship bias affects hedge fund indices but not individual hedge fund's return distribution. Standard deviation as a measure of risk is inadequate in the presence of a non-normal distribution of hedge fund returns. Hedge fund return distributions are characterized by negative skewness and excess kurtosis and hence are not normal. (Study Session 13, LOS 43.c)

Question #79 of 126

Question ID: 463595

Which of the following statements is *most accurate* regarding real estate capitalization rates?

- ☐ A) As the difference between the required return on equity capital and the growth rate in NOI (g) increases, value estimates will also increase.
- ☐ B) If during periods of rising inflation, there is an increase in net operating income (NOI) and the growth rate of NOI, capitalization rates and value estimates will increase.
- ☒ C) Generally, as interest rates increase, capitalization rates increase and value estimates decline.

Explanation

$$MV = \frac{NOI}{r - g} = \frac{NOI}{C}$$

Where:

MV = estimated market value

NOI = the net operating income from a real estate investment.

r = the rate that equity investors require from a real estate investment.

g = the growth rate of NOI (assumed to be constant).

$C = r - g$ = the market capitalization rate.

From this relationship, we see that:

- as the growth rate of NOI increases, capitalization rates decline and value estimates will rise,
- the capitalization rate is the spread between r and g . Thus, as the spread widens, value estimates decline, and
- holding r constant, value is directly related to g .

The effect of inflation on value estimates depends on its combined effect on the required return (r) and the growth rate (g). If the net result is to decrease (increase) the capitalization rate, value estimates will rise (fall).

Question #80 of 126

Question ID: 463598

All of the following statements accurately describe the real estate capitalization rate EXCEPT:

- ☐ A) holding all else constant, market value estimates increase as the growth rate in net operating income increases.
- ☐ B) there is an inverse relationship between estimated market values and capitalization rates.
- ☒ C) holding all else constant, the risk of a real estate investment is directly related to its estimated value.

Explanation

$$MV = \frac{NOI}{r - g} = \frac{NOI}{C}$$

Where:

MV = estimated market value

NOI = the net operating income from a real estate investment.

r = the rate that equity investors require from a real estate investment.

g = the growth rate of NOI (assumed to be constant).

$C = r - g$ = the market capitalization rate.

As the riskiness of a real estate investment increases, the uncertainty of its future cash flows increases. This has the effect of increasing investors' required return (r) and increasing the capitalization rate. As cap rates rise, values decline.

Question #81 of 126

Question ID: 463683

The Nishan private equity fund was established five years ago and currently has a paid-in capital of \$300 million and total committed capital of \$500 million. The fund paid its first distribution three years ago of \$50 million, \$100 million the year after and \$200 million last year. The fund's distributed to paid-in capital (DPI) multiple is *closest* to:

- ✓ A) 1.17.
- ✗ B) 0.67.
- ✗ C) 0.70.

Explanation

The DPI multiple is calculated as the cumulative distributions paid by the private equity fund divided by the paid-in capital (the portion of committed capital drawn down).

Nishan's current DPI is: $(\$50 + \$100 + \$200) / \$300 = 1.17$

Question #82 of 126

Question ID: 463594

All of the following are limitations to the gross income multiplier approach for real estate valuation EXCEPT:

- ✗ A) sales prices for comparable properties may not be current.
- ✗ B) gross rental income may be inappropriate when building-to-land ratios are different among otherwise comparable properties.
- ✓ C) it may be difficult to obtain the necessary data to determine the appropriate capitalization rate.

Explanation

The gross income multiplier approach does not use a capitalization rate.

Question #83 of 126

Question ID: 463694

A private equity investor expects to realize a return on her venture capital investment in two years and expects to sell the firm

for \$30 million. She estimates that a discount rate of 30% is reasonable but expects that there is a 20% probability of failure in any given year. The post-money value of her investment today, adjusted for failure, is *closest* to:

- ✓ **A) \$11.36 million.**
- ✗ **B) \$14.20 million.**
- ✗ **C) \$11.20 million.**

Explanation

The investor must first adjust the discount rate for the probability of failure:

$r^* = (1 + r) / (1 - q) - 1$, where r is the unadjusted discount rate, and q is the probability of failure.

$$r^* = (1 + 0.30) / (1 - 0.20) - 1 = 0.625$$

To determine the post-money valuation, the projected future value must then be discounted at the adjusted discount rate:

$$\text{POST} = \text{FV} / (1 + r^*)^N = (\$30 \text{ million}) / (1.625)^2 = \$11.36 \text{ million}$$

Question #84 of 126

Question ID: 463640

A key difference between Funds From Operations (FFO) and Adjusted Funds From Operations (AFFO) is that AFFO excludes:

- ✗ **A) deferred tax charges while FFO does not.**
- ✗ **B) depreciation while FFO does not.**
- ✓ **C) non-cash rent while FFO does not.**

Explanation

AFFO is FFO adjusted to remove straight-line rent and to provide for leasing costs and maintenance-type capital expenditures. FFO is accounting net earnings excluding deferred tax charges, depreciation, and gains or losses on sales of property and debt restructuring.

(Study Session 13, LOS 39.f)

Question #85 of 126

Question ID: 463631

Retail sales growth is *most likely* to be a top economic factor affecting the economic value of a(n):

- ✗ **A) residential REIT.**
- ✓ **B) industrial REIT.**
- ✗ **C) health care REIT.**

Explanation

After growth in the GDP, the most important factor driving demand for industrial properties is retail sales growth. More important to the value of a residential REIT than retail sales growth is job creation and population growth. More important to the value of a health care REIT is population growth. (Study Session 13, LOS 39.c)

Question #86 of 126

Question ID: 463700

Which of the following statements regarding the pricing of commodity futures contracts is *most* accurate?

- ☐ A) The convenience yield for a commodity is positively correlated with the futures price.
- ☒ B) Commodities that are subject to sudden and large demand shocks may exhibit backwardation in the futures market due to significant convenience yields.
- ☐ C) The arbitrage free price of a commodities futures contract is often lower than that of a financial security futures contract due to storage costs.

