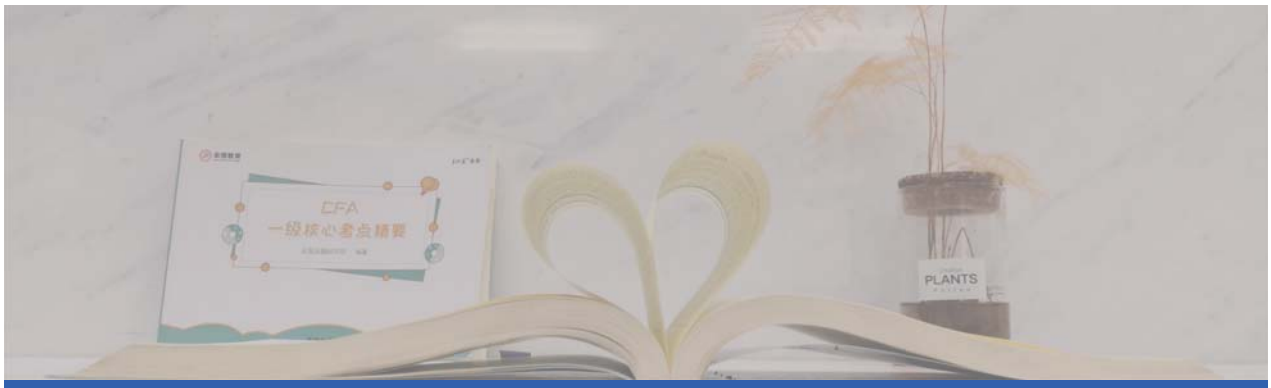


Alternative Investments

CFA一级培训项目

讲师： 韩霄

韩霄

10年授课，5,000+授课课时

资质证书

- 通过特许金融分析师（CFA）三级
- 注册会计师（CPA）
- 美国注册财务策划师（RFP）
- 量化金融分析师（AQF）
- 注册金融风险管理师（CFRM）

服务客户

- 中国银行、广发证券、中国建设银行、中国工商银行、国家进出口银行、交通银行、招商银行、农业银行、上海银行、太平洋保险、平安证券、兴业证券、国泰君安等。

工作经历

- **金程教育资深培训师、**资深证券分析师、美国注册财务策划师协会（大中华管理中心）特聘资深专家；
- 在财务分析、估值建模、兼并收购、投资理财、税务筹划、资产证券化等方面拥有丰富的管理与实战经验。曾就职于全球顶级咨询公司与会计师事务所，并担任某世界500强企业投资总监，主导并参与多个大型企业兼并收购及IPO项目，投资标的及服务的客户包括阿里巴巴、中国中铁、中国南车、TPG Capital、L Capital、野村证券等。
- 先后为数十家国内外银行、保险公司、证券公司、世界500强企业提供专业培训，备受好评，服务的客户包括中国银行、中国建设银行、国家进出口银行、国泰君安等多家大型金融机构。

Alternative Investments

1. Alternative Investment Features, Methods, and Structures
2. Alternative Investment Performance and Returns
3. Investments in Private Capital: Equity and Debt
4. Real Estate and Infrastructure
5. Natural Resources
6. Hedge Funds
7. Introduction to Digital Assets

中文精读

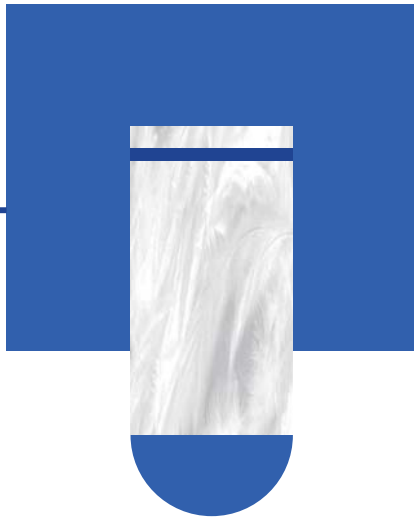
1. 另类投资的特点、方法和结构
2. 另类投资的表现和回报
3. 私人资本的投资：股票和债务
4. 房地产和基础设施
5. 自然资源
6. 对冲基金
7. 数字资产介绍

Framework

Module

Alternative Investment Features, Methods, and Structures

1. Alternative Investment Features
2. Alternative Investment Methods
3. Alternative Investment Structures



Alternative Investment Features

- describe features and categories of alternative investments

Introduction of Alternative Investments

- **Traditional vs. Alternative Investments**
  - Traditional: long-only investments in stocks, bonds, and cash, etc.
  - Alternative: other investment vehicles which fall outside the scope of traditional investments, extensive use of leverage.
- **Features that may distinguish alternative investments include the following:**
  - The need for specialized knowledge to value cash flows and risks;
  - Typically low correlation of returns with more traditional asset classes;
  - Illiquidity, long investment time horizons, and large capital outlays.
- **These features lead to the following alternative investment characteristics:**
  - Different investment structures due to the challenges of direct investment;
  - Incentive-based fees to address/minimize information asymmetry between managers and investors;
  - Performance appraisal challenges.

Introduction of Private Capital

- **Private Capital:** The broad term for funding provided to companies that is not sourced from the public markets.
  - **Private Equity:** refers to investment in privately owned companies or in public companies with the intent to take them private.
    - ✓ **Leveraged buyouts:** used in the mature life cycle stage or for firms in decline.
    - ✓ **Venture capital:** a specialized form of private equity whereby ownership capital is used for non-public companies in the early life cycle or startup phase.
  - **Private debt:**
    - ✓ **Private loans or bonds**;
    - ✓ **Venture debt:** is extended to early-stage firms with little or no cash flow;
    - ✓ **Distressed debt:** involves public or private debt of corporate issuers believed to be close to or in bankruptcy that could benefit from investors with capital restructuring skills.

Introduction of Real Assets

- **Real Assets**
  - **Tangible** physical assets, such as real estate and natural resources.
  - **Intangibles** as patents, intellectual property, and goodwill.
- **Real estate**
  - Borrowed or ownership capital in buildings or land.
- **Infrastructure**
  - Land, buildings and other long-lived fixed assets that are intended for public use and provide essential services.
  - Infrastructure may be developed either solely by governments or through a **public–private partnership** (PPP)in which private investors also have a stake.

Introduction of Real Assets

- **Natural Resources**
  - Less developed land includes farmland, timberland, or land for exploration for natural resource deposits, such as minerals or energy.
  - Expected price appreciation over time and cash flows.
- **Commodities**
  - Plant, animal, energy, and mineral products used in goods and services production.
  - Commodities do not themselves generate cash flows.
  - Investors seek to benefit from commodity price changes based on their future economic use.
  - With their lower correlation of returns with other asset classes, commodities also can serve as a countercyclical holding and as an inflation hedge.

Introduction of Real Assets

- **Other Real Alternative**
  - Include tangible collectible assets, such as fine art, wine, rare coins, watches, and other rare assets, as well as intangible assets, such as patents, and litigation, and so-called digital assets.
  - "Digital assets" is the umbrella term covering assets that can be created, stored, and transmitted electronically and have associated ownership or use rights, including cryptocurrencies and tokens.

Introduction of Hedge Fund

- **Hedge Funds**
  - Invest in public equities or publicly traded fixed-income assets, private capital, and/or real assets, but are distinguished by investment approach rather than by the investments themselves.
  - Frequent use of leverage, derivatives, short selling, and other investment strategies.
  - Investors may also invest in a portfolio of hedge funds, often referred to as a **fund of funds**.

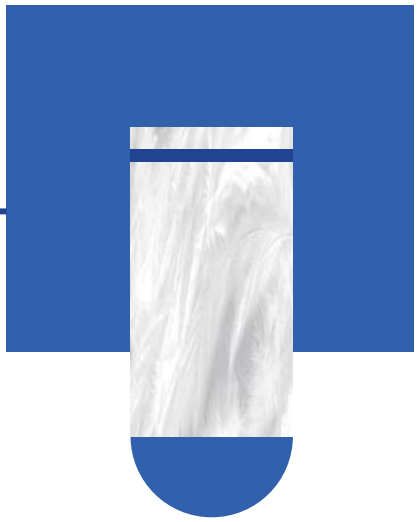
Summary

Alternative Investment Features

Introduction of Alternative Investments
Introduction of Private Capital
Introduction of Real Assets
Introduction of Hedge Fund

Alternative Investment Methods

- compare direct investment, co-investment, and fund investment methods for alternative investments



Investment Methods of Alternative Investments

- **Fund Investing (indirect)**
  - The investor contributes capital to a fund, and the fund identifies, selects, and makes investments on the investor's behalf.
- **Co-Investing (direct & indirect)**
  - The investor invests in assets indirectly through the fund but also possesses rights to invest directly in the same assets.
- **Direct Investing (direct)**
  - Occurs when an investor makes a direct investment in an asset without the use of an intermediary.
  - Typically reserved for larger and more sophisticated investors and usually applies to private equity and real estate.

Fund Investing

- **Fund Investing**
  - **Advantages**
    - ✓ Fund managers offer investment services and expertise;
    - ✓ Lower level of investor involvement compared with the direct and co-investing methods;
    - ✓ Access to alternative investments without possessing a high degree of investment expertise;
    - ✓ Potentially valuable diversification benefits;
    - ✓ Lower minimum capital requirements.
  - **Disadvantages**
    - ✓ Costly management and performance fees;
    - ✓ Investor must conduct thorough due diligence when selecting the right fund because of the wide dispersion of fund manager returns.

Co-Investing

- **Co-Investing**
  - **Advantages**
    - ✓ Investors can learn from the fund's process to become better at direct investing;
    - ✓ Reduced management fees;
    - ✓ Allows more active management of the portfolio compared with fund investing and allows for a deeper relationship with the manager.
  - **Disadvantages**
    - ✓ Reduced control over the investment selection process compared with direct investing;
    - ✓ May be subject to adverse selection bias;
    - ✓ Requires more active involvement compared with fund investing, which can be challenging if resources and due diligence experience are limited.

Direct Investing

- **Direct Investing**
  - **Advantages**
    - ✓ Avoids paying ongoing management fees to an external manager;
    - ✓ Greatest amount of flexibility for the investor;
    - ✓ Highest level of control over how the asset is managed.
  - **Disadvantages**
    - ✓ Requires more investment expertise and a higher level of financial sophistication;
    - ✓ Less access to a fund's ready diversification benefits or the fund manager's sourcing network;
    - ✓ Requires greater levels of due diligence because of the absence of a fund manager;
    - ✓ Higher minimum capital requirements;
    - ✓ Fund managers may enjoy reputational benefits that see them secure participation in attractive investments unavailable to certain direct investors operating on their own behalf.

Investment Methods of Alternative Investments

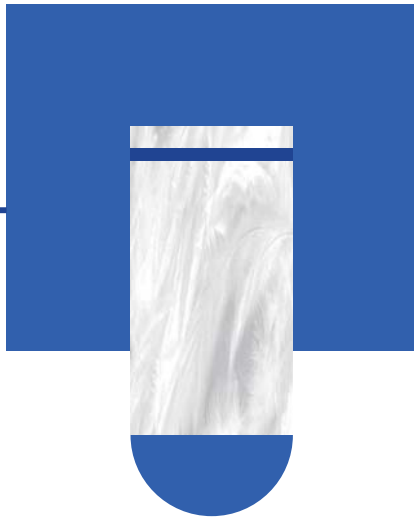
- **Due Diligence for Fund Investing**
  - **Manager selection** is a critical factor in portfolio performance.
- **Due Diligence for Direct Investing**
  - Conduct the **greatest amount of or most thorough investigation** into the target asset or business.
- **Due Diligence for Co-Investing**
  - **Indirect:** In co-investing, investors often rely heavily on the due diligence conducted by the fund manager.
  - **Direct** investing due diligence may be **more independent than co-investing** due diligence.
    - ✓ Because the direct investing team:
      - ☐ is typically introduced to opportunities by third parties;
      - ☐ they have more control over the due diligence process.

