

Alternative Investments

另类投资

Level I



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- 本科阶段就读复旦大学财务金融系，GPA全系第一，获管理学学士学位和法学学士学位；研究生阶段就读复旦大学管理学院
- 以全优成绩通过CFA三个级别考试；一天时间以全优成绩同时通过FRM两个级别考试

□ 财经讲师的王牌之路

- 全职加入高顿财经前，就职于国有商业银行总行和华尔街投行，同时以兼职身份承担高顿CFA/FRM教学工作
- 逾12年教龄，CFA/FRM培训界的教父级人物，学员遍布全球



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另类投资的基本概念

1.1 另类投资的基本分类

- Alternative investments are investments other than ownership of traditional asset classes (public equity and fixed-income instruments and cash) and include private capital, real assets, and hedge funds

1. Private capital
 2. Real assets
 3. Hedge funds
- | | | |
|------------------|------------------|---------------------|
| ■ Private equity | ■ Real estate | ■ Natural resources |
| ■ Private debt | ■ Infrastructure | ■ Digital assets |

1.2 另类投资的特征

- Special knowledge to value cash flow and risks
- Low correlation with traditional investments
- Lack of liquidity
- Long investment horizons and large capital outlays
- Different investment structures
- Incentive fees to minimize information asymmetry
- Performance appraisal challenges

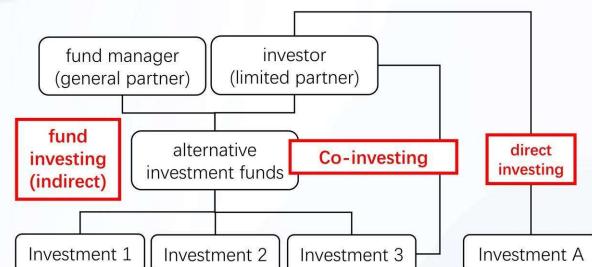
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2. 另类投资的方式

□ Fund investment (indirect method)

- Investor contributes capital to a fund, and fund identifies, selects, and makes investments on the investor's behalf



□ Direct investment

- It requires the investors to have the resources to provide the specialized knowledge, skills, and oversight capabilities
- Direct investors retain maximum flexibility and control

□ Co-investment

- Investor invests in assets indirectly through the fund but also possesses rights to invest directly in the same assets
- It weighs the benefits of greater control and lower fees

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3. 另类投资的所有权结构

- Most alternative investment vehicles set up as limited partnerships
 - Limited partners (LP) are investors who are expected to assume the risks associated with the investments
 - Limited partnerships typically have a limit on the number of LPs
 - LP must generally meet certain minimum requirements (accredited investors)
 - General partner (GP) runs the fund and bears unlimited liability
 - Limited partnership agreement (LPA)
 - Side letter (eg. first right of refusal, "most favored nation" clause)
- Master limited partnership (MLP) can be traded on exchanges
- In a public-private partnership (PPP), both governments and private investors are involved in funding and completing long-lived fixed assets intended for public use or to provide essential services

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4. 另类投资的生命周期

- Investment life cycle phases generally fall into three distinct periods

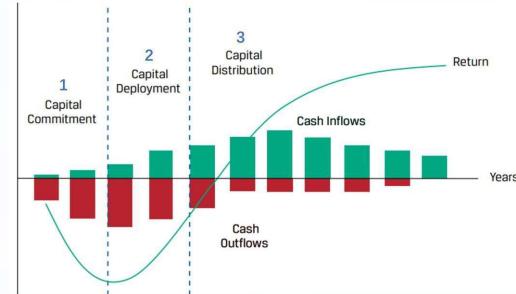
1. Capital commitment

- 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

2. Capital deployment

- Cash outflows typically exceed inflows, with management fees further reducing returns

The return and the investment horizon display a relationship, called **J-curve effect**



3. Capital distribution

- The fund may **realize capital gains** from liquidating or exiting its investments

5.1 另类投资的业绩评估

- An **internal rate of return** is often used as an initial approach to calculate investment returns
- A shortcut methodology used by private equity and real estate managers is a **multiple of invested capital (MOIC)**
 - ◆ **MOIC = (realized value + unrealized value) / total invested capital**
 - Total invested capital is paid-in capital less management fees and fund expenses
 - How long it takes to realize the MOIC does matter
- Alternative investments may use **borrowed funds** to increase investment returns
 - ◆ **Leveraged return (R_L) = $r + v_B/v_C \times (r - r_B)$**
 - v_B and v_C represents the size of borrowed funds and cash investment
 - r is the periodic rate of return, and r_B is the borrowing rate

5.2 另类投资公允价值的确定

- A **three-level hierarchy** is used to measure **fair value**
 1. Quoted prices in active markets for identical asset that may be accessed
 2. Inputs that are directly or indirectly **observable** for an asset
 3. **Unobservable inputs** are used to measure fair value for asset
- For Level 3 asset pricing, the very nature of assets that can be valued only on a "**mark-to-model**" basis can and should be a focus for the alternative asset investor
 - As a result, **returns may be smoothed or overestimated**, and the **volatility of returns may be understated**

6.1 另类投资的基本费用结构

- Alternative investment typically involve a **flat management fee** and often levy **additional performance fees** based on a percentage of periodic fund returns
 - Common fee structure is “2 and 20”