Explanation

Storage costs increase the price of commodities futures contracts. If a commodity is subject to demand shocks the benefit from holding the commodity is higher and hence the higher convenience yield may force the futures market into backwardation. Higher convenience yields reduce the futures price.

Question #87 of 126

Question ID: 463636

Which of the following types of REITs is more common in Europe and Asia than in the United States?

- ☒ A) Diversified REITs
- ☐ B) Multi-family / Residential REITs
- ☐ C) Industrial REITs

Explanation

Diversified REITs own and operate more than one type of property. Diversified REITs are more common in Europe and Asia than in the United States. Diversification allows for reduced risk and wider opportunities. (Study Session 13, LOS 39.d)

Question #88 of 126

Question ID: 463705

The current spot price of a commodity is \$85.20. An investor purchases a 6 month futures contract on the underlying commodity at a price of \$84.80. Which of the following statements regarding the roll yield is *most* accurate?

- ☒ A) If the market stays in backwardation, the roll return will be positive regardless of the movement in spot price.
- ☐ B) Roll return will only be negative if the spot price drops below \$84.80 at maturity.
- ☐ C) Roll return will only be positive if the spot price drops below \$85.20 at maturity.

Explanation

Roll return reflects the convergence of the futures price to the spot price. When the market is in backwardation (futures price below spot) the roll yield is always positive.

Question #89 of 126

Question ID: 463655

Which of the following statements is the *least appropriate*?

- ✓ **A) Debt amortization in a leveraged buyout investment increases risk to the investor as it is a burden on the firm's cash flow.**
- x **B) Leverage in a leveraged buyout investment can be disadvantageous as debt increases risk to the investor if the firm cannot meet its interest obligation.**
- x **C) Leverage in a leveraged buyout investment can be advantageous as debt amortization can magnify investor returns.**

Explanation

As the amortization of debt reduces investor risk (less debt outstanding) and the reduced claim by debtholders can actually magnify investor returns.

Question #90 of 126

Question ID: 463602

In appraising a commercial property, both the direct capitalization method and the discounted cash flow methods are *most likely* to use as a primary input the:

- x **A) terminal cap rate.**
- ✓ **B) net operating income.**
- x **C) gross income multiplier.**

Explanation

Both the direct capitalization method and the discounted cash flow methods focus on net operating income (a proxy for cash flow) as a key input to the value of a property. In the DCF method, future operating income is discounted to generate a present value. In the direct capitalization method, current NOI is capitalized using the cap rate. An alternative form of direct capitalization uses a gross income multiplier. Terminal valuation under a DCF methodology may use terminal cap rate based on expected NOI at some future horizon. However, this is not used under direct capitalization (of first year NOI). (Study Session 13, LOS 38.h)

Question #91 of 126

Question ID: 463642

Which of the following *most accurately* describes an approach to REIT valuation?

- x **A) The P/AFFO approach avoids estimates and assumptions in its calculation.**
- x **B) The P/FFO approach adjusts for the impact of recurring capital expenditures needed to keep properties operating smoothly.**
- ✓ **C) The discounted cash flow approach typically consists of intermediate-term cash flow projections plus a terminal value based on cash flow multiples.**

Explanation

In discounted cash flow REIT models, investors generally use intermediate-term cash flow projections and a terminal value

based on historical cash flow multiples. FFO does not adjust for the impact of recurring capital expenditures needed to keep properties operating. AFFO adjusts for routine maintenance type capital expenditures, but assumptions and estimates (which may vary widely) are required in the calculation of AFFO.

(Study Session 13, LOS 39.g)

Question #92 of 126

Question ID: 463695

A private equity investor calculates a discount rate of 40% for valuing a company. The investor, however, believes that there is a 20% chance that the company will fail in any one year. The *most appropriate* adjusted discount rate the investor should use is:

✓ **A) 75.0%.**

✗ **B) 48.0%.**

✗ **C) 50.0%.**

Explanation

The discount rate adjusted for the probability of failure is calculated as follows:

$$r^* = (1 + 0.40) / (1 - 0.20) - 1 = 0.75 \text{ or } 75\%$$

Question #93 of 126

Question ID: 463660

The Dragonhill Group manages a \$250 million private equity fund. Investors committed to a total of \$300 million over the term of the fund and specified carried interest of 20% and a hurdle rate of 10%. Carried interest is distributed on a deal-by-deal basis. 60% of the \$250 million has been invested at the beginning of year 1 in Deutsch Co. (Deutsch), with the remaining 40% invested in Reiner Ltd (Reiner).

Both firms are sold at the end of the third year, realizing a \$45 million profit for Deutsch and a \$35 million profit for Reiner.

The carried interest paid to the fund's general partner after Deutsch and Reiner, respectively, is:

Deutsch

Reiner

✗ **A) \$9 million \$7 million**

✗ **B) \$9 million \$0**

✓ **C) \$0 \$7 million**

Explanation

Since carried interest is paid on a deal-by-deal basis, profits are not netted. Also, carried interest is only paid if the investment's IRR at least meets the hurdle rate of 10%.

(All figures are in \$ million):

The initial allocation between the firms was:

Deutsch: $(0.60)(\$250) = \150

Reiner: $(0.40)(\$250) = \100

The IRRs for the two firms are:

IRRDeutsch: $PV = -\$150$; $FV = \$195$, $N = 3$; CPT I/Y \rightarrow IRR = 9.14%.

IRRReiner: $PV = -\$100$; $FV = \$135$; $N = 3$; CPT I/Y \rightarrow IRR = 10.52%.

Since the return on Deutsch fell short of the 10% hurdle rate, the general partner only receives profits after Reiner. The profit is 20% of \$35 million, or \$7 million.

Question #94 of 126

Question ID: 463646

The Jefferson Group is a large private equity firm managing a multi-billion dollar portfolio. Which of the following is the *least likely* source of value-added the Jefferson Group would provide to its portfolio companies (as compared to a public firm)?