Summary
Alternative Investment Methods

Investment Methods of Alternative Investments
Fund Investing
Co-Investing
Direct Investing

Alternative Investment Structures

- describe investment ownership and compensation structures commonly used in alternative investments



Ownership Structures

- **Most Common Structure: Partnership**
  - **Limited partner (LP):** LP is the investors who understand and able to assume the risks in the investment.
    - ✓ LP **owns a fractional interest (share of the partnership)** based on their investment and as agreed to by the partners.
  - **General partner (GP):** GP runs the fund.
  - Investments in limited partnerships **are less regulated** than offerings to the general public.
  - A **limited partnership agreement (LPA)** establishes terms of an LP as governed by a limited partnership agreement.
    - ✓ Include the distribution of profits and losses; manager roles and responsibilities, investment criteria and restrictions; terms governing transfers, withdrawals, and dissolution of the agreement.
  - Adjustments to LP terms are sometimes made to address the unique legal, regulatory, or reporting requirements of a specific investor. A supplemental document known as a **side letter** is issued between a GP and one or more LPs with terms that override or modify the original LPA terms.

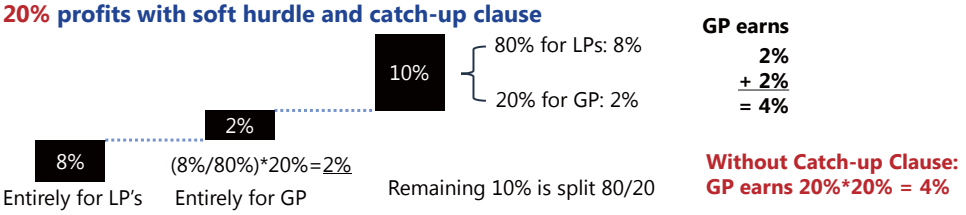
Compensation Structures

- **Management Fee**
  - Based on **assets under management** (for hedge funds) or **committed capital** (for PE funds).
- **Performance Fee (incentive fee, carried interest)**
  - Based on profits net of (or before) management fee.
  - E.g. **"2 and 20"**
    - ✓ 2% management fee.
    - ✓ 20% incentive fee for hedge funds.
  - **Hurdle rate**
    - ✓ A minimum rate of return that the GP must exceed in order to earn the performance fee.
    - ✓ **Hard** hurdle rate
    - ✓ **Soft** hurdle rate
  - **High water mark**→ highest value reported
    - ✓ Protect clients from paying twice for the same performance.

Compensation Structures

- **Catch-up Clause**
  - For a GP earned 20% on an investment with "2 and 20" fee structure and hurdle rate of 8%, LP receives the entirety of the first 8% profit, the GP would receive the entirety of the next 2% profit—because 2% out of 10% amounts to 20% of the profits accounted for so far, as the catch-up clause stipulates—and the remaining 10% would be split 80/20 between the LPs and the GP.

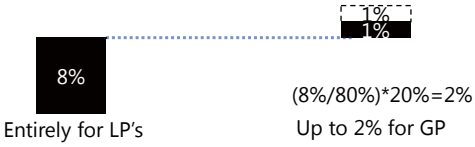
20% profits with soft hurdle and catch-up clause



GP earns
2%
+ 2%
= 4%

Without Catch-up Clause:
GP earns 20%*20% = 4%

9% profits with soft hurdle and catch-up clause



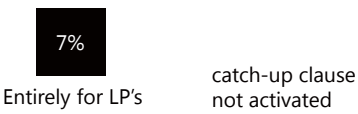
GP earns
1%

Without Catch-up Clause:
GP earns 9%*20% = 1.8%

Compensation Structures

- **Catch-up Clause**

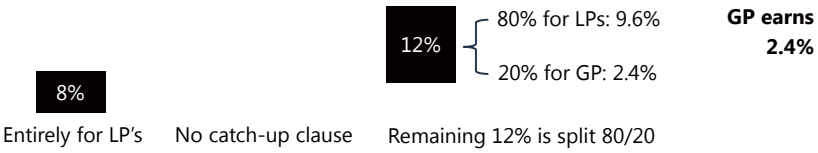
7% profits with soft hurdle and catch-up clause



GP earns
0%

Without Catch-up Clause:
GP earns 0*20% = 0%

20% profits with hard hurdle



GP earns
2.4%

Compensation Structures

- **Waterfall**
  - Represents the distribution method that defines the order in which allocations are made to LPs and GPs.
  - **Deal-by-deal (American) waterfalls**
    - ✓ Performance fees are collected on a per-deal basis.
    - ✓ **More advantageous** to the **GP**.
  - **Whole-of-fund (European) waterfalls**
    - ✓ Performance fees occur at the aggregate fund level (i.e., after all investments have been exited).
    - ✓ **More advantageous** to the **LP**.
- **Clawback Provision**
  - A clawback provision reflects the **right of LPs** to reclaim part of the GP's performance fee.

Example

Compensation Structures

- An alternative investment fund's hurdle rate is a:

  A. rate unrelated to a catch-up clause.

  B. tool to protect clients from paying twice for the same performance.

  C. minimum rate of return the GP must exceed in order to earn performance fee.

- **Solution: C.**

Example

Compensation Structures

- The distribution method by which profits generated by a fund are allocated between LPs and the GP is called:

  A. a waterfall.

  B. an 80/20 split.

  C. a fair division.

- **Solution: A.**

Example

Compensation Structures

- A PE fund invests $15 million in a nascent luxury yacht manufacturer and $17 million in a new casino venture. The yacht manufacturer generates a $9 million profit but the casino generates a $10 million loss. Incentive fee is 20% of the profits. (assuming no clawback applies)

	Aggregate	Yacht Company	Casino Venture
Investment	$32 m	$15 m	$17 m
Profit/Loss	-$1 m	$9 m	-$10 m
Incentive by Deal		20% × $9m = $1.8m	$0 m
Total Incentive	$0 m	$1.8 m	

- If there is a clawback provision, then there would be a clawback of that fee for the investor when the casino venture loss is eventually realized, still resulting in no overall incentive fee.

Summary

Alternative Investment Structure

Ownership Structures
Compensation Structures

Summary

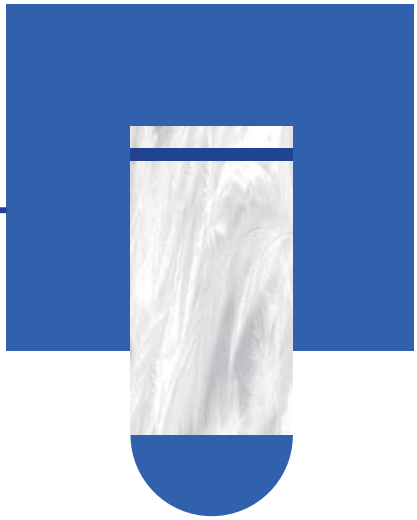
Module: Alternative Investment Features, Methods, and Structures

Alternative Investment Features
Alternative Investment Methods
Alternative Investment Structures

Module

Alternative Investment Performance and Returns

1. Alternative Investment Performance
2. Alternative Investment Returns



Alternative Investment Performance

- describe the performance appraisal of alternative investments

Performance Appraisal

- **When appraising alternative investments, four areas to focus on include:**
  - the life cycle phase of the investment;
  - the amount of borrowed funds used to maintain the market position;
  - the valuation of the assets;
  - the fee structure of the fund.

Investment Life Cycle

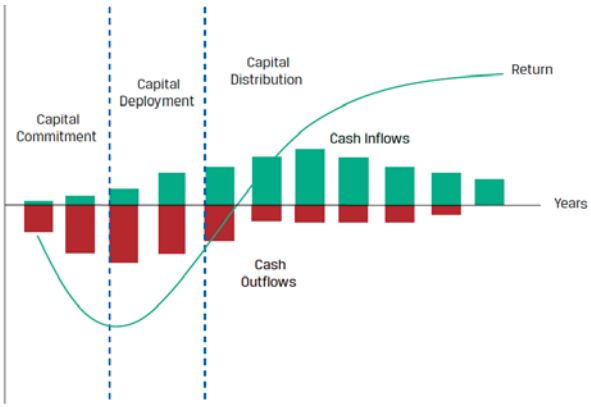
- **Investment Life Cycle**
  - Alternative investments usually involve a longer investment life cycle with distinct phases characterized by net cash outflows and inflows that complicate periodic return comparisons.
  - **Capital commitment:**
    - ✓ Alternative managers identify and select appropriate investments with either an immediate or a delayed commitment of capital (known as a capital call).
    - ✓ Returns are usually negative over this phase because fees and expenses are immediately incurred prior to capital deployment and assets may generate little or no income during this first phase.

Investment Life Cycle

- **Investment Life Cycle**
  - **Capital deployment:**
    - ✓ Alternative managers deploy funds to engage in construction or make property improvements in the case of real estate or infrastructure, incur expenses in the turnaround phase of a mature company in the case of private equity, or initiate operations for a startup using venture capital.
    - ✓ Cash outflows typically exceed inflows, with management fees further reducing returns.
  - **Capital distribution:**
    - ✓ When the turnaround strategy, startup phase, or property improvements are completed and if the investment is successful, the underlying assets appreciate in price and/or generate income in excess of costs, causing fund returns to accelerate.
    - ✓ The fund may realize substantial capital gains from liquidating or exiting its investments, which may involve an initial public offering (IPO) for venture capital or the sale of properties in the case of real estate.

Investment Life Cycle

- **J-curve Effect**
  - Initial negative return in the capital commitment phase followed by an acceleration of returns through the capital deployment phase. Returns often level off as capital is distributed to investors, investments are sold, and the fund is closed.



Multiple of Invested Capital

- Private equity and real estate investing involve long holding periods.
- Private equity funds can appear to have *low volatility* because of the **lag** in their mark-to-market process.
  - IRR approach
    - ✓ Key metric used to assess longer-term alternative investments in the private equity and real estate.
    - ✓ Assumptions:
      - a financing rate to use for outgoing cash flows.
      - a reinvestment rate to use for incoming cash flows.
  - Multiple of invested capital (MOIC)
    - ✓ MOIC = (Realized value of investment + Unrealized value of investment) / (Total amount of invested capital)
    - ✓ Total value of all distributions and residual asset values relative to an initial total investment.
    - ✓ Completely ignores the timing of cash flows.

Use of Borrowed Funds

- **Use of Borrowed Funds**
  - Financial leverage has the effect of magnifying both gains and losses by allowing investors to take a market position that is larger than the capital committed.
  - r_L = Leveraged portfolio return/Cash position = $[r\times(V_c+V_b)-(V_b\times r_b)]/V_c$
  - $r_L = r + V_b/V_c(r - r_b)$

Valuation

- **Fair Value Hierarchy**

Level	Description	Sample Application and Method
Level 1	Quoted prices in active markets for identical asset/liability that may be accessed as of measurement date	Exchange-traded public equity securities (observed closing market price)
Level 2	Inputs other than quoted market prices in Level 1 that are directly or indirectly observable for an asset/liability	Over-the-counter interest rate derivatives (pricing model using quoted market prices)
Level 3	Unobservable inputs are used to measure fair value for asset/liability in which there is little, if any, market activity as of the measurement date	Private equity or real estate investments (cash flow projection models with reasonably available market participant assumptions)

Valuation

- **Problems Related to "Mark-to-Model" Valuation (in-house valuation)**
  - A model may reflect an imperfect theoretical valuation and not a true liquidation value.
  - Returns may be smoothed or overstated, and the volatility of returns understated.
  - Models should be independently tested, benchmarked, and calibrated to industry accepted standards to ensure consistency;
  - Develop procedures for in-house valuations to prevent conflicts of interests affecting estimates.