1. Management fees

- ① **Hedge fund:** management fees are calculated on **either** the **beginning-of-period** or **end-of period values** of **assets under management**, regardless of investment performance
- ② **Private equity:** management fees are calculated on **committed capital**

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6.1 另类投资的基本费用结构

2. Incentive fees (performance fees, carried interests)

- Incentive fees are calculated on profits **net of management fees** or on profits **independent of management fees**
- **Hurdle rate provisions**
 - **Hard hurdle rate:** the incentive fees are paid only on **returns in excess of the benchmark return**
 - **Soft hurdle rate:** the incentive fees are paid on **all profits** only if return achieves hurdle rate
- **High water mark provisions**
 - The incentive fees are only paid when assets under management are **above the highest value (net of fees) previously recorded**

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6.2 激励费的一些特殊设计

- **Waterfalls** provide 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**
 - GPs get paid before LPs receive their initial investment on the entire fund, so it is **more advantageous to the GP**
 - **Whole-of-fund (European) waterfalls:** GP does not participate in any profits **until** the LPs receive their initial investment and the hurdle rate has been met
 - It is **more advantageous to the LPs**
- **Clawback provision** make **LPs have right to reclaim** part of the **GP's performance fees**
 - It is activated when a GP exits successful deals early on but incurs losses on deals later in the fund's life

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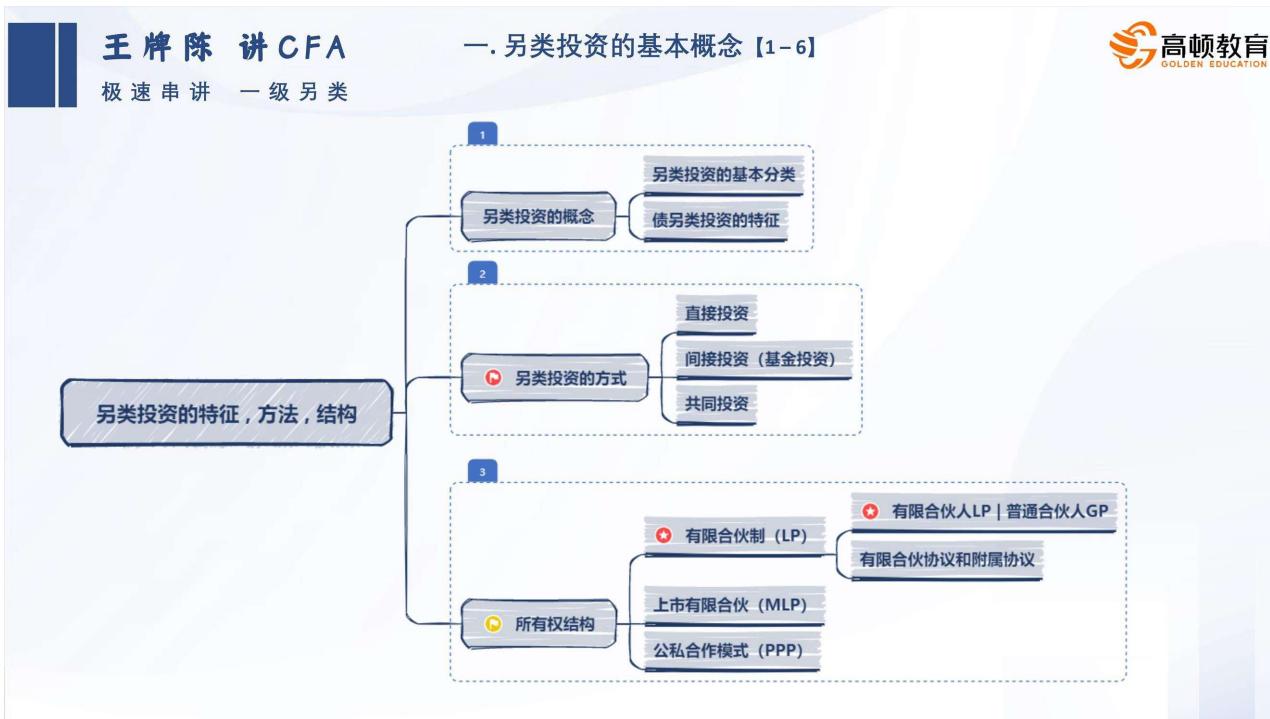
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6.2 激励费的一些特殊设计

- **Catch-up clause** allows the GP to receive all the distributions above the hurdle rate, until GP receives 20% of the profits generated, and then excess dollar is split 80/20 between the LPs and GP

6.3 定制化费用结构

- Custom fee arrangements
 - Fees based on **liquidity terms** and **asset size**
 - Longer lockups are associated with lower fees
 - Smaller hedge funds with strong performance may be able to maintain higher fees
 - **Founders' shares**: entitle a lower fee structure
 - "**Either/or**" fees: managers agree either to charge a 1% management fee or to receive a 30% incentive fee above a mutually agreed-on annual hurdle, whichever is greater