- ✓ **A) Aligning the interests between private equity owners and limited partners.**
- ✗ B) Reengineering the portfolio companies.
- ✗ C) Obtaining cheap credit.

Explanation

The three sources of value-added a private equity firm provides over public firms are: reengineering the portfolio firms, obtaining debt on favourable terms (cheap credit), and aligning the interests between private equity owners (the limited partners) and portfolio managers.

Question #95 of 126

Question ID: 463624

A real estate investment is expected to have cash flows after taxes in each of the next four years equal to GBP90,000, GBP55,000, GBP35,000, and GBP25,000, respectively. The initial equity investment in this property is GBP200,000 and the equity at the end of year-four is estimated to be GBP100,000. Assuming an after tax return on equity of 8.5%, the net present value (NPV) and internal rate of return (IRR) for this investment is *closest* to:

NPV

IRR

- ✓ **A) GBP47,268 18%**
- ✗ B) GBP45,376 16%
- ✗ C) GBP41,399 15%

Explanation

Using your TI BAII Plus:

```
[CF] [2nd] [CLR WORK]
-200,000 [+/-] [ENTER] [↓]
90,000 [ENTER] [↓] [↓]
55,000 [ENTER] [↓] [↓]
35,000 [ENTER] [↓] [↓]
```

125,000 (note: $CF_3 = 25,000 + 100,000$)

[NPV] {8.5} [ENTER] [↓]

[CPT] = GBP 47,267.91

[IRR] [CPT] = 18.39%

Question #96 of 126

Question ID: 463653

Analysts Jordan Green and Noelle Lafonte are discussing terminal value estimation in venture capital and buyout investments.

Lafonte states: "Private equity firms often use scenario analysis in both venture capital and buyout investments to estimate terminal value."

Green adds: "Private equity firms only use the multiple of net income approach in leveraged buyout (LBO), but not in venture capital investments to estimate terminal value."

With respect to their statements:

- ✓ **A) Lafonte is correct but Green is incorrect.**
- ✗ **B) Green is correct but Lafonte is incorrect.**
- ✗ **C) Neither Lafonte nor Green is incorrect.**

Explanation

Lafonte's statement is correct. Private equity firms can use scenario analysis to estimate terminal value in both venture capital and LBO investments. Under scenario analysis, terminal values are calculated under multiple scenarios using different assumptions.

Green's statement is incorrect. Private equity firms often use a relative value approach to estimate terminal value in both venture capital and LBO investments. Under the multiple of net income approach, terminal year net income is multiplied by the P/E ratio to project terminal equity value.

Question #97 of 126

Question ID: 463596

Which of the following statements *most accurately* describes the capitalization rate used for real estate valuation?

- ✓ **A) The capitalization rate is the rate of return that equity investors require on similar-risk real estate investments net of the expected constant growth rate of net operating income.**
- ✗ **B) The capitalization rate is one plus the constant growth rate of net operating income.**
- ✗ **C) The capitalization rate is the rate of return that equity investors require on similar-risk real estate investments.**

Explanation

The capitalization rate (C) is the rate of return that equity investors require on similar-risk real estate investments (r) net of the expected constant growth rate of net operating income (g). That is, $C = r - g$.

Question #98 of 126

Question ID: 463687

A private equity firm makes an investment in a portfolio company and calculates that the firm should hold 1,000,000 shares at a price of \$15.00 per share using the IRR approach. The founders of a portfolio company currently hold 300,000 shares. The appropriate post-money (POST) valuation is:

- ✓ **A) \$19.5 million.**
- x B) \$13 million.
- x C) \$15 million.

Explanation

Since we have no information on exit value or the IRR rate, but the share price and number shares held by each party is given, the post-money valuation (POST) is calculated as:

POST = shares price x total number of shares = \$15 × (1,000,000 + 300,000) = \$19.5 million.

Question #99 of 126

Question ID: 463599

Suppose you have collected the information in the table below for four comparable properties.

<i>Property</i>	<i>Net Operating Income (NOI)</i>	<i>Selling Price</i>
A	\$200,000	\$2,250,000
B	\$220,000	\$2,000,000
C	\$250,000	\$2,500,000
D	\$230,000	?

Using the market extraction method in conjunction with an average capitalization rate, the market value (MV) for Property D is estimated to be *closest* to:

- x **A) \$2,300,000.**
- ✓ **B) \$2,309,237.**
- x C) \$2,090,909.

Explanation

Market extraction technique: $C = NOI / MV$

$$C_A = \frac{NOI_A}{MV_A} = \frac{200,000}{2,250,000} = 8.89\%$$

$$C_B = \frac{NOI_B}{MV_B} = \frac{220,000}{2,000,000} = 11.0\%$$

$$C_C = \frac{NOI_C}{MV_C} = \frac{250,000}{2,500,000} = 10.0\%$$

$$\text{Estimated capitalization rate : } C_D = \frac{8.89 + 11.0 + 10.00}{3} = 9.96\%$$

Then, using the direct income capitalization approach we have:

$$MV_D = \frac{NOI_D}{C_D} = \frac{230,000}{0.0996} = \$2,309,236.95$$

Question #100 of 126

Question ID: 463685

Mavis Krager, manager of alternative investments for the Richmond Group, is considering the merits of some private-equity opportunities. Richmond Group likes to invest in private-equity funds, but will also do its own deals if the opportunity is right. One deal on the table is an equity stake in Melton Motors, a chain of privately held auto dealerships. The company is well run, but has come upon hard times lately because of credit problems. Krager thinks Melton will solve its financial problems and become profitable again. She is considering investing \$7 million in the company. Also under discussion is The Apple House, a large privately held orchard in Wisconsin. Richmond Group is considering investing \$5 million.

