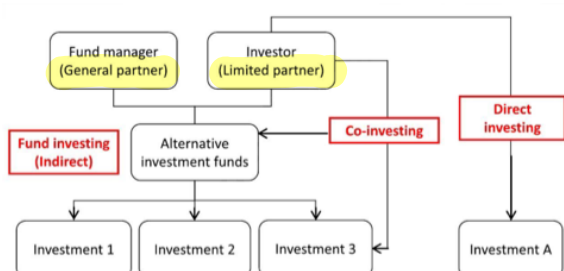# Alternative Investments

1. Introduction

1) Characteristics
① Higher return
★ ② Low correlation
③ less regulation / transparency
④ narrow manager specialization
★ ⑤ limit historical data
★ ⑥ Unique legal & tax consideration
★ ⑦ Higher fees
⑧ concentrated portfolio
⑨ restriction & redemptions

2) Methods

• 采用 Indirect·Methods
  ADV.: ① 用少量资金即可参与
       ② 可以多投几样 分散风险 (Diversification)
  DISADV: ① Fees高
        ② CDD on Fund.

• 采用 Direct Methods
  ADV: ① Fees低 ② Flexibility
       ② 对 Asset 灵活的控制权.
  DISADV: ① 需要专业性 ② 只能投几样·diver 困难
        ③ CDD要求高 要做每个 Asset.
        ④ 基础投资额 更大

• 采用混合方式
  ADV: ① 从 GP 处学习吸取经验
  DISADV: ① 控制力不足 ② Adverse selection Bias

[Performance]
① Sharpe ratio: $(r_p - r_f)/\sigma_p$.
   但. 由于 AI return 的分布 平显 skewed sharp 失灵
② Sortino ratio: $(r_p - r_f)/\sigma_d$.
   好 sharpe 有修正. 但仍未参考与传统的correlation
③ Treynor ratio $(r_p - r_f)/\beta_p$
   相对较好·结合了 r_p 与 systematic risk.
④ PE: multiple of invested capital (MOIC)
   & money multiple
⑤ Real-estate: Capitalization rate / cap rate

2. Hedge Fund.

1) Characteristics
① Aggressively managed ──→ margin call 放大 loss
② Aim at high returns, with few restrictions
③ Limited no. of investors + large initial invest
④ Lockup + notice period.

2) Fund-of-Funds
  好: • Diversified   弊: • more complex fee structure
      • 更长的赎回条件   • Higher total costs
      • Accessible to retailers
      • CDD

3) Strategies   market timing
① Event-driven   ──→ 看 overvalue/undervalued
                  (Market Neutral)
② Relative value   ③ Equity Hedge ──→ Bottomup
  [有关 Fixed income.] ④ Macro

4) Fees
① Management fee: 固定比例
   看清 �ち期初 还是 期末的 value?
② Incentive fee:
   { (Profit − management fee) × a%
   { Profit × a%
   特殊 { High Watermark → 超分前期高水位才算
       { Hurdle rate { Hard → 超过 Hurdle 才算
                    { Soft → 超过 Hurdle 后全发
③ 定制化费用
   a. liquidity & Size & Performance 影响费用
   b. Founder's shares (优惠)
   c. "Either/or" 看 management 与 Incentive 哪所高
      (优先)

5) Valuation
① Common approach: $\dfrac{bid + ask}{2}$
② Conservative : bid for long & ask for short

无 market price时, 可能:
① "mark-to-model" bais
② 高估了 return
③ 低估了 volatility
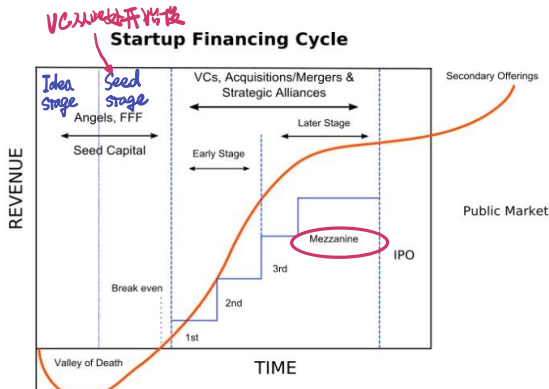
3. Private Equity
① VC → start-up - private company
② LBD → mixture - public company
{ management buyouts 原班人马
{ management buy-ins 走马换将