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另类投资的资产类型

7.1 私募股权投资的基本类型

- **Private equity** is a form of private capital funding sourced from outside public markets through non-traditional sources
 - Private equity invests either **in privately owned companies** or in public companies with the intent to **take them private**
 - PE can be injected at various stages of business development
1. **Venture capital** invests in or provides financing to private companies with **high growth potential**
 - ① **Pre-seed capital / angel investing** is provided at the **idea stage**
 - ② **Seed stage financing** supports **product development** and **marketing efforts**
 - It is usually the **first stage** at which VC funds invest
 - ③ **Early stage / start-up stage financing** is provided to companies **moving toward operation**
 - ④ **Later stage financing** is provided **after commercial production** and sales have begun
 - ⑤ **Mezzanine stage financing** is provided to **prepare to go public**

7.1 私募股权投资的基本类型

2. **Growth capital**
 - A private equity firm that engages in minority equity investing, takes a **less-than-controlling interest** in **more mature companies**
 - Publicly companies can seek private equity capital through **PIPEs**
 - A PIPE transaction (**private investments in public equities**) is a private offering to select investors with **fewer disclosures** and **lower transaction costs** that allows the issuer to **raise capital more quickly** and cost effectively
3. **Leveraged buyouts (LBO)**
 - Private equity firms acquire public companies or established private companies, with a significant percentage of the purchase price **financed through debt**
 - **Management buyouts:** **current management team** is involved in the acquisition
 - **Management buy-ins:** an **external management team** acquires a company and replaces the existing management team

7.2 私募股权投资的退出策略

- Public listing
 - Initial public offering
 - An IPO may potentially realize the **highest price** for the company
 - Direct listing: equity of the entity is floated on the public markets directly, **without underwriters**
 - SPAC (Special purpose acquisition company): a **shell company** is formed to raise a blind pool of cash through an IPO to acquire a private firm
- Trade sale: sale of a company to a **strategic buyer** such as a competitor of the company
- Secondary sales: sale to **another PE / other investors**
- Write-off / liquidation
- Recapitalization: a company **issues debt to fund a dividend distribution** to equity holders

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8. 私募债权投资的基本类型

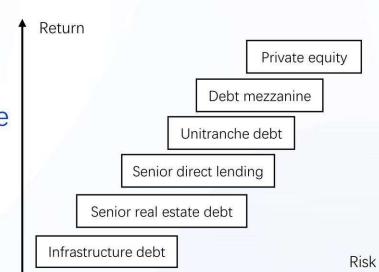
- Private debt primarily refers to the various forms of debt provided by investors **directly to private entities**
 1. Direct lending is a way to provide capital **directly to borrowers** and subsequently receiving interest, the original principal
 2. Venture debt is provided to **start-up or early-stage companies** that may be generating little or negative cash flow
 3. Mezzanine debt: private debt that is **subordinated to senior secured debt** but is **senior to equity** in the borrower's capital structure
 4. Distressed debt: buying the debt of mature companies **with financial difficulty**, expecting companies may restructure and revive
 5. Unitranche debt is a **hybrid loan structure** combining different tranches of secured and unsecured debt

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9. 私募资本投资的风险收益特征

- Compared to traditional investments, private equity can offer better **returns** combined with **higher risks**
 - This contrast is a function of private equity's **distinct choice set, greater management control, and greater leverage**
- Private debt has potentially **higher returns and risks** than traditional fixed income
- Private capital indices may be an unreliable measure of performance because of **survivorship bias** and **backfill bias**
 - It is failure to mark to market leads to **underestimation of volatility and correlations** with other investment
 - Data ambiguities make it challenging to reliably measure the benefits of private capital investing



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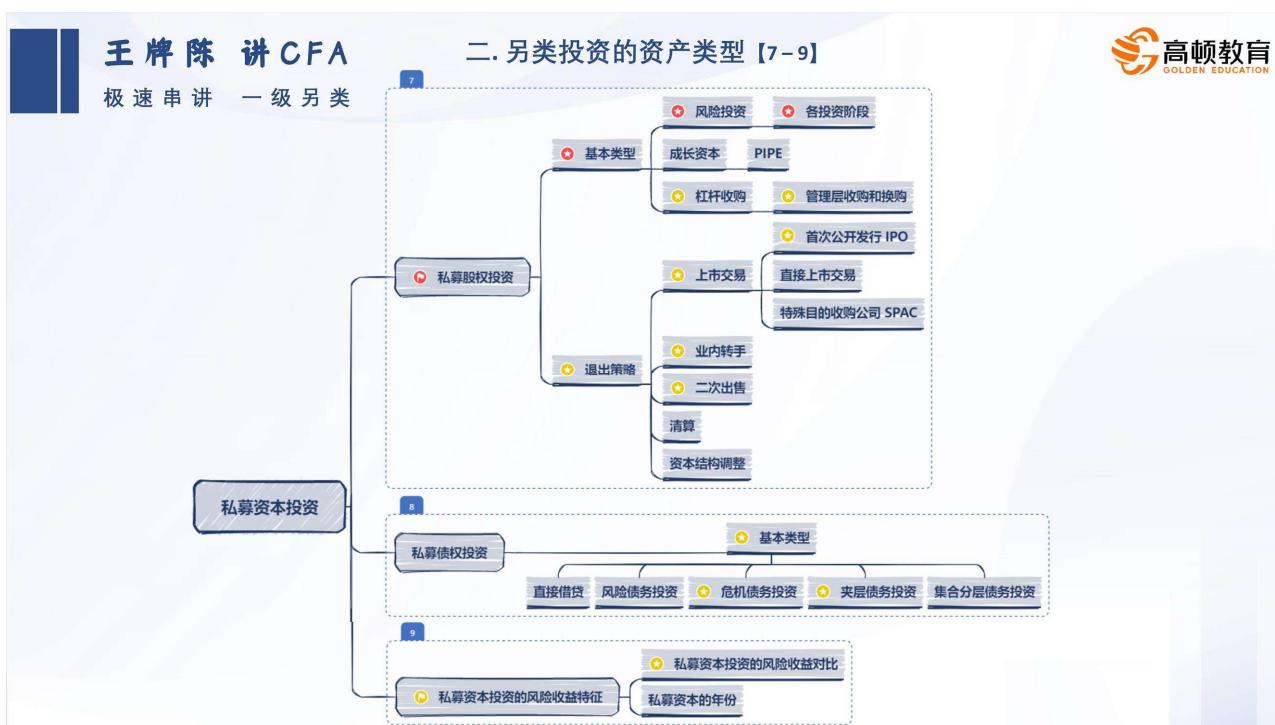
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9. 私募资本投资的风险收益特征