To determine whether the deals are worthwhile Krager decides to estimate a price for each company based on a post-money valuation, using a discount rate of 13.7%. The investment firm prefers to focus on companies willing to price their stocks at least 20% below their true value and fund the investments only once. To calculate her valuations, Richmond uses the data below:

	Melton Motors	The Apple House
Stock price offered	\$17	\$42
Number of shares held by current owners	1.5 million	80,000
Estimated value of company at end of investment period	\$51 million	\$29 million
Expected length of investment	5 years	10 years

Just as Krager finishes her assessment of the two private-equity deals, a contact at The Apple House calls her and says the management team is considering a leveraged buyout (LBO) and wants Richmond Group to help finance it. Since the firm hasn't financed an LBO for years, Krager gets out a book she has not read since college to bone up on the valuation equations and acquaint herself with terms specific to LBOs.

What action should Richmond Group take with regard to:

	<u>The Apple</u>
<u>Melton Motors</u>	<u>House</u>

- | | |
|----------------------|-----------------|
| ✓ A) Don't buy stake | don't buy stake |
| x B) Buy stake | don't buy stake |
| x C) Don't buy stake | buy stake |

Explanation

Step 1: Discount the future value of the company to obtain the post-money valuation (POST).

$$\text{POST} = \text{future value} / (1 + r)^{\text{investment period}}$$

POST for Melton = \$51 million / $(1 + 13.7\%)^5$ = \$26.839 million.

POST for Apple = \$29 million / $(1 + 13.7\%)^{10}$ = \$8.031 million.

Step 2: Calculate pre-money valuation.

$$\text{PRE} = \text{POST} - \text{investment.}$$

PRE for Melton = \$26.839 million – \$7 million = \$19.839 million.

PRE for Apple = \$8.031 million – \$5 million = \$3.031 million.

Step 3: Determine the fractional ownership.

$$F = \text{INV} / \text{POST}$$

F for Melton = \$7 million / \$26.839 million = 26.08%.

F for Apple = \$5 million / \$8.039 million = 62.26%.

Step 4: Determine the number of shares the firm must buy.

$$\text{Stake} = \text{Entrepreneurs' shares} \times [F / (1 - F)].$$

Stake for Melton = 1.5 million * $[26.08\% / (1 - 26.08\%)]$ = 529,258 shares.

Stake for Apple = 80,000 * $[62.26\% / (1 - 62.26\%)]$ = 131,951 shares.

Step 5: Calculate stock price per share.

$$P = \text{INV} / \text{Stake}$$

P for Melton = \$7 million / 529,258 = \$13.23

P for Apple = \$5 million / 131,951 = \$37.89

Melton's calculated value is 22% below the current offer price. Apple's is 9.8% below the current offer price. Richmond Group should not buy either stake. (Study Session 13, LOS 46.j)

Question #101 of 126

Question ID: 463693

The *least likely* factor affecting venture capital firm valuation is the:

- ✓ **A) private equity firm's initial investment.**
- ✗ **B) probability of failure.**
- ✗ **C) bargaining power of the venture capital and private equity firms.**

Explanation

The probability of failure is often factored in to adjust the discount rate (IRR) which could significantly affect firm valuation. The bargaining power between the two parties affects the final price paid for the venture capital firm. The private equity firm's initial investment has no direct bearing on venture capital firm valuation.

Question #102 of 126

Question ID: 463649

Norah Cyly is the recently appointed manager of a private equity fund that invests exclusively in venture capital investments in online fashion and media advertising companies. In a discussion with the fund's assistant portfolio manager, Cyly makes the following statements on control mechanisms and exit routes:

Statement 1: *Earn-outs* are mainly used in venture capital investments. They relate the acquisition price paid by the limited partners to the future performance of the portfolio companies.

Statement 2: It is generally difficult to value venture capital investments using the portfolio companies' cash flows or EBIT or EBITDA growth, since both cash flows and earnings are difficult to predict with certainty.

With respect to her statements, Cyly is:

- ☒ A) correct on Statement 2 only.
- ☒ B) correct on both statements.
- ☒ C) correct on Statement 1 only.

Explanation

Both of Cyly's statements are correct. Her description of earn-outs as a control mechanism is accurate. Her comment on cash flows and earnings growth is also correct, given most venture capital firms' lack of stable cash flow and earnings patterns. This type of valuation is better suited for leveraged buyout investments.

Question #103 of 126

Question ID: 463536

Assume that a property that you are evaluating has a gross annual income equal to \$230,000, and that comparable properties are selling for 10.5 times gross income. The gross income multiplier approach provides a market value for this property that is *closest* to:

- ☒ A) \$2,415,000.
- ☒ B) \$2,587,500.
- ☒ C) \$2,190,476.

Explanation

Gross income multiplier technique: $MV = \text{gross income} \times \text{income multiplier}$.

$MV = \$230,000 \times 10.5 = \$2,415,000$

Questions #104-109 of 126

Zolan Athos and Katie Brie co-manage one of the funds of The Ceskel Group, a large private equity firm based in Canada. The fund, established in 2004, has total assets of \$500 million and invests primarily in real estate firms ranging from new ventures to leveraged buyouts of larger, established companies. The fund will reopen to outside investors next year and is looking to raise an additional \$250 million to make strategic investments over the next two years, after which the fund will be closed to new capital.

In one of the meetings with potential investors, Athos and Brie discuss their recommendations for investment and acquisition opportunities. When questioned by an investor on exit strategies and terminal value projections, Brie makes the following statements:

Statement 1: One possible exit route is through an IPO. An IPO generally offers a higher potential exit value than a management buyout or liquidation.

Statement 2: We favor IPOs since they are appropriate for firms of any size, regardless of their growth prospects or lack of operating history.

Athos adds the following comments on terminal value projections:

Statement 3: For venture capital projects, estimating terminal value with certainty is difficult given the relatively young age of these firms. To calculate the investor's future wealth, however, one valuation technique is the IRR method.

Statement 4: To project the terminal value for leveraged buyout (LBO) investments, we often use the free cash flow method or sales or earnings multiples approach.