Fees

- **Alternative investment fees also vary from those for common asset classes:**
  - Typically involve a flat management fee;
  - Often levy additional performance fees based on a percentage of periodic fund returns.

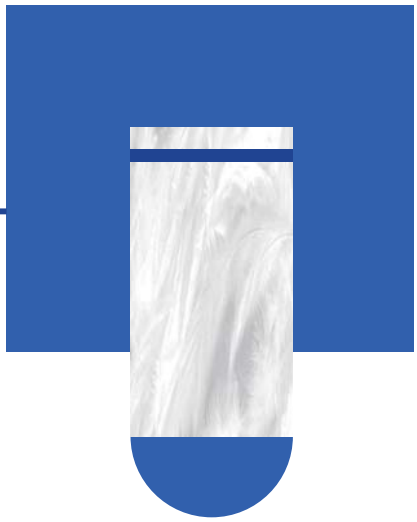
Summary

Alternative Investment Performance

Performance Appraisal
Investment Life Cycle
Multiple Of Invested Capital
Use of Borrowed Funds
Valuation
Fees

Alternative Investment Returns

- calculate and interpret alternative investment returns both before and after fees



Redemptions

- **Redemptions May Magnify Losses**
  - Redemption occurs when a hedge fund is performing poorly;
    - ✓ When drawdown (reduction in NAV) occurs, investors may require liquidation of their positions and incur transaction costs, further magnifying the losses.
  - Ways to prevent redemptions:
    - ✓ Redemption fees;
    - ✓ Notice periods;
    - ✓ Lockup periods;
    - ✓ Gate.

Custom Fee Arrangements

- **Custom Fee Arrangements**
  - **Fees based on liquidity terms and asset size**
    - ✓ Charge different rates depending on the liquidity terms (longer lockups are generally associated with lower fees).
    - ✓ Discount their fees for larger investors or for placement agents who introduced these investors.
  - **Founders' shares**
    - ✓ As a way to entice early participation in start-up and emerging hedge funds.
    - ✓ Entitle investors to a lower fee structure.
  - **"Either/or" fees**
    - ✓ Managers agree either to charge a 1% management fee (simply to cover expenses during down years) or to receive a 30% incentive fee above a mutually agreed-on annual hurdle (to incentivize and reward managers during up years), whichever is greater.

Alternative Investment Return Calculations

- **Return calculations**
  - Vary among alternative investments based on the form of the investments.
  - The GP's return in currency terms (R_{GP}) is as follows:
    - ✓ $R_{GP} = (P_1 \times r_m) + \max[0, (P_1 - P_0) \times p]$
  - Investor's periodic rate of return, r_i, as follow:
    - ✓ $R_i = (P_1 - P_0 - R_{GP}) / P_0$

Example

Calculating Fees and Returns

- A high water mark of £150 million was established two years ago for a British hedge fund. The end-of-year value before fees for last year was £140 million. This year's end-of-year value before fees is £155 million. The fund charges "2 and 20." Management fees are paid independently of incentive fees and are calculated on end-of-year values. What is the total fee paid this year?

  A. £3.1 million.

  B. £4.1 million.

  C. £6.1 million.

- **Solution: B.**
  - Management fee is £155 million × 0.02 = £3.1 million.
  - Incentive fee is (£155 million – £150 million) × 0.20 = £1.0 million.
  - Total fee is £3.1 million + £1.0 million = £4.1 million.

Relative Alternative Investment Returns and Survivorship Bias

- Investors seeking higher risk-adjusted returns with low correlation with common asset classes in alternative investments often track their performance based on **relative returns**.
  - As is the case for more common asset classes, returns on individual alternative investments are usually **compared to a benchmark** of investments with similar features.
- **Survivorship and Backfill Bias**
  - Return comparisons between hedge fund of the same vintage year on an annual or "since inception" basis lead to more accurate results.
  - Survivorship bias:
    - ✓ The exclusion of failed funds from a given benchmark is a form of selection bias that can lead investors to overly optimistic return expectations.
  - Backfill bias:
    - ✓ About how and when hedge fund returns are initially included in a benchmark index.

Summary

Alternative Investment Returns

Redemptions
Custom Fee Arrangements
Alternative Investment Return Calculations
Relative Alternative Investment Returns and Survivorship Bias

Summary

Model: Alternative Investment Performance and Returns

Alternative Investment Performance
Alternative Investment Returns

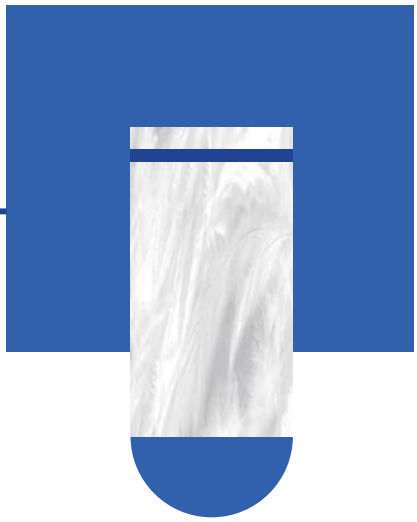
Module

Investments in Private Capital: Equity and Debt

1. Private Equity Investment Characteristics
2. Private Debt Investment Characteristics
3. Diversification Benefits of Private Capital

Private Equity Investment Characteristics

- explain features of private equity and its investment characteristics



Introduction of Private Equity

- **Private Capital:** the broad term for funding provided to companies that is not sourced from the public markets.
  - **Private Equity:** Investors participate in private equity through direct investments or indirectly through private equity funds.
    - ✓ **Leveraged buyouts (LBOs):** acquire companies with a significant percentage of the purchase price financed through debt.
      - **Management buyout (MBO),** the current management team participates in the acquisition.
      - **Management buy-in (MBI),** the current management team is replaced with the acquiring team involved in managing the company.
      - Assets of the target company as the collateral for the debt;
      - The debt becomes part of the capital structure of the target company.
    - ✓ **Venture capital:** Invest in private companies with high growth potential.
    - ✓ **Growth capital (growth equity):** Stage between VC and Maturity.

Categories of Private Equity - LBOs

- **Characteristics of Attractive Target Companies for LBOs**
  - **Undervalued/depressed stock price**
    - ✓ The intrinsic value of the company is perceived higher than market price. Private equity firms are willing to pay a premium to the market price to secure shareholder approval.
  - **Willing management**
    - ✓ Existing management is looking for a deal.
  - **Inefficient companies**
  - **Strong and sustainable cash flow**
    - ✓ Cash flow is necessary to make interest payments on the increased debt load.
  - **Low leverage**
    - ✓ Easier for PE firms to utilize debt.
  - **Assets**
    - ✓ Physical assets can be used as securities.

Categories of Private Equity – Venture Capital

Stage	Pre-seed	Seed	Early stage | Later stage
Investors	☐ Founders ☐ Friends and family ☐ Angel investors	☐ Seed funds ☐ Angel investors ☐ Venture capital funds	☐ Venture capital funds ☐ Corporate venture funds ☐ Private equity investors ☐ Strategic investors
Typical investment amount	USD5k–USD500k	USD25k–USD5mil	USD5mil+
Source of capital	Mainly Individuals	Funds	☐ Institutional investors ☐ Family offices ☐ Strategic investors

Categories of Private Equity – Venture Capital

- **The Stage of Venture Capital Investing**
  - **Pre-seed capital or angel investing**: At the idea stage, funds may be used to develop a business plan and to assess market potential. The amount of financing here is typically small and sourced from individuals.
  - **Seed-stage financing, or seed capital:** Generally supports product development and marketing efforts, including market research. This is the first stage at which VC funds usually invest.
  - **Early-stage financing, or start-up stage financing:** Goes to companies moving toward operation but prior to commercial production or sales, in both of which early-stage financing may be injected to initiate.
  - **Later-stage financing:** After commercial production and sales have begun but before an IPO. Funds may be used to support initial growth, a major expansion (such as a physical plant upgrade), product improvements, or a major marketing campaign**.**
  - **Mezzanine stage**: Prepares a company to go public as it continues to expand capacity and enhance its growth trajectory.

Private Equity Exit Strategies

- **Common Exit Strategies:**
  - **Trade sale**: Sell a portfolio company to a competitor or another strategic buyer.
  - **IPO**: Sell all or some shares of a portfolio company to the public.
  - **Special purpose acquisition company (SPAC)**: The special purpose acquisition company technique starts as a shell company via an IPO through which sponsors raise a blind pool of cash aimed for merger or acquisition with private firms.
  - **Recapitalization**: The company issues debt to fund a dividend distribution to equity holders (the fund). This is not an exit, in that the fund still controls the company, but is often a step toward an exit.
  - **Secondary sale:** Sell a portfolio company to another private equity firm or a group of investors.
  - **Write-off/liquidation:** Reassess and adjust to take losses from an unsuccessful outcome.

Example

Private Equity

- Private equity funds are most likely to use:

  A. merger arbitrage strategies.

  B. leveraged buyouts.

  C. market-neutral strategies.

- **Solution: B.**
  - The majority of private equity activity involves leveraged buyouts.
  - Merger arbitrage and market neutral are strategies used by hedge funds.

Summary

Private Equity Investment Characteristics

Introduction of Private Equity

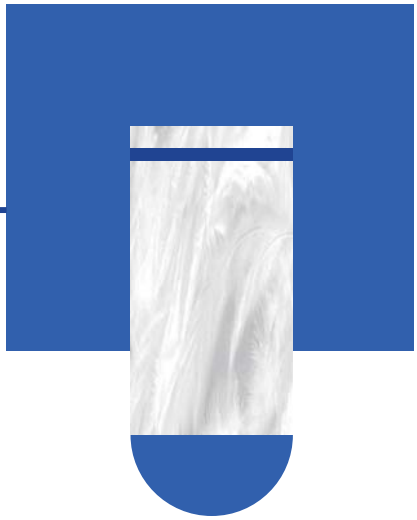
Categories of Private Equity - LBOs

Stages of Venture Capital

Private Equity Exit Strategies

Private Debt Investment Characteristics

- explain features of private debt and its investment characteristics



Introduction of Private Debt

- **Private Debt:** Private debt primarily refers to the various forms of debt provided by investors directly to private entities.
  - Direct Lending
  - Mezzanine Debt
  - Venture Debt
  - Distressed Debt
  - Other Private Debt Strategies
    - ✓ Collateralized loan obligations (CLOs)
    - ✓ Unitranche debt
    - ✓ Infrastructure debt
    - ✓ Real estate debt
    - ✓ Specialty loans

Categories of Private Debt

- **Direct Lending**
  - Providing capital directly to borrowers by a small number of investors and subsequently receiving interest.
  - Many firms may also provide debt in the form of a **leveraged loan,** which means borrow money to finance the debt and then extends to another borrower.
- **Mezzanine Debt**
  - Refers to private credit that is subordinated to senior secured debt but is senior to equity in the borrower's capital structure.
  - With **additional features,** such as **warrants** or **conversion rights,** which provide equity participation to lenders/investors.
- **Venture Debt**
  - Provided to start-up or early-stage companies with venture capital backing that may be generating little or negative cash flow.
  - **Carry additional features** that grant the lender rights **to purchase equity** in the borrowing company under certain circumstances.