- A fundamental timing characteristic for private capital is its **vintage year**, with the valuation and economic environment at the origin of a private equity fund having a potentially substantial effect on realized results over the fund's set lifespan
 - The vintage year is defined as the year in which the fund **makes its first investment**, and it is important for **comparing private equity with other funds** in the same year
 - To offset the potentially adverse performance effects of an ill-timed fund launch at an unfavorable stage of the business cycle, investors can **diversify exposure across fund vintage years**
- When combined with public stocks and bonds, investments in private capital funds can add a **moderate diversification benefit** with opportunities for excess returns due to private capital's additional leverage, market, and liquidity risks

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10.1 房地产投资的分类

□ Residential

- Individual single-family detached homes
- Multi-family attached units

□ Commercial

- Office buildings
- Retail shopping centers
- Commercial rental properties
- Warehouses

| | Debt | Equity |
|---------|---|---|
| Private | <ul style="list-style-type: none"> • Mortgages • Construction lending • Mezzanine debt | <ul style="list-style-type: none"> • Direct ownership of real estate (sole ownership, joint ventures, real estate limited partnerships) • Indirect ownership via real estate funds • Private REITs |
| Public | <ul style="list-style-type: none"> • MBS • Mortgage REITs • Mortgage ETFs • Covered bonds | <ul style="list-style-type: none"> • Shares in real estate corporations • Shares of real estate investment trusts (listed REITs) • Mutual funds • Index funds • ETFs |

10.1 房地产投资的分类

□ Direct real estate investment

- **Pro:** control / tax benefits / diversification
- **Con:** complexity / specialized knowledge / significant capital needs / concentration risk / lack of liquidity

□ Indirect real estate investment (eg. Real Estate Investment Trusts, REITs)

- The main appeal of REITs is the **elimination of double corporate taxation** by distributing dividends equal to 90%-100% of taxable net rental income
- An advantage is that public traded REITs provide investors with **greater transparency**
- A disadvantage of public traded REITs is their **higher correlation with the public equity markets** when compared to private real estate

10.2 房地产投资的风险收益特征

□ Benefits

- Income generation and **capital appreciation**
- Fixed rents that can make **income predictable and stable**
- **Inflation protection** due to adjustment of lease payments
- Diversification benefits

□ Risk

- **Leverage risk**
- Speculative investors increase their default risk

11.1 基础设施投资的基本概念

- **Infrastructure investments** are **real, capital-intensive, and long-lived assets** intended for **public use** and **provide essential services**
 - The cash flow arise from contractual payments
- A **public-private partnership (PPP)** is typically defined as a **long-term contractual relationship** between the public and private sectors for the purpose of having the private sector deliver a project or service traditionally provided by the public sector

11.2 基础设施投资的分类

□ Economic infrastructure

- Transportation assets
- ICT assets
 - information and communication technology
- Utility and energy

□ Social infrastructure

- Educational and health care assets
- Social housing
- Correctional facilities
- Government/municipal buildings

□ Direct investment

- **Full control** and **capture full value**
- A large investment requirement results in **concentration and liquidity risks**
- A group of strategic investors with **long-term horizon**

□ Indirect investment: infrastructure funds,

infrastructure ETFs, equity in publicly traded infrastructure providers, or **master limited partnerships (MLPs, like REITs)**

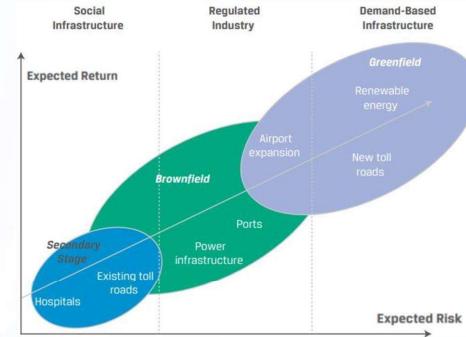
- **Liquidity** and diversification
- **Reasonable fees**
- **Transparent governance**
- **Observable market prices**