Following their meeting with the investors, Athos and Brie meet privately to assess the fund's recent performance. Athos and Brie charge 1.5% to manage the fund, and carried interest of 25% is paid based on the total return method using committed capital. The fund's investors committed to a total of \$500 million in capital over ten years. A scaled-down version of the firm's statistics for the last five years is given in the following table (in \$ millions):

Fund Cash Flows						
	Capital Called Down	Operating Results	Mgmt Fees	NAV before Distributions	Distributions	NAV after Distributions
2004	200	-40	3.0	157.0	0	157.0
2005	100	-70	4.5	182.5	0	182.5
2006	100	100	6.0	376.5	70	306.5
2007	50	180			100	
2008	50	250			150	

Finally Athos and Brie discuss two potential acquisition targets. The first is a venture capital firm with a projected discount rate of 20%. Athos and Brie, however, believe that this projection is highly optimistic given current market conditions, and speculate that in any given year there is a 30% chance of company failure. The second acquisition would be an investment in a leveraged buyout company. The company's asset beta is estimated at 0.90 and the company uses 1/3 debt and 2/3 equity financing.

Question #104 of 126

Question ID: 463666

With regard to Statement 1 and 2, respectively, on an exit strategy through an IPO, Brie is:

Statement 1 Statement 2

☒ A) Incorrect Incorrect

- ✓ **B)** Correct Incorrect
- ✗ **C)** Incorrect Correct

Explanation

An IPO traditionally offers the highest exit value due to higher liquidity and better access to capital. IPOs, however, are generally quite costly to implement and less flexible, and are most appropriate for firms with a high growth potential and considerable operating history. (Study Session 13, LOS 42.e)

Question #105 of 126

Question ID: 463667

With regard to Statement 3 and 4 on terminal value projections of the venture capital and LBO investments, respectively, Athos is:

- ✗ **A)** incorrect on Statement 3 since the IRR method is useful in obtaining present value projections but cannot be used as a tool to compute the future expected wealth of a venture capital investor.
- ✓ **B)** correct on both statements.
- ✗ **C)** incorrect on Statement 4 since the free cash flow method and the sales or earnings multiples are not useful for investments financed to a large extent by debt.

Explanation

Statement 3 is correct. One way to visualize the IRR method is to think of the venture capital method using NPV in reverse. With the IRR method, the investor's present investment is compounded at the IRR rate over t (number of years to exit) to arrive at the investor's expected future wealth.

Statement 4 is also correct. Private equity firms frequently use the free cash flow or a sales or earnings multiple approach to project terminal values. Debt (both junior and senior) is factored into these calculations.

For answers to questions 3-5, refer to the following table:

Fund Cash Flows							
	Capital Called Down	Operating Results	Mgmt Fees	NAV before Distributions	Carried Interest	Distributions	NAV after Distributions
2004	200	-40	3.0	157.0	0	0	157.0
2005	100	-70	4.5	182.5	0	0	182.5
2006	100	100	6.0	376.5	0	70	306.5
2007	50	180	6.8	529.8	7.4	100	422.3
2008	50	250	7.5	714.8	46.3	150	518.5

Management fees are 1.50% of cumulative called down capital (paid-in capital).

NAV before distributions for any year is the NAV after distributions of the prior year, plus new capital called down, plus operating results, less management fees.

Carried interest is discussed below.

NAV after distributions for any year is NAV before distributions less carried interest less any distributions. (Study Session 13, LOS 42.j)

Question #106 of 126

Question ID: 463668

Based on information in the table above, management fees and carried interest, respectively, in 2007 will be *closest* to (in \$ millions):

	<u>Management Fee</u>	<u>Carried Interest</u>
<input checked="" type="radio"/> A) \$0.75		\$8.90
<input checked="" type="radio"/> B) \$3.50		\$8.30
<input checked="" type="radio"/> C) \$6.80		\$7.45

Explanation

2007 management fees are calculated as 1.50% of paid-in capital. 2007 paid-in capital is \$200 + \$100 + \$100 + \$50 = \$450. Management fees are 1.50% of \$450, or \$6.75.

Carried interest is the general partner's share of fund profits. It is calculated based on the total return (NAV before distributions) method using *committed* capital. Total capital commitment by investors is \$500 million. In 2007 NAV before distributions was \$529.8, exceeding committed capital for the first time.

Carried interest is 25% of NAV before distributions less committed capital, or $(0.25)(\$529.8 - \$500) = \$7.45$. (Study Session 13, LOS 42.f,i)

Question #107 of 126

Question ID: 463669

Carried interest to the fund's partners will first be paid out in:

- ☒ A) 2007.
- ☒ B) 2006.
- ☒ C) 2008.

Explanation

Carried interest is paid to the general partners based on the total return method using *committed* capital. Carried interest will thus be only paid when total return (as measured by NAV before distributions) exceeds the committed capital of \$500 million. The first year that carried interest would be paid is 2007. (Study Session 13, LOS 42.f,i)

Question #108 of 126

Question ID: 463670

The fund's distributed to paid in capital (DPI) and residual value to paid in capital (RVPI) multiples, respectively, for 2008 will be *closest* to:

	<u>DPI</u>	<u>RVPI</u>
<input checked="" type="radio"/> A) 3.00		1.43

- ☐ B) 0.30 1.43
- ☒ C) 0.64 1.04

Explanation

DPI measures the limited partners' (LPs') realized return in the fund. DPI is calculated as the cumulative distributions divided by the paid-in capital. Cumulative distributions for 2008 were \$150 + \$100 + \$70 = \$320. Paid-in capital in 2008 was \$200 + \$100 + \$100 + \$50 + \$50 = \$500.

The ratio of cumulative distributions to paid-in capital is \$320/\$500 = 0.64

RVPI measures the LPs' unrealized return in the fund. It is calculated by dividing the NAV after distributions by the paid-in capital. NAV after distributions in 2008 was \$518.5.