Categories of Private Debt

- **Distressed Debt**
  - Entails buying the debt of mature companies with financial difficulty.
  - Investors buy debt in expectation of both the company and its debt increasing in value by restructure and revive.
- **Collateralized Loan Obligations (CLOs)**
  - Leveraged structured vehicles that are collateralized by a portfolio of loans covering a diverse range of tranches, issuers, and industries.
  - CLO manager divides the pool into various tranches (different interest rate) of debt and equity that range in seniority and security and sell each tranche to different investors according to their **risk profiles**.
- **Unitranche Debt**
  - Consists of a hybrid or blended loan structure that combines different tranches of secured and unsecured debt into a single loan with a **single, blended interest rate.**
- **Specialty Loans**
  - Provide specialty loans, where debt is extended to niche borrowers in specific situations.

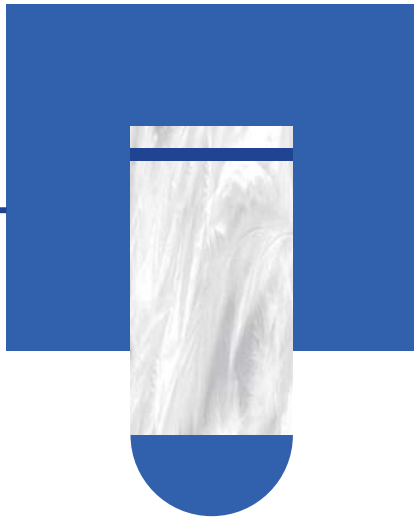
Summary

Private Debt Investment Characteristics

Introduction of Private Debt
Categories of Private Debt

Diversification Benefits of Private Capital

- describe the diversification benefits that private capital can provide

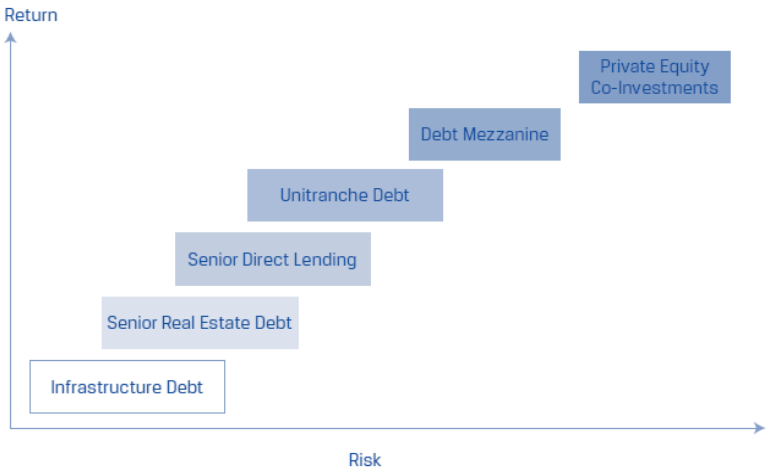


Risk/Return Characteristics of Private Capital

- **Performance of private capital**
  - Since the performance of private debt and private equity greatly depend on the specific phase of a company's life cycle, performance, and risk, comparison of public debt and equity may not be appropriate.
    - ✓ Investing in a start-up carries greater risk than investing in a well-established firm.
    - ✓ Investing in a company in a declining or disintermediated industry is unlikely to offer positive return over longer time horizons.
    - ✓ Performance risk of a continuous investment in public equity and debt can easily be hedged away.
  - Each private equity fund carries a vintage year, typically defined as the year in which the fund makes its first investment.
    - ✓ Typically, a private equity fund operates over a 10- to 12-year period, which is often segmented into an initial investment period and a subsequent harvesting period.

Risk/Return Characteristics of Private Capital

- **Private Capital Risk and Return Levels by Category**



Summary

Diversification Benefits of Private Capital

Risk/Return Characteristics of Private Capital

Summary

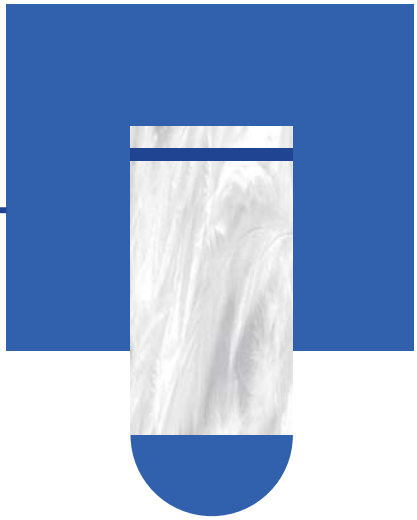
Module: Investments in Private Capital: Equity and Debt

Private Equity Investment Characteristics
Private Debt Investment Characteristics
Diversification Benefits of Private Capital

Module

Real Estate and Infrastructure

1. Real Estate Features
2. Real Estate Investment Characteristics
3. Infrastructure Investment Features
4. Infrastructure Investment Characteristics



Real Estate Features

- explain features and characteristics of real estate

Description of Real Estate

- **The majority of real estate property may be classified as either residential or commercial**
  - Residential real estate
    - ✓ Consists of individual single-family detached homes and multi-family attached units.
  - Commercial real estate
    - ✓ Includes primarily office buildings, retail shopping centers, commercial and residential rental properties, and warehouses.
    - ✓ In contrast to the owner-occupied market, rental properties are leased to tenants.

Features of Real Estate Investments

- **Real estate is uniquely different from other asset classes in several ways:**
  - The initial investment is typically large.
  - Real estate is heterogeneous and is uniquely characterized in terms of location, age, tenant credit mix, lease term, and market demographics.
  - There are multiple types of real estate investment alternatives available: direct and indirect investment options spanning the spectrum from relatively liquid investments in stable, income-producing properties to illiquid investments over a long development life cycle across the purchase, construction/upgrade, occupancy, and sales phases.
  - Diversification across all different types of real estate investment alternatives may be difficult to attain.
  - Private market indexes replicating the performance of real estate are not directly investable.

Features of Real Estate Investments

- **The price discovery process in the private real estate markets is opaque, for multiple reasons:**
  - Historical prices may not reflect prevailing market conditions.
  - Transaction costs are typically high.
    - ✓ Buying and selling real estate can be a time-consuming process.
  - Transaction activity may be limited in certain markets due to either supply or demand conditions.

Forms of Real Estate Investing

- **Basic Forms of Real Estate Investments and Examples**

	Equity	Debt
Private	☐ Direct ownership of real estate: ownership through sole ownership, joint ventures, or real estate limited partnerships; ☐ Indirect ownership via real estate funds; ☐ Private REITs.	☐ Mortgages debt; ☐ Construction loans; ☐ Mezzanine debt.
Public	☐ Publicly traded shares (Construction, operating, development); ☐ Public REITs; ☐ Mutual funds; ☐ ETFs.	☐ MBS (residential and commercial); ☐ Collateralized mortgage obligations; ☐ Covered bonds; ☐ Mortgage REITs; ☐ Mortgage ETFs.

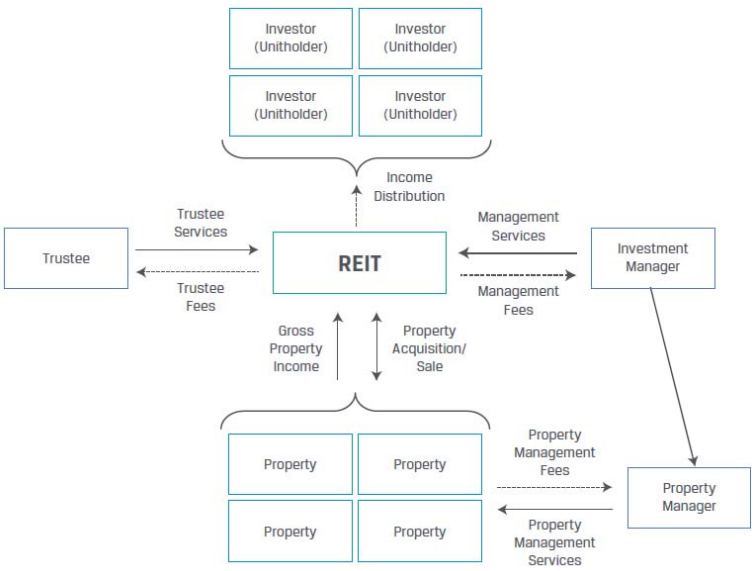
Direct Private Investing

- **Direct private investing**
  - Involves purchasing a property and originating debt for one's own account.
- **There are distinct advantages to owning real estate directly for property investors:**
  - Control;
  - Tax benefits: The owners can reduce their taxable income using non-cash property depreciation expenses and tax-deductible interest expenses;
  - Diversification: Real estate has exhibited low correlation with other asset classes.
- **There are also disadvantages to investing directly in property:**
  - Complexity;
  - Need for specialized knowledge;
  - Significant capital needs;
  - Concentration risk;
  - Lack of liquidity.

Indirect Private Investing

- **Indirect private investing**
  - Different investors to acquire one or several properties, the exposure is indirect through a variety of investment vehicles.
  - Can be public or private: Limited partnerships, mutual funds, equities, REITs, and exchange-traded funds (ETFs).
- **Three main forms of REIT**
  - Equity REITs: Invest in properties outright or through partnerships and joint ventures;
  - Mortgage REITs: Underwrite loans to real estate (mortgages) or invest in MBS;
  - Hybrid REITs: Invest in both these types.
- **Advantages of REIT**
  - The main appeal of the REIT structure is the elimination of double corporate taxation;
  - Greater transparency;
  - Not forced to sell the company's underlying real estate like open-end funds experiencing mass redemptions;
  - REITs have the know-how to manage the properties.

Indirect Private Investing



Example

Real Estate Features

- Which of the following statements is true regarding mortgage-backed securities?

  A. Insurance companies prefer the first-loss tranche.

  B. When interest rates rise, prepayments will likely accelerate.

  C. When interest rates fall, the low-risk senior tranche will amortize more quickly.

- **Solution: C.**
  - When interest rates decline, borrowers are likely to refinance their loans at a faster pace than before, resulting in faster amortization of each MBS tranche, including the senior tranche, which is the lowest-risk tranche.

Example

Real Estate Features

- Which of the following statements is true for REITs?

  A. According to GAAP, equity REITs are exempt from reporting earnings per share.

  B. Though equity REIT correlations with other asset classes are typically moderate, they are highest during steep market downturns.

  C. The REIT corporation pays taxes on income, and the REIT shareholder pays taxes on the REIT's dividend distribution of after-tax earnings.

- **Solution: B.**
  - Real estate investments, including REITs, provide important portfolio benefits due to moderate correlation with other asset classes. However, there are periods when equity REIT correlations with other securities are high, and their correlations are highest during steep market downturns.