11.3 基础设施投资的阶段

- **Greenfield investment:** developing new assets and new infrastructure, are opportunistic investments
 - It is the riskiest stage
- **Brownfield investment:** redevelop existing facilities and may involve privatization of public assets or a sale leaseback of completed greenfield projects
 - This stage appeals to investors focused on long-term and stable returns
- **Secondary-stage investments:** invest in existing infrastructure facilities or fully operational assets that do not require further investment or development over the investment horizon
 - It can generate immediate cash flow for investors, so it has lowest risk

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11.4 基础设施投资的风险收益特征

- | | |
|-------------------------------|---|
| □ Stable long-term cash flows | □ Inflation protection |
| □ Capital appreciation | □ Lower default rates and higher recovery rates than similar fixed-income instruments |
| □ High barriers to entry | □ Less subject to fluctuation over the economic cycle |
| □ Diversification benefits | |

12.1 土地投资的基本概念

- **Land investments** include investments in less developed land that includes farmland, timberland, and raw land, as well as associated mineral or drilling rights
- Sources of return include expected price appreciation over time and cash flows, such as farm lease payments (for an owner), farm operating income (owner-operator), farm timberland income, and mineral and drilling royalties

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12.2 农地投资和林地投资

- | | |
|--|---|
| □ Farmland <ul style="list-style-type: none"> ■ Typically trading in much smaller sizes ■ Little flexibility: products must be harvested when ripe ■ Sensitive to unexpected weather changes | □ Timberland <ul style="list-style-type: none"> ■ Typically trading in larger units of land ■ Flexibility: harvesting more trees when timber prices are up and delaying harvests when prices are down ■ Long market cycle |
|--|---|

12.3 土地投资的方式

- **Direct investment**
 - Timberland investors (commonly institutional investors) use TIMOs (timberland investment management organizations) to select, manage and sell assets
 - Owning physical farmland (commonly family owned) opens to a variety of foodstuffs
- **Indirect investment:** limited partnerships, limited liability corporations (LLC), and private REITs, farmland funds and publicly traded farmland REITs