The ratio of NAV after distributions to paid-in capital is \$518.5/\$500 = 1.037 (Study Session 13, LOS 42.h,i)

Question #109 of 126

Question ID: 463671

Regarding the potential acquisition targets discussed by Athos and Brie, the venture capital firm's discount rate adjusted for failure is *closest* to:

Adjusted discount
rate

- ☒ A) 71.43%
- ☐ B) 28.57%
- ☐ C) 11.45%

Explanation

The venture capital firm's discount rate adjusted for the probability of failure is calculated as follows:

$$r^* = \frac{1 + 0.20}{1 - 0.30} - 1 = 0.7143, \text{ or } 71.43\%$$

(Study Session 13, LOS 42.k)

Question #110 of 126

Question ID: 463633

Mortgage REITs:

- ☐ A) are the most common form of REITs.
- ☐ B) take ownership positions in income-producing real estate.
- ☒ C) have a smaller total market value than do equity REITs.

Explanation

The total market value of mortgage REITs is small compared with the total value of equity REITs. Equity REITs are the most common form of REITs. Equity REITs invest in ownership positions of income-producing real estate.

(Study Session 13, LOS 39.c)

Question #111 of 126

Question ID: 463686

The private equity firm Purcell & Hyams (P&H) is considering a \$17 million investment in Eizak Biotech, of which \$10 million is invested today and \$7 million in four years. Eizak's owners firmly believe that with P&H's investment they could develop their "wonder" drug and sell the firm in six years for \$120 million. Given the project's risk, P&H believes a discount rate of 50% is appropriate for the first four years, and 30% for the last two years. The fractional ownership for P&H at the time of the initial investment would be *closest* to:

- ☒ A) 0.71.
- ☐ B) 0.27.
- ☐ C) 0.79.

Explanation

The calculation requires four steps (*all figures in millions except for fractional data*):

Step 1: The terminal value must first be discounted to the time of the second-round financing to arrive at the post-money (POST₂) valuation:

$$\text{POST}_2 = (\$120 \text{ million}) / (1.30)^2 = \$71.01 \text{ million}$$

Step 2: The pre-money valuation (PRE₂) at the second round of financing is:

$$\text{PRE}_2 = \$71.01 \text{ million} - \$7 \text{ million} = \$64.01 \text{ million.}$$

Step 3: The PRE₂ valuation then has to be discounted back at the appropriate discount rate to the time of the first-round financing to arrive at the post-money (POST₁) valuation:

$$\text{POST}_1 = (\$64.01 \text{ million}) / (1.50)^4 = \$12.64 \text{ million}$$

Step 4: The fractional ownership (f₁) for first-round investors is:

$$f_1 = \text{INV}_1 / \text{POST}_1 = \$10 \text{ million} / \$12.64 \text{ million} = 0.79.$$

Question #112 of 126

Question ID: 463635

The rate of population growth is *most likely* to be a top driver of economic value for a(n):

- ☒ A) storage REIT.
- ☐ B) retail REIT.
- ☐ C) office REIT.

Explanation

Population growth has been found to be a major economic factor driving economic value for storage REITs. Job creation is a more important driver of economic value for an office REIT than is population growth. Retail sales growth is a more important driver of economic value for a retail REIT than is population growth.

(Study Session 13, LOS 39.d)

Question #113 of 126

Question ID: 463630

Mortgage REITs are publicly traded securities that make loans secured by real estate, therefore they are publicly traded debt investments. REOCs are classified as equity (not debt) securities, while bank debt is classified as a private rather than public investment. Which of the following is the *most likely* to represent an advantage of investing in publicly traded real estate securities over direct ownership of property? Publicly traded real estate securities offer:

- ☐ A) lower price volatility.
- ☒ B) greater liquidity.
- ☐ C) more control over investment decisions.

Explanation

One of the main advantages of investing in publicly traded equity real estate securities stems from the fact that these securities trade on stock exchanges, which results in greater liquidity compared with buying and selling real estate directly. The downside of trading on a stock exchange is that publicly traded equity real estate securities have greater price volatility than do directly owned properties. Another disadvantages of publicly traded real estate securities is that they offer investors little to no control over investment decisions. (Study Session 13, LOS 39.b)

Question #114 of 126

Question ID: 463627

Which of the following *most accurately* identifies one of the disadvantages of investing in real estate through publicly traded securities? Compared to other real estate investment vehicles, publicly traded securities expose investors to:

- ☒ A) more-volatile returns.
- ☐ B) inferior liquidity.
- ☐ C) unlimited liability.

Explanation

Disadvantages of investing in real estate through publicly traded securities include the volatile returns that result from pricing that is determined by the stock market. Publicly traded real estate securities offer investors the advantages of superior liquidity, and liability that is limited to the amount invested.

Questions #115-120 of 126

Kent Clarkson, Tony Chekov and Peter Chanwit are investment consultants for a large public pension fund. They are partners in Clarkson, Chekov and Chanwit Consulting also known as 3CC. From previous meetings with the pension board, it has been established there will be an increase in exposure to real estate for the overall portfolio. Because of the defined benefit plan's significant size and their staff's expertise, the pension fund can invest and manage all forms of real estate investments. Partners of 3CC are to recommend a form of real estate investments, and recommend potential investments.

Expected Real Estate Market Conditions

Both residential and commercial real estate prices have fallen over the last five years. This trend is not expected to persist. It is a 'buyer's market' - the current supply exceeds the current demand and prices are lower than the intrinsic value. Although interest rates have fallen to historically low rates, the volume of real estate transactions remains low. Current average 20-year commercial mortgage rates are 3.75% and expected to stay relatively flat for at least 7 more years.

Loan underwriting standards have become more stringent and loan-to-value (LTV) ratios are expected to be lower than the

earlier average rate of 80%.

The four forms of real estate under consideration as an investment choice for the pension fund are:

- Private: equity option is to buy commercial properties and manage them; debt option is to directly lend to commercial property investors.
- Public: equity option is to buy equity REITs; debt option is to buy mortgage REITs or CMOs.