Summary

Real Estate Features

Description of Real Estate
Features of Real Estate Investments
Forms of Real Estate Investing
Direct Private Investing
Indirect Private Investing

Real Estate Investment Characteristics

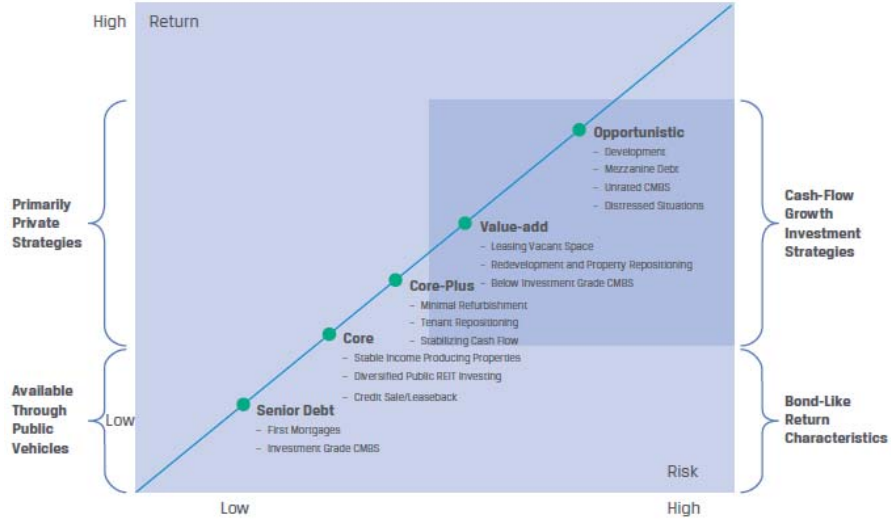
- explain the investment characteristics of real estate investments

Source of Returns

- **Return on real estate investments comes from income or asset appreciation or both.**
  - Income-producing: lower-risk, bond-like cash flows from leases.
  - Capital appreciation: higher-risk, equity-like speculative returns from realizing value from development projects or price appreciation.

Source of Returns

- **The Real Estate Risk-Return Spectrum**



Real Estate Investment Diversification Benefits

- **Real Estate Investment Diversification Benefits**
  - Real estate markets around the world can be highly idiosyncratic and often have low correlations with traditional asset classes.
  - Investment in real estate can provide diversification for overall portfolio, but during certain market conditions, equity REIT correlations with market benchmarks increase, particularly during steep market downturns.

Summary

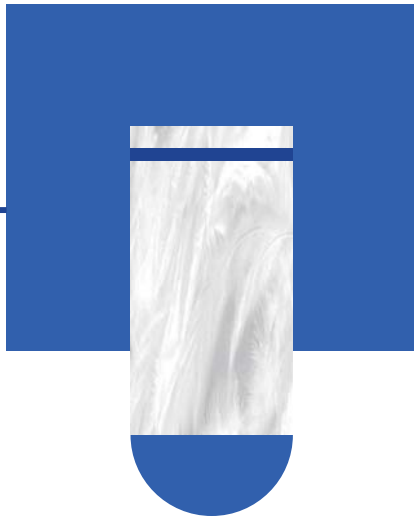
Real Estate Investment Characteristics

Source of Returns

Real Estate Investment Diversification Benefits

Infrastructure Investment Features

- explain features and characteristics of infrastructure



Introduction of Infrastructure

- **Definition:** real, capital intensive, long-lived assets, which are intended for public use and provide essential services.
- **Public–private partnership (PPP) approach (common):** Governments and investors each have a stake.
- **Categories of Infrastructure Investments**
  - Economic infrastructure assets support economic activity. (E.g. transportation assets, information & communication technology (ICT) assets, and utility and energy assets)
  - Social infrastructure assets are directed toward human activities.

Stages of Infrastructure Development

- **Stages of Infrastructure Development**
  - Greenfield investments, developing new assets and new infrastructure, are opportunistic investments.
  - Brownfield investments expand existing facilities and may involve privatization of public assets or a sale leaseback of completed greenfield projects.
  - Secondary-stage investments invest in existing infrastructure facilities or fully operational assets that do not require further investment or development over the investment horizon.

Forms of Infrastructure Investments

- **Forms of Infrastructure Investments**
  - Direct investment in the underlying infrastructure.
    - ✓ Provides control and the opportunity to capture full value.
  - Indirect investment:
    - ✓ Include infrastructure funds (similar in structure to private equity funds);
    - ✓ Infrastructure ETFs, and holding equity in publicly traded infrastructure providers, or master limited partnerships (MLPs);
    - ✓ Publicly traded infrastructures securities.

Example

Infrastructure Investment Features

- Greenfield investments in infrastructure are *most accurately* described as investments in assets:

  A. that are operating profitably.

  B. that have not yet been constructed.

  C. related to environmental technology.

- **Solution: B.**

Summary

Infrastructure Investment Features

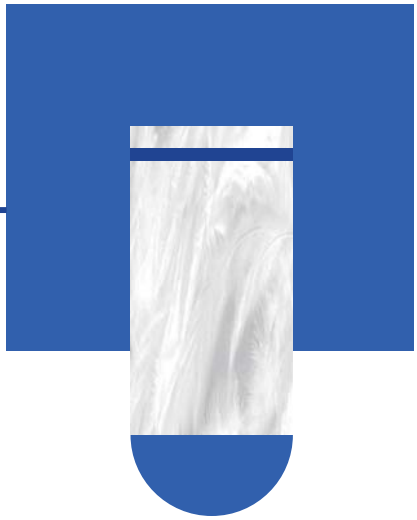
Introduction of Infrastructure

Stages of Infrastructure Development

Forms of Infrastructure Investments

Infrastructure Investment Characteristics

- explain the investment characteristics of infrastructure investments



Risk/Return Characteristics of Infrastructure

Private Infrastructure Fund Illustrative Target Returns		
High-Risk Profile	**Medium-Risk Profile**	**Low-Risk Profile**
Greenfield projects without guarantees of demand upon completion—e.g., variable electricity prices, uncertain traffic on roads and through ports	Mostly brownfield assets (with some capital expenditure requirements) and some greenfield assets (with limited construction and demand risk)	Brownfield assets with mitigated risks—e.g., fully constructed with contracted/regulated revenues
Located in OECD countries and emerging markets	Located primarily in OECD countries	Located in the most stable OECD countries
High weighting to capital appreciation	Mix of yield and capital appreciation	High weighting to current yield
Target equity returns of 14%+	Target equity returns of 10%–12%	Target equity returns of 6%–8%

Risks of Infrastructure Investments

- **Risks of Infrastructure Investments**
  - Most infrastructure funds gravitate toward the medium- and lower-risk profiles;
  - Risk depends on underlying asset;
  - An inherent risk to many infrastructure investments is regulatory risk.

Summary

Infrastructure Investment Characteristics

Risk/Return Characteristics of Infrastructure
Risks of Infrastructure Investments

Summary

Module: Real Estate and Infrastructure

Real Estate Features
Real Estate Investment Characteristics
Infrastructure Investment Features
Infrastructure Investment Characteristics

Module

Natural Resources

1. Natural Resources Investment Features
2. Commodity Investment Forms
3. Natural Resource Investment Risk, Return, and Diversification

Natural Resources Investment Features

- explain features of raw land, timberland, and farmland and their investment characteristics

Introduction of Natural Resources

- **Natural Resources**
  - Natural resources comprise different production inputs that are basic to the economy and everyday life:
    - ✓ Plants and animals (i.e., soft commodities); energy and minerals (hard commodities); and metals and industrial goods used to manufacture goods and produce services.
  - **Inflation-protected** investments
- **Types of Natural Resources**
  - **Commodities:** Physical products that can be standardized on quality, location, and delivery for the purpose of investing.
  - **Timberland:** Timberland offers an income stream based on the sale of trees, wood, and other timber products and has been not highly correlated with other asset classes.
  - **Farmland**: Farmland consists mainly of row crops that are planted and harvested and permanent crops that grow on trees (e.g., nuts) or vines (e.g., grapes).

Raw Land, Farmland and Timberland

	Raw land	Farmland	Timberland
Return drivers	Price of land	Harvest quantities Commodity prices Price of land	Biological growth Harvest quantities Lumber prices Price of land
Source of direct revenue	Price appreciation Lease revenue	Sale of crops and other agricultural products Price appreciation Lease revenue	Sale of trees, wood, and other timber products Price appreciation Lease revenue
Value	Physical location	Physical location Growth cycle Soil quality	Physical location Quality of timber Phase in timber Production
Main risks	Best alternative use	Weather factors and climate change Biological factors, diseases	
Owners	Mostly institutional, some individual	Mostly individuals, some institutional	Mostly institutional, some individual
Ownership structure	Direct ownership, partnership	Direct ownership, partnership, REIT	Direct ownership, partnership, REIT, TIMO

Description of Timberland and Farmland

- **Timber (trees)** can be grown and easily "stored" by simply **not harvesting**.
  - The three primary return:
    - ✓ biological growth;
    - ✓ changes in spot prices and futures prices of lumber (cut wood);
    - ✓ changes in the price of the underlying land.
- **Farm products must be harvested** when ripe, so there is little flexibility in the production process.
  - The three primary return:
    - ✓ harvest quantities;
    - ✓ commodity prices (e.g., the price of corn);
    - ✓ land price changes.
- Both farmland and timberland consume carbon as part of the plant life cycle, the considered value comes not just from the harvest but also from the offset to other human activities.

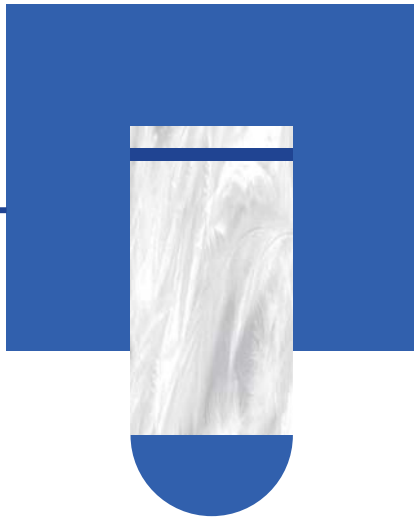
Summary

Natural Resources Investment Features

Introduction of Natural Resources
Raw Land, Farmland and Timberland
Description of Timberland and Farmland

Commodity Investment Forms

- describe features of commodities and their investment characteristics



Commodity Investment Features

- **Basic features**
  - Commodities themselves do not generate cash flows but usually incur costs, such as those for transportation, storage, and insurance for physical commodities.
  - Investors seek to benefit from commodity price appreciation (in excess of carry cost) based on their future economic value rather than actual use of the underlying asset.
- **Sector**

Sector	Sample Commodities
Energy	Oil, Natural gas, Electricity, Coal
Base metals	Copper, Aluminum, Zinc, Lead, Tin, Nickel
Precious metals	Gold, Silver, Platinum
Agriculture	Grains, Livestock, Coffee
Other	Carbon credits, Freight, Forest products

Characteristics of Commodity Investment

- **Distinguishing Characteristics of Commodity Investments**
  - The majority of commodity investing is implemented through derivatives.
    - ✓ Liquid and provide opportunities for price discovery;
    - ✓ Physical commodity markets lack price transparency.

Characteristics of Commodity Investment

- **Commodity exposure can be achieved through means other than direct investment in commodities or commodity derivatives, including the following:**
  - Exchange-traded products (ETPs, either funds or notes)
    - ✓ Suitable for investors who are restricted to equity shares or are seeking the simplicity of trading through a standard brokerage account.
    - ✓ May invest in commodities or commodity futures.
  - Investing with commodity trading advisers
    - ✓ CTAs are managed futures funds that make directional investments primarily in futures markets based on technical and fundamental strategies.
  - Specialized funds investing in specific commodity sectors
    - ✓ An example of specialized funds is private energy partnerships, which are similar in structure to private equity funds and enable institutional exposure to the energy sector.

Basics of Commodity Pricing

- **The Price of a Futures Contract**
  - $F_0(T) = S_0 e^{(r+c-i)T}$
    - ✓ c is the cost of carry;
    - ✓ i is the convenience yield;
    - ✓ r is the risk-free rate;
    - ✓ T is the time to the expiration of the forward contract.
    - ✓ The buyer of a futures contract does not have immediate access to the commodity, but will receive it in the future→ loss of convenience yield.