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13.1 大宗商品投资的基本特征

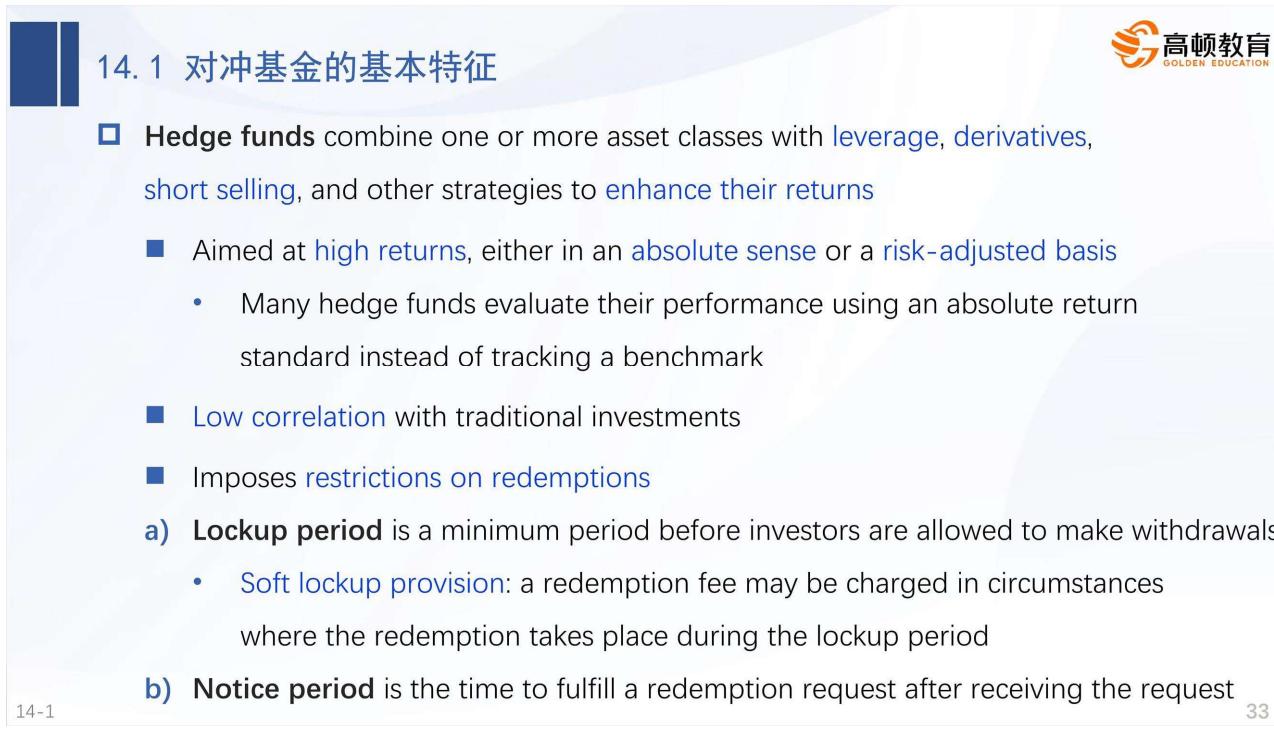
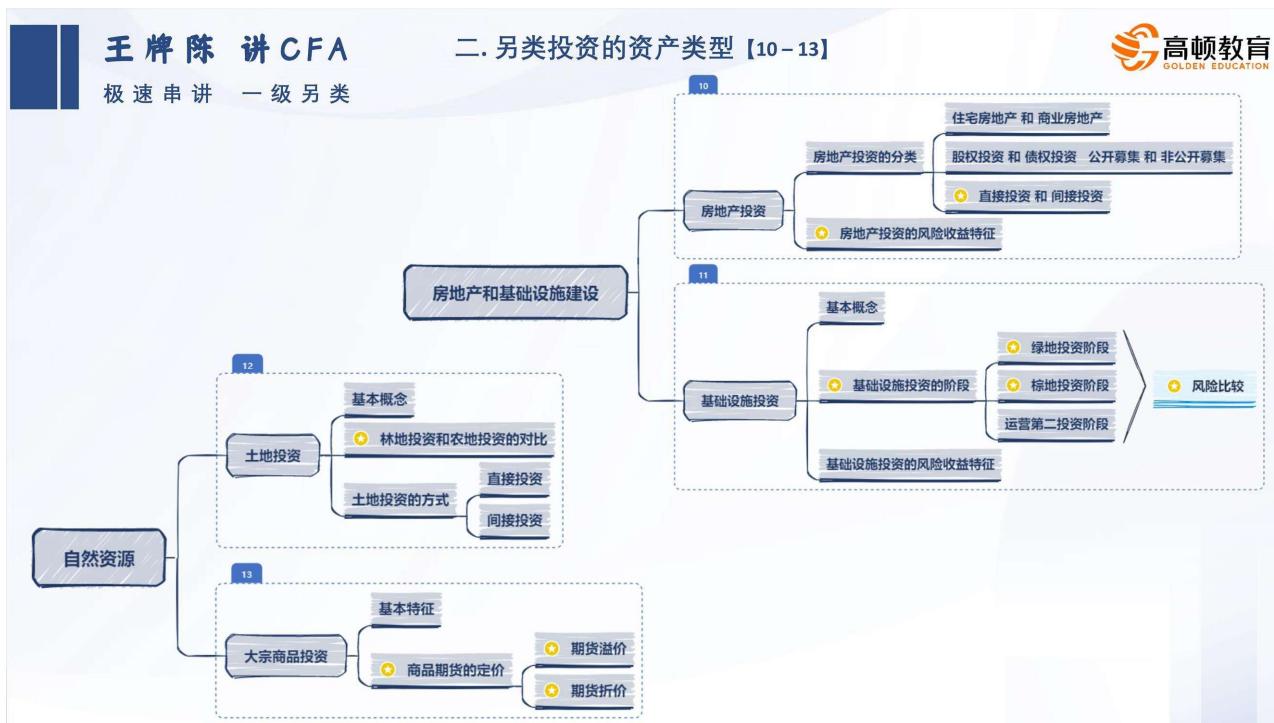
- **Commodities** do not generate cash flows but usually incur **carry costs**, such as those for transportation, storage, and insurance for physical commodities
- Commodities can **provide diversification** and **inflation protection**
- The majority of commodity investing is implemented through derivatives
 - Investors seek to benefit from commodity price appreciation based on their future economic value

13.2 商品期货的定价

- $F_0(T) = S_0 \times e^{(r + c - i) \times T}$
 - **r**: risk-free rate
 - **c**: cost of carry
 - **i**: convenience yield
- **Contango**
 - **Futures price > Spot price**
 - The cost of carry exceeds the convenience yield
- **Backwardation**
 - **Futures price < Spot price**
 - The convenience yield is positive and exceeds the cost of carry

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14.2 对冲基金的投资策略

1. **Equity hedge strategies** focus on **public equity markets** and **take long and/or short positions**, using a “**bottom-up**” approach
 - ① **Market neutral**: takes long positions in undervalued securities and short positions in overvalued securities, while seeking to **maintain a market-neutral net position**
 - ② **Fundamental long / short**: takes a long position in those securities whose valuations are undervalued or have a potential for growth and concurrently **shorts stocks or an index to reduce the risk**
 - ③ **Fundamental growth**: use fundamental analysis to **identify companies expected to exhibit high (low) growth** and take a long (short) position in these stocks
 - ④ **Fundamental value**: use fundamental analysis to **identify undervalued (overvalued) companies** and take long (short) position in these companies
 - ⑤ **Short bias**: use **quantitative, technical, and fundamental analysis** to short the **overvalued equity securities** with limited or no long-side exposures

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14.2 对冲基金的投资策略

2. **Event-driven strategies** are **bottom-up strategies**, which seek to profit from defined events, typically involving changes in corporate structure, such as an acquisition or restructuring
 - ① **Merger arbitrage**: **long** the stock of the company **being acquired**, and **short** the stock of the **acquiring company**
 - ② **Distressed / restructuring**: focus on securities of companies either in bankruptcy or perceived to be near to bankruptcy
 - Simply **buy fixed-income securities** trading at a significant discount to par
 - **Buy fulcrum debt instrument** expected to convert into new equity upon restructuring or bankruptcy
 - ③ **Activist shareholder**: purchase sufficient equity to **influence a company's policies or direction**
 - Distinct from private equity because it invests in the public equity market
 - ④ **Special situations**