The following information was collected by 3CC partners to aid their analysis. The returns and standard deviations of the four possible forms of real estate investments considered are listed in Exhibit 1. Correlations of real estate index with Treasury bill returns, US aggregate bond returns and US stock returns are listed in Exhibit 2.

Exhibit 1: Returns and Standard deviation (past 20 years)

	Returns	σ
Private Equity	9.5%	6.5%
Private Debt	5.5%	8.5%
Public Equity	11.5%	21.0%
Public Debt	6.2%	22.5%
Treasuries	3.5%	0.6%

Exhibit 2: Correlation of Real Estate Index With Other Asset Classes (past 20 years)

Real Estate Index Correlations	ρ
US Treasuries	0.35
US Aggregate Bonds	-0.05
US Stocks	0.25

The partners make the following statements:

Kent Clarkson: We should eliminate the private debt option from consideration. Returns for private debt are likely to be low since interest rates are likely to remain low and the amount of underwriting that is going to be required as a lender doesn't seem worth it.

Tony Chekov: I like the equity options better than the debt options based on Clarkson's private debt expectations.

Peter Chanwit: I prefer the private option over the public option since the pension fund staff can better actively manage the real estate projects and possibly outperform the index.

The partners have identified specific REIT managers who have consistently outperformed their indices for the public option. They have also contacted potential high creditworthy borrowers in case of private debt. For the private equity option, the partners are looking at different commercial properties. They have narrowed their choices to hotels and multi-family units.

Peter Chanwit is analyzing two specific buildings. Green Oaks Hotel and Blue Ridge Apartments are next to each other; have exactly the same number of units, same amenities; were built 10 years ago by the same construction company; and managed by the same property management company. They are currently owned by different entities that are also looking to provide the financing on the following basis.

Green Oaks Hotels		Blue Ridge Apartments	
Asking Price	\$25,000,000	Asking Price	\$25,000,000

Annual NOI End of Year 1	\$2,187,500	Annual NOI End of Year 1	\$2,125,000
LTV	75.0%	LTV	70.0%
Loan Interest Rate	4.00%	Loan Interest Rate	3.50%
Monthly Debt Service	\$113,621	Monthly Debt Service	\$101,493
Loan Term	20 Years	Loan Term	20 Years
Expected Sales Price in 10 Yrs	\$30,000,000.00	Expected Sales Price in 10 Yrs	\$30,000,000.00
Principal Owed at End of 10 Yrs	\$11,222,397	Principal Owed at End of 10 Yrs	\$11,144,755

The pension fund can buy one or both buildings provided they meet the minimum criteria of a debt service coverage ratio of at least 1.50X and a levered IRR of at least 17.5%.

The indices under consideration as the benchmark for private real estate equity investing are:

- Jackson Property Index (JPI) is an appraisal based index.
- Taft's Sales Index (TSI) is a repeat sales index.
- Lincoln Hedonic Index (LHI) is a hedonic index.

Concerns regarding the index choice were verbalized at a 3CC meeting:

Kent Clarkson: I'm worried about Lincoln Hedonic Index. This index may adjust for differences in property characteristics but I'm not sure it can be effective given that some properties may not sell more than once during the index's coverage period.

Tony Chekov: I don't like the Jackson Property Index. Appraisals are estimates; there haven't been many transactions lately so I question the reliability of the returns.

Peter Chanwit: I'm not sure about Taft's Sales Index. It relies on actual transactions but there are so few sales recently so how reliable are the returns?

Question #115 of 126

Question ID: 463580

Based on projected real estate conditions and the partners' discussion given in the vignette, 3CC's top recommendation would *most likely* be:

- ☒ A) public debt.
- ☒ B) private equity.
- ☒ C) public equity.

Explanation

The category that 3CC would most likely recommend as first choice is private equity option. Chekov prefers equity to debt option and Chanwit prefers private over public option. Clarkson wants to eliminate private debt option. Their statements are also consistent with the real estate market expectations. (Study Session 13, LOS 40.a)

Question #116 of 126

Question ID: 463581

If the pension plan chooses to buy mortgage REITs, the *mostly likely* benefit from real estate investing is the:

- ☒ A) capital appreciation.

- ✓ **B)** current income.
- ✗ **C)** inflation hedge.

Explanation

A mortgage REIT is a public debt form of real estate investing. Current income is a source of returns since an investor of a mortgage REIT would receive cash flows attributable to mortgage payments into the pool. Capital appreciation only exists for an equity investor of properties and not a debt investor. Inflation hedge is possible for an equity investor if property values/cash flows are positively correlated with inflation. (Study Session 13, LOS 40.l)

Question #117 of 126

Question ID: 463582

If the pension fund chooses to invest in hotels over apartments, one possible reason for this is that hotels:

- ✗ **A) are commercial properties while apartments are residential properties.**
- ✗ **B)** are not affected by cost and availability of debt capital.
- ✓ **C)** may offer higher rates of returns because of higher operational risk.

Explanation

All real estate values are affected by cost and availability of capital. Apartments and other multi-family units are considered commercial real estate. Hotels require more active management making them more risky ventures as more operational expertise is needed. This additional risk requires a higher rate of return. (Study Session 13, LOS 40.b)

Question #118 of 126

Question ID: 463583

Compared to Blue Ridge Apartments, Green Oaks Hotel has higher:

- ✓ **A) cap rate.**
- ✗ **B)** discount rate because the amount of principal owed is higher.
- ✗ **C)** net operating income because of the higher debt service.

Explanation

The cap rate is NOI for next year divided by the current value. Since the asking price for both properties is same, higher NOI for Green Oaks hotel would have to have a higher cap rate. Net operating income is not calculated using the debt service. The amount owed at the end of a loan is determined by the interest rate, term of the loan and the amount borrowed. The discount rate is the sum of the cap rate and growth rate. The growth rate is not determined by the amount owed at the end of a loan period. (Study Session 13, LOS 40.f)

Question #119 of 126

Question ID: 463584

Which choice meets the minimum criteria for investment?