Basics of Commodity Pricing

- **Relationship between Spot Prices and Future Prices**
  - **Contango**
    - ✓ **Futures price > Spot price**
  - **Backwardation**
    - ✓ **Futures price < Spot price**
- Futures markets that are dominated by **long hedgers** (users of the commodity who buy futures to protect against price increases) tend to be in **contango**.
- Futures markets that are dominated by **short hedgers** (producers of the commodity who short futures to protect against price decreases) tend to be in **backwardation**.

Example

Basics of Commodity Pricing

- Which of the following describes a non-cash benefit of holding a physical commodity rather than a derivative contract on the same commodity?

  A. Interest

  B. Convenience yield

  C. Storage

- **Solution: B.**
  - In market environments in which physical inventories of a commodity become low, investors in that commodity will prefer to hold the physical asset rather than a derivative contract with the asset as an underlying. The premium on the spot price resulting from this preference is called the convenience yield. A and B are both incorrect because interest and storage reflect costs associated with owning the physical commodity.

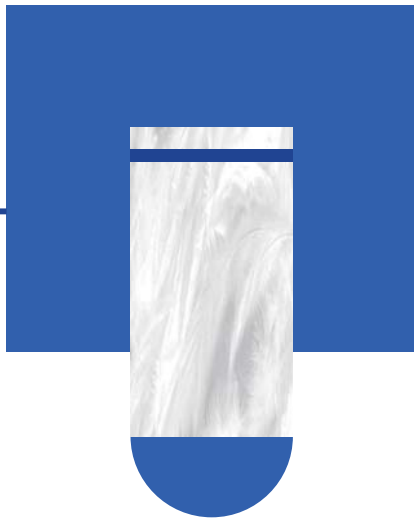
Summary

Commodity Investment Forms

Commodity Investment Features
Characteristics of Commodity Investment
Basics of Commodity Pricing

Natural Resource Investment Risk, Return, and Diversification

- analyze sources of risk, return, and diversification among natural resource investments



Risk/Return Characteristics of Natural Resources

- **Potential Benefits and Risk of Commodities**
  - Return on commodities over time have been lower than returns on the global stocks or bonds.
    - ✓ Sharpe ratios for the commodities as an asset class have been low due to these lower return and the high volatility of commodities prices.
  - Adding commodities to a traditional portfolio can provide diversification benefits.
    - ✓ Historically, correlation of commodity return with those of global equities and global bonds have been low, typically less than 0.2.
  - Because commodity prices tend to move with inflation rates, holding commodities can act as a hedge of inflation risk.
    - ✓ Higher correlation between commodities and inflation implies that commodities provide a better hedge against inflation compared to farmland.

Risk/Return Characteristics of Natural Resources

- **Potential Benefits and Risk of Timberland and Farmland**
  - Farmland and timberland exhibit potential for **portfolio diversification**.
  - **Liquidity** is very low and the risk of negative cash flow high because fixed costs are relatively high.
  - **Weather** is a more unique and exogenous risk for farmland, with drought or flooding dramatically decreasing many crop yields and thus the expected income stream.
  - Productive land generates globally traded and consumed commodities.
    - ✓ This **international competitive landscape** is a major risk factor can result in interruptions in world trade, growing foreign agricultural competition, and resulting declines in crop prices.

Example

Natural Resources

- A significant challenge to investing in timber is most likely its:

  A. high correlation with other asset classes.

  B. dependence on an international competitive context.

  C. return volatility compounded by financial market exposure.

- **Solution: B.**
  - A primary risk of timber is the international competitive landscape.
  - C is incorrect because investors are interested in timber because of its global nature (everyone requires shelter), the current income generated from the sale of the crop, inflation protection from holding the land, and its safe haven characteristics (it offers some insulation from financial market volatility).

Example

Natural Resources

- Which of the following statements about commodity investing is invalid?

  A. Few commodity investors trade actual physical commodities.

  B. Commodity producers and consumers both hedge and speculate.

  C. Commodity indexes are based on the price of physical commodities.

- **Solution: C.**
  - Commodity indexes typically use the price of futures contracts on the commodities included in them rather than the prices of the physical commodities themselves in order to be transparent, investable, and replicable.

Summary

Natural Resource Investment Risk, Return, and Diversification

Risk/Return Characteristics of Natural Resources

Summary

Module: Natural Resources

Natural Resources Investment Features
Commodity Investment Forms
Natural Resource Investment Risk, Return, and Diversification

Module

Hedge Funds

1. Hedge Fund Investment Features
2. Hedge Fund Investment Forms
3. Hedge Fund Investment Risk, Return, and Diversification

Hedge Fund Investment Features

- explain investment features of hedge funds and contrast them with other asset classes

Introduction of Hedge Funds

- **Hedge Funds:** distinguished by their investment approach rather than the underlying investments.
  - Long and short positions;
  - Highly leveraged;
  - Derivative positions.
- Hedge funds are typically classified by strategy. One such classification includes **five broad categories of strategies:**
  - Equity hedge funds,
  - Event-driven hedge funds,
  - Relative value hedge funds,
  - Opportunistic hedge funds,
  - Multi-manager hedge funds.

Strategies of Hedge Funds

- **Equity Hedge Fund Strategies**
  - Seek to profit from *long or short* positions in publicly traded equities and derivatives with equities as their underlying assets.
  - *Most* equity hedge strategies use a *bottom-up* strategy.
- **Types of Equity Hedge Strategies**
  - Market Neutral: Use quantitative, fundamental, and technical analysis to identify under- and overvalued equity securities. The hedge fund takes long positions in undervalued securities and short positions in overvalued securities, while seeking to maintain a market-neutral net position.
    - ✓ Ideally, the manager achieves an overall beta relative to the market close to zero.
  - Fundamental Long/Short Growth: Takes long positions in companies that are trading at inexpensive levels compared to their potential intrinsic value and shorts those that trade in the other direction.

Strategies of Hedge Funds

- **Types of Equity Hedge Strategies(cont.)**
  - Fundamental growth: Use fundamental analysis to identify companies expected to exhibit high growth and capital appreciation
  - Fundamental value: Use fundamental analysis to identify undervalued and unloved companies for which there is the possibility that a corporate turnaround, with future revenue and cash flow growth, will result in higher valuations.
  - Short Bias: Use quantitative, technical, and fundamental analysis to short the overvalued equity securities with limited or no long-side exposures.

Strategies of Hedge Funds

- **Event-Driven Strategies**
  - Seek to profit from defined events that are expected to change valuations, typically involving changes in corporate structure, such as an acquisition or restructuring.
  - Considered *"bottom up"* strategy.
- **Types of Event-Driven Strategies**
  - Merger arbitrage: Long the stock of the company being acquired, and short the stock of the acquiring company.
  - Distressed/restructuring: Focus on the securities of companies either in bankruptcy or perceived to be near bankruptcy.
  - Special situations: Focus on opportunities to buy equity of companies engaged in security issuance or repurchase, special capital distributions, rescue finance, asset sales/spin-offs, or other catalyst-oriented situations.
  - Activist: Manager secure sufficient equity holding to allow them to seek a position on the company board and influence corporate policies or direction.

Strategies of Hedge Funds

- **Relative Value Strategies**
  - Seek to profit from a pricing discrepancy between related securities.
- **Types of Relative Value Strategies**
  - Convertible bond arbitrage: Exploit a perceived mispricing between a convertible bond and its component parts: the underlying bond and the embedded call option.
  - Fixed income (General): Focus on the relative value within the fixed income markets, with an emphasis on sovereign debt (relative value rates) and sometimes the relative pricing of investment-grade corporate debt (relative value credit).
  - Fixed income (Asset backed, mortgage backed, and high yield): Focus on the relative value of various higher-yielding securities, such as MBS, ABS, high-yield loans and bonds, and their derivatives.
  - Multi-strategy: Trade relative value within and across asset classes or instruments.

Strategies of Hedge Funds

- **Opportunistic Strategies**
  - Funds that focus on macro events and commodity trading. These strategies may often use index ETF securities or derivatives in addition to individual securities.
- **Types of Opportunistic Strategies**
  - Macro strategies:
    - ✓ Emphasize a top-down approach to identify economic trends.
    - ✓ Use long and short positions to profit from a view on overall market direction as it is influenced by major economic trends and events.
  - Managed futures:
    - ✓ Funds are actively managed funds making diversified directional investments primarily in the futures markets on the basis of technical and fundamental strategies.
    - ✓ Managed futures funds are also known as commodity trading advisers (CTAs) because they historically focused on commodity futures.

Distinguishing Characteristics of Hedge Fund Investments

- **Distinguishing Characteristics of Hedge Fund Investments**
  - Less legal and regulatory constraints;
  - Flexible mandates permitting the use of shorting and derivatives;
  - A larger investment universe on which to focus;
  - Aggressive investment styles that allow concentrated positions in securities offering exposure to credit, volatility, and liquidity risk premiums;
  - Relatively liberal use of leverage;
  - Liquidity constraints that include lockups and liquidity gates;
  - Relatively high fee structures involving management and incentive fees.

Example

Hedge Fund Investment Features

- An investor is seeking an investment that can take long and short positions, may use multi-strategies, and historically exhibits low correlation with a traditional investment portfolio. The investor's goals will be best satisfied with an investment in:

  A. real estate.

  B. a hedge fund.

  C. a private equity fund.

- **Solution: B.**
  - Hedge funds may use a variety of strategies (event-driven, relative value, macro and equity hedge), generally have a low correlation with traditional investments, and may take long and short positions.

Example

Hedge Fund Investment Features

- Hedge funds are similar to private equity funds in that both:

  A. are typically structured as partnerships.

  B. assess management fees based on assets under management.

  C. do not earn an incentive fee until the initial investment is repaid.

- **Solution: A.**

- A hedge fund that operates as an activist shareholder is most likely engaging in:

  A. a macro strategy.

  B. a relative value strategy.

  C. an event-driven strategy.

- **Solution: C.**

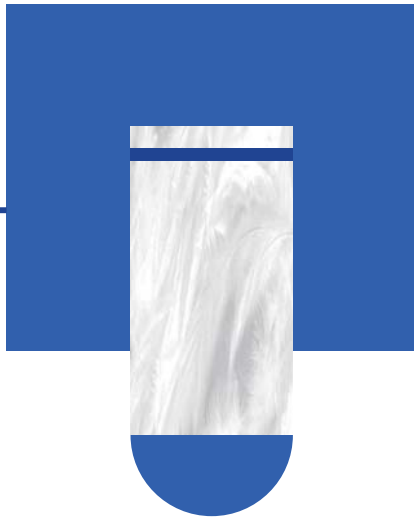
Summary

Hedge Fund Investment Features

Introduction of Hedge Funds
Strategies of Hedge Funds
Distinguishing Characteristics of Hedge Fund Investments

Hedge Fund Investment Forms

- describe investment forms and vehicles used in hedge fund investments



Characteristics of Hedge Funds

- **Characteristics of Hedge Funds**
  - Common structural: Set up as a private investment partnership either onshore or in a tax-advantaged offshore location.
  - Aggressively managed investment portfolios across asset classes;
  - Open to a limited number of investors (meeting certain income and net worth guidelines);
  - Less restricted than traditional investments;
  - Often impose restrictions on redemptions.
    - ✓ Lockup period; Notice period.