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14.2 对冲基金的投资策略

3. **Relative value strategies** seek to profit from a **pricing discrepancy** between related securities
 - ① **Convertible bond arbitrage**: seek to exploit a perceived mispricing between a convertible bond and its component parts
 - The strategy typically involves **buying convertible debt securities** and simultaneously **selling the same issuer's common stock**
 - ② **Fixed income asset backed**: seek to take advantage of **mispicing across different ABSs**
 - ③ **Fixed income general**: focus on the **relative value** within the fixed income markets
 - ④ **Multi-strategy**: trade relative value within and across asset classes or instruments
4. **Opportunistic strategies** focus on macro events and commodity trading
 - ① **Macro strategies**: emphasize a **top-down approach** to identify economic trends, and trades are made on the basis of expected movements in economic variables
 - ② **Managed futures**: make diversified investments primarily in the futures markets, also known as **commodity trading advisers (CTAs)**
5. **Multi-manager strategies**

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14.3 对冲基金的投资方式

- Direct hedge funds investment forms:
for larger investors, the hedge fund structure could be a fund of one or a separately managed account (SMA)
 - Allow for a customizable portfolio
 - Better transparency
 - Efficient capital allocation
 - Higher liquidity
 - Operationally more complex
 - Greater governance oversight
- Indirect hedge funds investment forms:
use fund-of-hedge-funds approach (FOF)
 - Benefits of FOF investing
 - Increasing performance transparency
 - Direct diversification
 - Lower investment minimums
 - Reduced lockup periods and better redemption terms
 - Better exit liquidity
 - Access to a closed hedge fund
 - Expertise in conducting due diligence
 - FOFs investors face a higher fee structure

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14.4 对冲基金投资的风险收益特征

- The performance of hedge funds can be attributed to three distinct sources:
 - I. Market beta
 - II. Strategy beta
 - III. Alpha
- Hedge fund indexes can be used to compare the risk-adjusted return of hedge funds
- Several sources of bias suggests that hedge fund performance is likely overestimated
 - Selection bias
 - Survivorship bias
 - Backfill bias
 - Equal index weighting

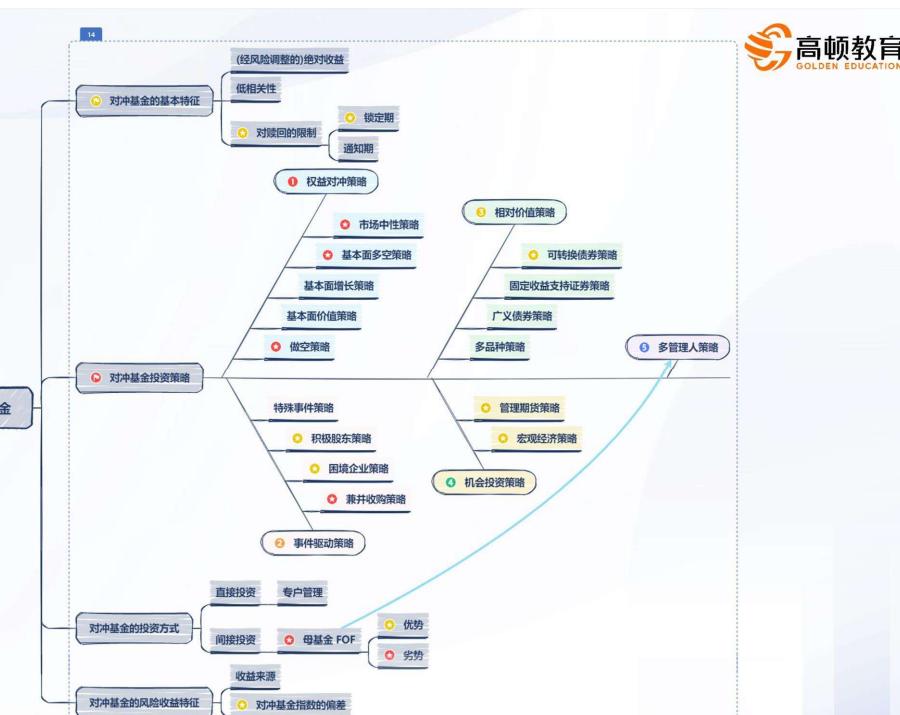
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二. 另类投资的资产类型【14】



15.1 分布式记账技术

- A **distributed ledger** is a type of database that can be shared among infinite numbers of entities in a network, and entries are recorded, stored, distributed across a network of participants so that each participating entity has a matching copy of the digital database, making each copy of the database a verified record of all current and previous transactions
- **Distributed ledger technology (DLT)** are being considered as a mean to create, exchange, and track ownership of financial assets on a peer-to-peer (P2P) basis
 - Benefits of DLT include greater accuracy, transparency, and security in record keeping; faster transfer of ownership; and P2P interactions
 - Elements include a digital ledger, a consensus mechanism used to confirm new entries and a participant network (permissionless / permissioned)
 - DLT use the **cryptography**, an algorithmic process to encrypt data, making the data unusable if received by unauthorized parties