- ✗ **A) Blue Ridge only.**
- ✗ **B)** Green Oaks only.
- ✓ **C)** both Green Oaks and Blue Ridge.

Explanation

Both Green Oaks and Blue Ridge meet the minimum criteria. (Study Session 13, LOS 40.m)

	Green Oaks Hotel	Blue Ridge Apartments
NOI	\$2,187,500	\$2,125,000
Annual Debt Service	$\$113,621 \times 12 =$ \$1,363,452	$\$101,493 \times 12 =$ \$1,217,916
DSCR	$\$2,187,500 / \$1,363,452$ = 1.60X	$\$2,125,000 / \$1,217,916$ = 1.74X
Cash flows (PMT)	$\$2,187,500 -$ $\$1,363,452 = \$824,048$	$\$2,125,000 -$ $\$1,217,916 = \$907,084$
Equity (PV) ¹	\$6,250,000	\$7,500,000
Sales Price – Debt in 10 Years (FV)	$\$30,000,000 -$ $\$11,222,397 =$ \$18,777,603	$\$30,000,000 -$ $\$11,144,755 =$ \$18,855,245
Sales Date (N)	10	10
Levered IRR	20.66%	18.40%

¹Equity is based on (1-LTV) of the asking price

Question #120 of 126

Question ID: 463585

Which statement regarding issues with indices is *least likely* correct?

- ☒ A) Chanwit's statement.
- ☒ B) Chekov's statement.
- ☒ C) Clarkson's statement.

Explanation

Clarkson's concerns about Lincoln Hedonic Index if individual properties don't sell more than once are unfounded. Hedonic Index construction does not require multiple sales of the same property. (Study Session 13, LOS 40.k)

Question #121 of 126

Question ID: 463617

Appropriate due diligence in a private real estate investment is *most likely* to:

- ☒ A) mitigate unforeseen potential problems.
- ☒ B) review lease and rental history.
- ☒ C) lower existing operating costs.

Explanation

Due diligence can be very costly but it can potentially lower risk of unexpected legal and physical real estate problems. Due diligence will usually increase current operating costs. A review of lease and rental history is one example of due diligence not a possible result of due diligence.

(Study Session 13, LOS 38.j)

Question #122 of 126

Compared with REITs, real estate operating companies (REOCs) are *most likely* to feature higher:

- ☐ A) yields.
- ☐ B) levels of income tax exemption.
- ☒ C) operating flexibility.

Explanation

REOCs have greater operating flexibility to invest in a wide range of real estate than do REITs. REITs offer higher yields compared to REOCs. REITs offer income tax exemption while REOCs generally do not.

Question #123 of 126

Question ID: 463672

An analyst makes the following statements on the risk and costs of private equity investments:

Statement 1: Committed capital is the initial capital in a private equity fund to obtain first round financing. As committed capital is used up, investors are required to make additional commitments to finance firm projects and expansion.

Statement 2: The J-Curve refers to the risk pattern in a private equity investment over time. Risk in private equity investments initially typically declines as more capital is drawn down but increases closer to exit since exit timing and values are difficult to predict.

With respect to the analyst's statements:

- ☐ A) both are correct.
- ☒ B) both are incorrect.
- ☐ C) only one is correct.

Explanation

Both statements are incorrect. Committed capital refers to the amount of funds investors committed to over the life of the private equity fund. Funds from committed capital are drawn down over time as the firm needs more capital. If the firm needs financing beyond investors' committed capital, it would have to look for additional sources of funds.

The J-Curve refers to a pattern in private equity investment return, not risk. The return on investments usually declines initially, then increases as exit nears.

Question #124 of 126

Question ID: 463658

Which of the following lists *correctly* identifies exit routes in private equity, arranged from lowest to the highest exit values?

- ☒ A) Liquidation, secondary market sale, IPO.
- ☐ B) Management buyout, liquidation, IPO.
- ☐ C) Initial public offering (IPO), management buyout, secondary market sale.

Explanation

Liquidation is a sale of last resort for bankrupt or insolvent firms and generally results in low exit values. The value realized on the sale to management in a management buyout typically varies, but lags behind values from a secondary market sale or an IPO.

A secondary market sale is analogous to a private sale of the firm to another firm. Secondary market sales use large amounts of debt financing and could result in the second highest valuation after an IPO. An IPO is a sale of the entire firm or part of the firm (e.g. a division) to the public. As a result of the increased post-IPO liquidity, transparency and access to capital, the private equity firm can realize the highest exit value of a firm through the IPO process.

Question #125 of 126

Question ID: 463592

An appraiser who wishes to value an unusual property is *most likely* to estimate the value of the property using the:

- ☒ A) income approach.
- ☒ B) sales comparison approach.
- ☒ C) cost approach.

Explanation

Three main methods are used by appraisers to estimate value: cost, income, and sales comparison. The cost approach is based on replacement cost, and is usually used for unusual properties for which comparable market prices are not available. The sales comparison approach estimates a property's value based on what comparable properties are selling for. The income approach uses net operating income to value a property.

(Study Session 13, LOS 38.e)

Question #126 of 126

Question ID: 463673

Which of the following terms *correctly* describes the risk to a private equity firm in long-term interest and exchange rates, and the provision that specifies the method of profit distribution between the limited partners (LPs) and general partner (GP), respectively?

Risk in long-term rates Profit distribution

- | | |
|--|------------------------|
| <input checked="" type="radio"/> A) Market risk | Distribution waterfall |
| <input checked="" type="radio"/> B) Capital risk | Carried interest |
| <input checked="" type="radio"/> C) Market risk | Carried interest |

Explanation

Market risk describes the risk of how changes in interest rate, exchange rate and other macroeconomic factors affect private equity investments.

The method of profit distribution between the LPs and GP is called distribution waterfall.

Carried interest is the GP's share of fund profits. Capital risk refers to the risk of capital depletion in a private equity fund and the risk of obtaining additional financing.