Startup Financing Cycle

VC从此处开始投资

[退出机制]
① IPD ② Trade sale 卖给行业内大佬
③ Secondary sales 卖给其他PE
④ Recapitalization ⑤ write-off/Liquidation

[收益与风险]
① Higher return ② illiquidy & leverage risks
③ survivorship bias & backfill bias
④ 容易低估 volatility & correlation

[FEEs]
① management fee: 也 "invested capital"× on committed capital
② Incentive fees.
  1) Water falls
    • American waterfalls (deal-by-deal)
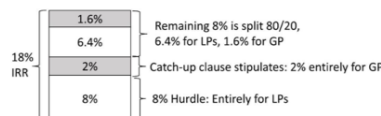   每个deal单算incentives 不管整个fund是否能
    在谈度的profits → 有利 GP
    • European waterfalls (whole-of-funds)
    整体加总后. 能产生profit 份额→有利 LP
  2) Claw back provision
    "claim part of the GP's performance"
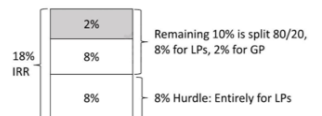 3) Catch-up clause 本质是 "soft hurdle"是一致的

Example: GP profits **with a catch-up clause**

1.6%	Remaining 8% is split 80/20, 6.4% for LPs, 1.6% for GP
6.4%	
2%	Catch-up clause stipulates: 2% entirely for GP
8%	8% Hurdle: Entirely for LPs

18% IRR

GP earns 2%+1.6%=3.6% (18%×20%=3.6%)

$\rightarrow$ = 20% × 18% IRR

Example: GP profits **without a catch-up clause**

2%	Remaining 10% is split 80/20, 8% for LPs, 2% for GP
8%	
8%	8% Hurdle: Entirely for LPs

18% IRR

GP earns (18% - 8%)×20%=2% < 3.6%

= 20% × (IRR - hurdle rate)

[PD]
• Direct lending
• Venture debt
• Mezzanine debt
• Distressed debt
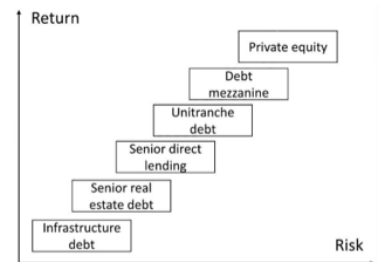
3. Other Alternative Investment
1° Commodities
  1) Index 用 future定价.
    ↳导致. Index 与 physical commodities 脱钩
  2) Benefit
    • hedge against inflation risk
    • low correlation & Diversified.
  3) Pricing:
    $F = S_0 \times (1+r)^T + G - I$
    convenience yield.
    { contango: $F > S_0$. (C>I.)
    { Backwardation: $F < S_0$ ⇒ 便利高)

2° Land ⟹ international competitive content
- low liquidity   • high fixed costs
- weather vs. CFs & revenue.
1) Timberland: Flexibility ⟶ large sizes
   板材可以选什么时候取材
2) Farmland: Hedge inflation & less Flexibility
   (rigidity of production)

3° Real-estate. ⟶ 直接投资房地产并可以减税
- Appraisal Index: 主观. 估低了
- repeat sales index: sample selection bias
- REIT Index: "public traded shares of REITs"
  (有市场下行期的correlation) ⟶ more frequently-traded = reliable.
  REITs 给投资者分而可提模前收益
- 使用 capitalization rate 评估 performance.

4°. Infrastucture.
   • PPPs
   { Brownfield: low risk & stable prospects
   { greenfield: Higher risk. & High prospects for 「