15.1 分布式记账技术

- **Blockchain** is a type of digital ledger in which information is recorded sequentially within blocks that are then chained together and secured using cryptographic methods
 - Each block contains a grouping of transactions and a secure link (known as a **hash**) to the previous block, and new transactions are inserted into the chain only after validation via a consensus mechanism
- **Consensus protocol** determine how blocks are chained together
 1. The **proof of work protocol (PoW)** is used to verify a transaction involves a cryptographic problem that must be solved by some computers on the network (miners)
 - Miners solve complex algorithm puzzles to validate and lock blocks of transactions into the blockchain, earning cryptocurrency for themselves
 2. The **proof of stake protocol (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

15.2 数字资产的常见类型

- **Cryptocurrencies** are the most common digital assets used to transfer or store value, which allow near-real-time transactions without the need for an intermediary
 - Cryptocurrencies do not benefit from the backing of a central bank or a monetary authority
 - The market demand for the limited supply of cryptocurrencies is a significant driver of prices
 - High return, high volatility and low correlations with traditional asset classes
- **Tokenization** is the process of representing ownership rights to physical assets on a blockchain or distributed ledger
 - A non-fungible token (NFT) is used for digital artwork trading
 - Security tokens digitize the ownership rights associated with publicly traded securities, such as initial coin offering (ICO)
 - Utility tokens provide services within a network, such as pay for services and network fees
 - Governance tokens serve as votes to determine how particular networks are run

15.3 数字资产的特点

- Difference between digital and financial assets
 - Inherent value: digital assets **do not have a fundamental value**
 - Digital assets derive price solely from an anticipated asset appreciation from a perceived scarcity value and the potential ability to transfer value in the future
 - Validating transactions: the ownership and exchange of digital assets are recorded on a **decentralized digital ledger**
 - Uses as a medium of exchange: some digital assets are used as substitutes of real-world fiat currencies in certain circumstances
 - Legal and regulatory protection: comprehensive rules that are specific to digital assets are still being developed, which makes the digital assets value **highly speculative**

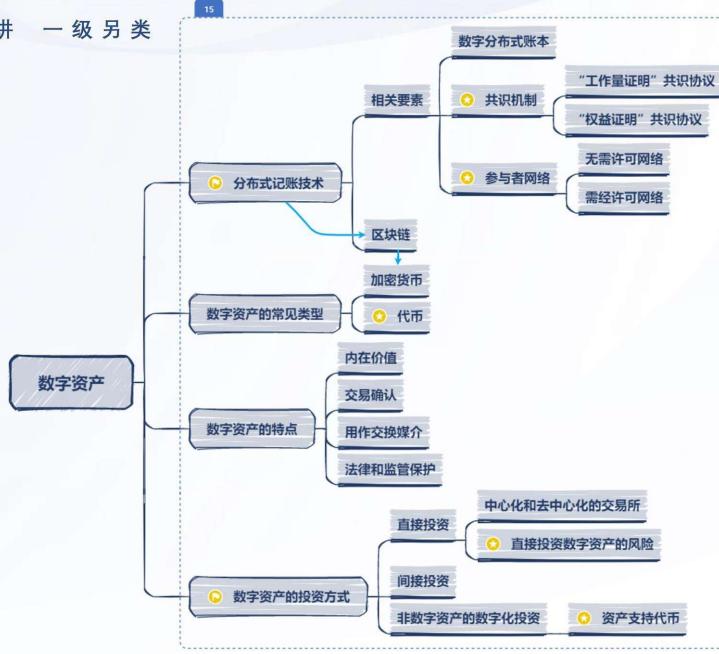
15.4 数字资产的投资方式

- Direct ownership of cryptocurrencies involves the use of a **cryptocurrency wallet**, which stores the digital codes required to access the asset
 - Direct investments are made on various digital exchanges
 - a) **Centralized exchanges**: **privately held**, offer volume, liquidity, price transparency
 - Trading is electronic and direct **without any broker or dealer**, and is exposing the centralized exchanges and their clients to **security vulnerabilities**
 - b) **Decentralized exchanges** lack a centralized control mechanism and operate on a distributed platform **without central coordination or control**
 - If one of computers on the network is attacked, the exchange still remains operational
 - Risks of direct forms
 - Risk for **fraud** (eg. pump and dump)
 - **Losing the passkey** makes the holdings in the wallet irretrievable
 - Smaller cryptocurrencies may be held primarily by **whales**, who can manipulate the price⁴⁴

15.4 数字资产的投资方式

- Indirect forms
 - **Cryptocurrency coin trusts** trade **over the counter** and behave like closed-end funds
 - Investors do not need a digital wallet
 - **Cryptocurrency futures** are **cash settled**, with no actual cryptocurrency changing hands
 - **Cryptocurrency exchange-traded funds** such as ETFs, seek to **replicate digital asset investment returns** by cash and derivative positions
 - **Cryptocurrency stocks**
 - **Hedge funds investing in cryptocurrencies**
- Digital forms of investment for non-digital assets
 - **Asset-backed tokens** is **digital claims on physical assets, financial assets, or financial instruments**, which could **increase liquidity** by allowing for fractional ownership of high-priced assets, which allows multiple investors to possess a fractional interest of the same asset

二. 另类投资的资产类型【15】



王牌陈讲CFA

一份耕耘 一份收获 未必
九份耕耘 一份收获 一定