Direct Hedge Fund Investment Forms

- **Direct Hedge Fund Investment Forms**
  - A common hedge fund form is a master feeder structure.
  - A common hedge fund fee structure is known as "2 and 20" or "1 and 30".
    - ✓ 2% for management fee;
    - ✓ 20% for fund's net profits.
  - Partnership agreement that delineates responsibilities, hedge funds often use side letters to address the specific requirements of an investor.
- **The hedge fund structure could be a fund of one or a separately managed account (SMA)**
  - For larger investors;
  - Separate investment accounts over which the investor retains more influence.

Indirect Hedge Fund Investment Forms

- **Indirect Hedge Fund Investment Forms**
  - Makes hedge fund exposures more accessible to smaller institutional and larger retail investors;
  - For those who may lack specialized skills in managing certain asset types or want to create multiple and concurrent exposures to different strategies.
- **Hedge fund replication ETFs, investor motivated by:**
  - Reducing management costs;
  - Increasing performance transparency;
  - Improving liquidity.

Indirect Hedge Fund Investment Forms

- **Funds of Hedge Funds: managed portfolio of hedge funds**
  - **Advantages:**
    - ✓ Direct diversification benefits across fund strategies, investment regions, and management styles;
    - ✓ Lower investment minimums;
    - ✓ Reduced lockup periods;
    - ✓ Better exit liquidity;
    - ✓ FOFs have some expertise in conducting due diligence on hedge funds.
  - **Disadvantage:**
    - ✓ FOFs managers charge an additional layer of fees beyond the fees charged by the individual hedge funds in the portfolio.
    - ✓ Greater liquidity in funds of funds may result in weaker performance due to fund redemptions in times of market turmoil.

Example

Forms of Hedge Fund Investments

- An investor who chooses a fund-of-funds as an alternative to a single hedge fund is most likely to benefit from:

  A. lower fees.

  B. higher returns.

  C. more due diligence.

- **Solution: C.**
  - A fund-of-funds manager is expected to provide more due diligence and better redemption terms. Funds of funds charge an additional layer of fees. Investing in fund-of-funds may provide more diversification but may not necessarily provide higher returns.

Summary

Hedge Fund Investment Forms

Characteristics of Hedge Funds
Direct Hedge Fund Investment Forms
Indirect Hedge Fund Investment Forms

Hedge Fund Investment Risk, Return, and Diversification

- analyze sources of risk, return, and diversification among hedge fund investments

Return Generation

- **Hedge fund portfolios approach return generation differently from traditional portfolios.**
  - Hedge funds seek to limit market exposure and returns from beta;
  - Primarily focus on generating idiosyncratic returns by identifying sources of unique return, or alpha.
  - Some specific sources of alpha are the manager skills in specific stock selection and utilizing higher-return strategies that minimize risks:
    - ✓ Market beta—the broad market beta that can be realized using market index–based funds/ETFs.
    - ✓ Strategy beta—the beta attributed to the investment strategy of the hedge fund applied across the broad market.
    - ✓ Alpha—the manager-specific returns, due to the selection of specific positions.

Source of Bias

- **Hedge fund indexes**
  - Reporting by any hedge fund is voluntary. This situation introduces several sources of bias and suggests that hedge fund performance is likely overestimated.
  - Selection bias
    - ✓ Indexes may also have inconsistent sources of the underlying data. A handful of these indexes operate with transparent and constant inclusion, selection, and exclusion of individual managers and/or their funds.
  - Survivorship bias
    - ✓ When funds that have stopped reporting are removed from the index, the index will likely show better performance.
  - Backfill bias
    - ✓ When a successful fund starts reporting performance for the first time, it is very likely that its past performance was stellar, since typically only hedge funds with favorable returns are reported.

Diversification Benefits of Hedge Fund

- **Hedge fund and traditional asset classes**
  - Hedge funds have a fairly high correlation with equities and a low correlation with investment-grade bonds.
  - Adding hedge funds to a traditional 60/40 portfolio typically:
    - ✓ Decreases the total portfolio standard deviation;
    - ✓ Increases the Sharpe ratio;
    - ✓ Enhancing portfolio diversification.

Summary

Hedge Fund Investment Risk, Return, and Diversification

Return Generation
Source of Bias
Diversification Benefits of Hedge Fund

Summary

Module: Hedge Funds

Hedge Fund Investment Features
Hedge Fund Investment Forms
Hedge Fund Investment Risk, Return, and Diversification

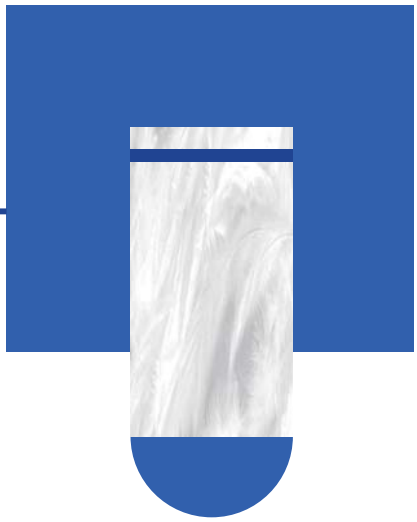
Module

Introduction to Digital Assets

1. Distributed Ledger Technology
2. Digital Asset Investment Features
3. Digital Asset Investment Forms
4. Digital Asset Investment Risk, Return, and Diversification

Distributed Ledger Technology

- describe financial applications of distributed ledger technology



Distributed Ledger Technology

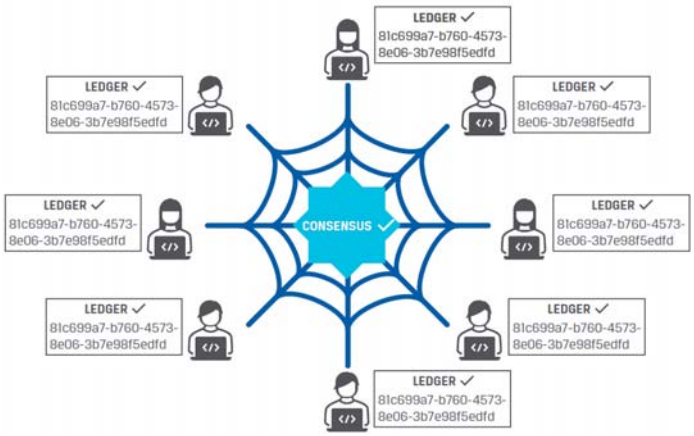
- **Distributed ledger**
  - A type of database that can be shared among potentially infinite numbers of entities in a network.
  - Entries are *recorded, stored, and distributed across a network* of participants so that each participating entity has a matching copy of the digital database.
- **Distributed ledger technology (DLT)**
  - Based on a distributed ledger represents a technological development and offers potential improvements to delivering financing services and financial record keeping.
  - DLT networks are being considered as a means to create, exchange, and track ownership of financial assets on a peer-to-peer (P2P) basis.

Distributed Ledger Technology

- **Potential benefits of using this technology include:**
  - Greater accuracy;
  - Transparency;
  - Security in record keeping;
  - Faster transfer of ownership;
  - P2P interactions.

Distributed Ledger Technology

- **Distributed Ledger Network Setup**
  - Basic elements of a DLT network include a *digital ledger*, a *consensus mechanism* used to confirm new entries, and a participant *network*.



Distributed Ledger Technology

- **Consensus mechanism:**
  - The process by which the computer entities (or nodes) in a network *agree on a common state of the ledger*.
  - Consensus generally involves two steps: *transaction validation and agreement on ledger update by network parties.*
  - Enable the creation of records that are considered *immutable, or unchangeable*, yet they are transparent and accessible to network participants on a near-real-time basis.
- **Cryptography**
  - An algorithmic process to encrypt data, making the data unusable if received by unauthorized parties —— which enables a high level of network security and database integrity.
- **Smart contracts**
  - Computer programs that self-execute on the basis of pre-specified terms.

Blockchain

- **Blockchain:**
  - A type of digital ledger in which information, such as changes in ownership, is recorded sequentially within blocks that are then *linked or "chained" together* and secured using cryptographic methods.
  - Each block contains a *grouping of transactions* (or entries) and *a secure link* (known as a hash) to the previous block.

Proof of Work vs. Proof of Stake

- **Consensus Protocol**
  - Fundamentally, blockchains are software protocols that enable many parties to interact under common assumptions and knowledge without having to trust each other.
  - How blocks are chained together is determined by the consensus protocol, a set of rules governing how blocks can join the chain and become the immutable “truth.”

Proof of Work vs. Proof of Stake

- **Proof of Work (PoW)**
  - Used to verify a transaction involves a cryptographic problem that must be solved by some computers on the network each time a transaction takes place.
  - Miners use powerful computers and significant amounts of energy to solve complex algorithm puzzles to validate and lock blocks of transactions into the blockchain, earning cryptocurrency for themselves in the process.
  - To manipulate historical data, an individual or entity would have to control most nodes in the network.
    - ✓ 51% attack threshold.

Proof of Work vs. Proof of Stake

- **Proof of Stake (PoS)**
  - Requires selected participants on the networks, the validators, to pledge capital to vouch for the block's validity.
  - Validators benefit from both proposing and attesting to the validity of blocks that have been proposed by other participants in a similar staking process.
  - Successful miners that validate the transaction obtain a new digital asset, whether it is a cryptocurrency or a token.

Permissioned and Permissionless Networks

- **DLT can take the form of either permissionless or permissioned networks.**
  - Permissionless networks
    - ✓ *Open to any user who wishes to make a transaction*, and all users within the network can see all transactions that exist on the blockchain.
    - ✓ *Main benefit*: It does not depend on a centralized authority to confirm or deny the validity of transactions, because this takes place through the chosen consensus mechanism.
    - ✓ Trust between transacting parties is not a requirement.
  - Bitcoin is a well-known use of an open permissionless network.

Permissioned and Permissionless Networks

- **DLT can take the form of either permissionless or permissioned networks. (cont.)**
  - Permissioned networks
    - ✓ Network members might be *restricted from participating* in certain network activities.

资料来源：铅笔 - 信息技术行业分布式账本技术：超区块链接

Permissioned and Permissionless Networks

	Permissioned blockchain	**Permissionless blockchain**
Speed	Faster as only a limited number of members participate or are authorized to validate transactions	Slower as a large number of members have to reach consensus, which decreases network speed and scalability
Cost	Cost-effective as few members are required to validate each transaction	Not cost-effective as many members are required to validate each transaction
Decentralization	Partially decentralized as there are a limited number of members in the chain	Decentralized as all members can access the network
Access	Membership is limited	Membership is unlimited
Governance	The governance is determined by a centralized organization	The governance is decentralized and is maintained by the members

Example

Distributed Ledger Technology

- Which of the following is not a potential benefit of distributed ledger technology?

  A. Facilitation of smart contracts

  B. Energy-efficient way of record keeping

  C. Immutable and secure transaction records

- **Solution: B.**
  - Distributed ledger technology provides greater accuracy, transparency, and security in record keeping; enables faster transfer of ownership; and enables peer-to-peer interactions. A DLT network relies on certain consensus mechanisms in which all nodes that are connected on the network agree on new transactions and ledger updates. Once verified by all the nodes of the network, the transaction ledger is immutable and is kept by each of the nodes. However, the transaction validation process requires material computational power of all the miners on the network, especially in the case of proof-of-work consensus protocol.

Example

Proof of Work vs. Proof of Stake

- The process where a node on a blockchain network pledges its digital asset to verify a new block's validity is called:

  A. tokenization.

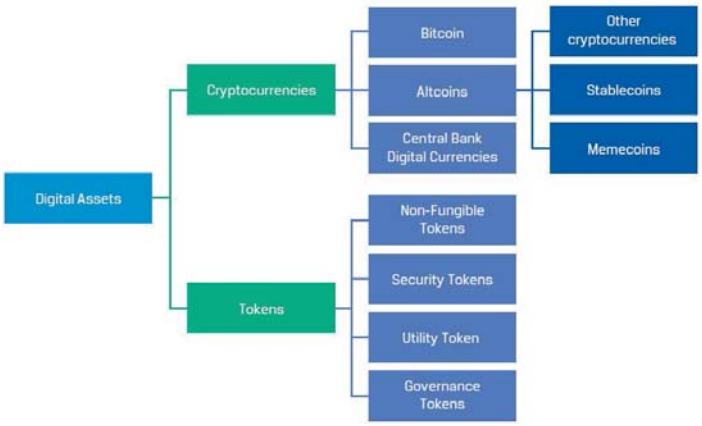
  B. proof of work.

  C. proof of stake.

- **Solution: C.**
  - This proof-of-stake protocol requires selected participants on a blockchain network, the validators, to pledge digital assets to vouch for the block's validity. This stake signals to the network that a validator is available to verify the veracity of a transaction and propose a block. Other validators who stake a digital asset to the network must then attest to the validity of proposed block. Validators benefit from both proposing and attesting to the validity of blocks that have been proposed by other participants in a similar staking process in the form of new digital assets.

Types of Digital Assets

- **Digital Assets**
  - Digital assets are assets that exist only as an electronic record with rights to use, buy, or sell.
  - They can be securities, currencies, properties, or commodities.



Types of Digital Assets

- **Cryptocurrency**
  - Electronic mediums of exchange, lack physical form and are issued privately by individuals, companies, and other organizations.
  - They do not benefit from the backing of a central bank or a monetary authority.
  - Most issued cryptocurrencies utilize open DLT systems.
  - Many cryptocurrencies have a *self-imposed limit* on the total amount of currency they may issue.
    - ✓ Such limits could help maintain their store of value.
    - ✓ There is no consensus on how to value cryptocurrencies, and the apparent lack of clear fundamentals underlying these currencies has contributed to their volatility.
  - Central bank digital currencies (CBDCs) are typically designed as a tokenized version of the currency issued by the central bank ("fiat currency")—essentially a digital bank note or coin.

Types of Digital Assets

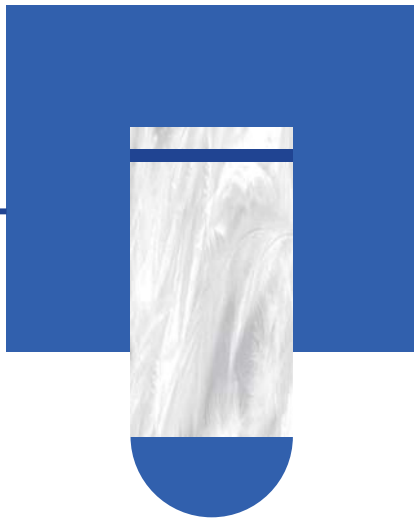
- **Tokenization**
  - The process of representing ownership rights to physical assets on a blockchain or distributed ledger.
  - DLT has the potential to streamline this process by creating a single, digital record of ownership with which to verify ownership title and authenticity, including all historical activity.
- **Non-fungible token (NFT)**
  - NFTs differ from "fungible" tokens, such as cryptocurrencies, because each token and the authenticated object it represents is unique.
- **Security tokens**
  - Digitize the ownership rights associated with publicly traded securities.
  - Initial coin offering (ICO)
    - ✓ An unregulated process whereby companies sell their crypto-tokens to investors in exchange for money or for another agreed upon cryptocurrency.
    - ✓ Lower associated issuance costs and shorter capital-raising time frames.

Summary
Distributed Ledger Technology

Distributed Ledger Technology
Blockchain
Consensus Protocol: Proof of Work & Proof of Stake
Proof of Work vs. Proof of Stake
Permissioned and Permissionless Networks
Types of Digital Assets

Digital Asset Investment Features

- explain investment features of digital assets and contrast them with other asset classes



Distinguishing Characteristics of Digital Assets

- **The main differences between digital assets and traditional financial assets are as follows:**

	Digital Assets	Traditional Financial Assets
Inherent value	No fundamental value or future cash flow generation; Price driven by certain features on the blockchain.	Value determined by future cash flow generated from the assets.
Transaction validation	Usually recorded on decentralized digital ledgers using cryptography and algorithms for permissionless blockchain networks.	Recorded in private ledgers maintained by central intermediaries.
Uses as a medium of exchange	Very few digital assets are used as a direct medium of exchange, mainly targeting largescale commercially viable acceptance.	Not used directly as a medium of exchange but can be readily transacted and exchanged into traditional fiat currencies that are widely used in the real world.
Legal and regulatory protection	Ambiguous, often contradictory, evolving framework; generally unregulated, with minimal legal protections; Use can be illegal or criminal in some countries.	Well-established, tested, and proven legal, regulatory, and commercial standards that are clear, predictable, and well defined across all jurisdictions.

Investible Digital Assets

- **Bitcoin is the best-known and most widely traded cryptocurrency.**
  - Its fundamental design continues to influence the development of new types of digital assets.
  - Thousands of other cryptocurrencies exist based on technology similar to Bitcoin: These are called altcoins.
- **Altcoins**
  - The most prominent altcoin is Ether.
  - Other altcoins include stablecoins and meme coins.

Example

Distinguishing Characteristics of Digital Assets

- The market value of a digital asset is primarily driven by:

  A. the future price expectation of speculators.

  B. the future earnings generated from the digital assets.

  C. the cryptographic algorithm of the blockchain network.

- **Solution: A.**
  - Unlike financial assets, most digital assets do not have an inherent value based on underlying assets or on the expected cash flow that can be generated. In other words, digital assets do not have a fundamental economic value. Their prices depend solely on the expected asset appreciation due to the perceived scarcity value and the potential ability to transfer value in the future; however, that value reflects market expectations at the time the transaction takes place.

Summary

Digital Asset Investment Features

Distinguishing Characteristics of Digital Assets

Investible Digital Assets

Digital Asset Investment Forms

- describe investment forms and vehicles used in digital asset investments

Direct Investment in Digital Asset

- **Investment in digital assets can take the form of direct investment on the blockchain or indirect investments in exchange-traded products and hedge funds.**
  - Direct ownership
    - ✓ Involves the use of a cryptocurrency wallet, which stores the (public and private) digital codes required to access the asset on a computer website or mobile device application.
  - Two different types of cryptocurrency exchanges exist:
    - ✓ Centralized exchanges (Most popular type of exchange)
      - ☐ Trading is electronic and direct, without any intermediating broker or dealer, and is hosted on private servers, exposing the centralized exchanges and their clients to security vulnerabilities.
    - ✓ Decentralized exchanges
      - ☐ Lack a centralized control mechanism and operate on a distributed platform without central coordination or control.
  - Both centralized and decentralized exchanges may face problems with fraud and manipulation and raise investor-protection concerns because they are not subject to rigorous oversight.

Direct Investment in Digital Asset

- **Direct investments in digital assets are made on various digital exchanges where the transaction is recorded on the blockchain.**
- **Risks with direct investment in cryptocurrencies**
  - Risk for fraud, which has increased with the popularity of cryptocurrencies.
  - Losing access to the passkey makes the holdings in the wallet irretrievable.
  - Many of the smaller cryptocurrencies may be held primarily by a small number of holders, which means individuals or entities that hold an amount of a cryptocurrency large enough to have the ability to manipulate the price.

Indirect Investment in Digital Asset

- **Several alternatives exist to gain indirect exposure to digital assets:**
  - Cryptocurrency coin trusts
    - ✓ Allow investors to trade shares in trusts holding large pools of a cryptocurrency and that trade over the counter (OTC) and behave like closed-end funds.
  - Cryptocurrency futures
    - ✓ Contracts are agreements to buy or sell a specific quantity of Bitcoin or other cryptocurrency at a specified price on a particular future date.
  - Cryptocurrency exchange-traded funds
    - ✓ An increasing number of exchange-traded products, such as ETFs, seek to replicate digital asset investment returns.
    - ✓ These ETFs typically do not directly invest in cryptocurrencies and gain exposure to the value of cryptocurrencies using cash and cryptocurrency derivatives.

Indirect Investment in Digital Asset

- **Several alternatives exist to gain indirect exposure to digital assets (cont.) :**
  - Cryptocurrency stocks
    - ✓ Provide indirect exposure due to their activity and relationship to digital assets.
  - Hedge funds investing in cryptocurrencies
    - ✓ Such as discretionary long, long/short, quantitative, and multi-strategy, have emerged as a major source of indirect digital asset investing.
    - ✓ Several hedge funds actively mine for Bitcoin to generate further returns.

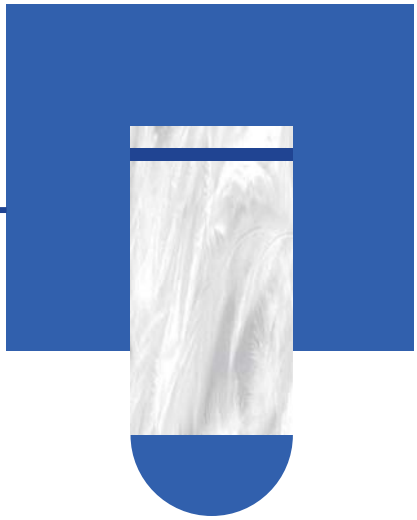
Summary

Digital Asset Investment Forms

Direct Investment in Digital Asset
Indirect Investment in Digital Asset

Digital Asset Investment Risk, Return, and Diversification

- analyze sources of risk, return, and diversification among digital asset investments



Digital Asset Investment Risks and Returns

- **Digital Asset Investment Risks and Returns**
  - Given that regulation of cryptocurrencies is evolving, there still is no clear legal protection for using them as a medium of exchange.
  - Bitcoin and other cryptocurrency values are based solely on asset appreciation, with no underlying cash flows.
  - The market demand for the limited supply of cryptocurrencies is a significant driver of prices.
  - Bitcoin's performance has been characterized by high return, high volatility, and low correlations with traditional asset classes.

Example
Digital Asset Investment Risk, Return, and Diversification

- More institutional investors are allocating capital to cryptocurrencies because of their:

  A. low price volatility.

  B. high expected cash flow.

  C. low correlation with other traditional asset classes.

- **Solution: C.**
  - The value of Bitcoin and other cryptocurrencies is based solely on asset appreciation, with no underlying cash flows. Historically, their price volatility has been extremely high. As such, cryptocurrencies are often considered a high-risk investment. Nevertheless, more institutional investors allocate their investment into cryptocurrencies because of the low historical correlation with other traditional asset classes, providing potential diversification benefits to a portfolio.

Summary
Digital Asset Investment Risk, Return, and Diversification

Digital Asset Investment Risk, Return, and Diversification

Summary

Module: Introduction to Digital Assets

Distributed Ledger Technology
Digital Asset Investment Features
Digital Asset Investment Forms
Digital Asset Investment Risk, Return, and Diversification

问题反馈

- 如果您认为金程**课程讲义/题库/视频**或其他资料中**存在错误，欢迎您告诉我们，**所有提交的内容我们会在最快时间内核查并给与答复。
- **如何告诉我们？**
  - 将您发现的问题通过扫描右侧二维码告知我们，具体的内容包含:
    - ✓ 您的姓名或网校账号
    - ✓ 所在班级
    - ✓ 问题所在科目(若未知科目，请提供章节、知识点和页码）
    - ✓ 您对问题的详细描述和您的见解
- **非常感谢您对金程教育的支持，您的每一次反馈都是我们成长的动力。**

求知无坦途。

There is no royal road to learning.