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The Illiquidity Premium Revisited – Can Pension Funds Access this?

EPFIF

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Some of the graphs/pictures are not
available online

Introduction
Illiquid Asset Investing – A Clear Cut Case?

"American **investors**, particularly those with long time horizons, **pay far too much for liquidity**."

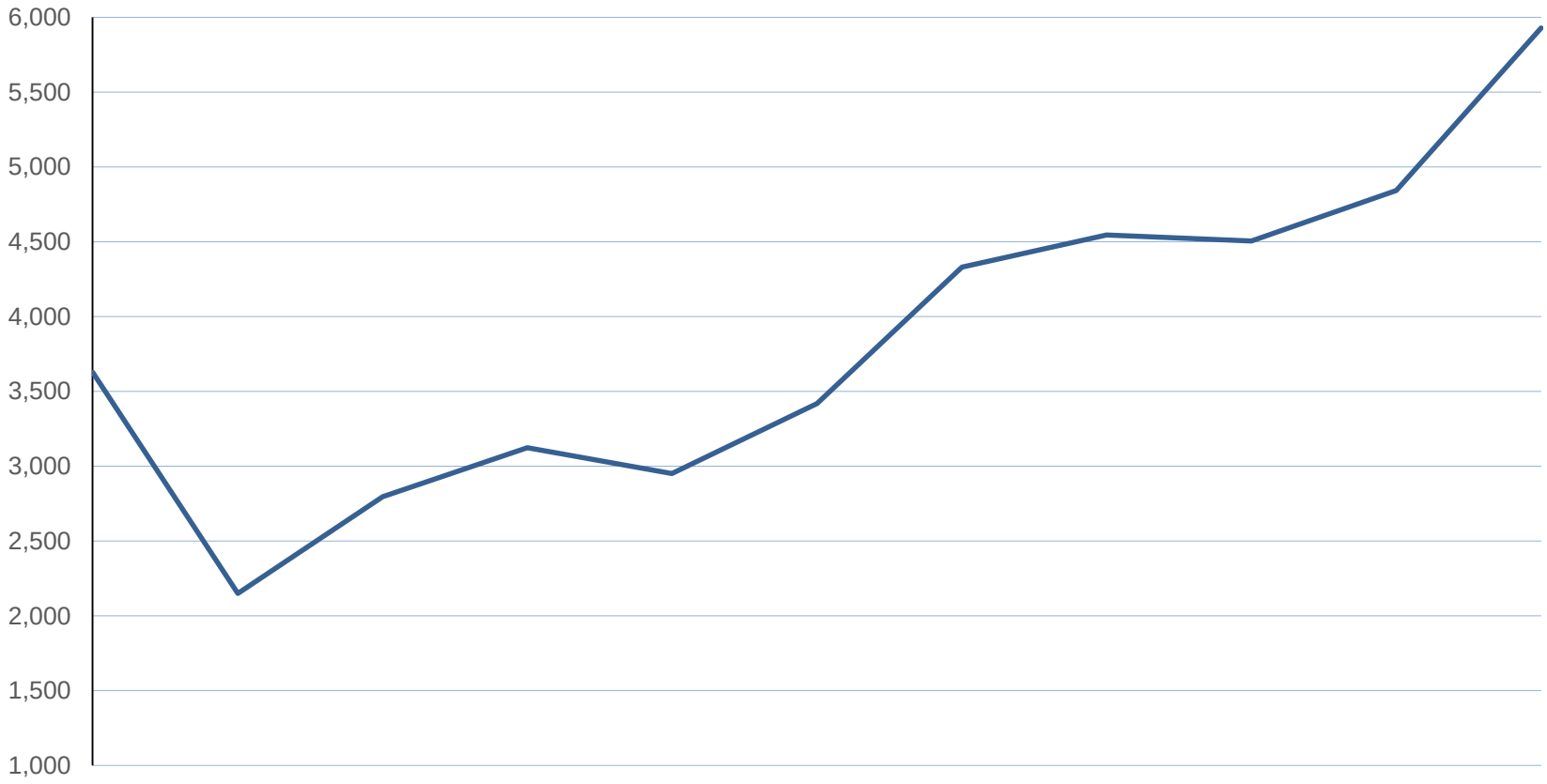
David F. Swensen, CIO Yale Endowment

Source: Economist (2000)

Source: http://investments.yale.edu

Introduction
Illiquid Asset?

Illiquid vs. liquid assets



Source: Bloomberg, own calculations

Introduction
Illiquid Asset?

Illiquid vs. liquid assets

Source: Bloomberg, own calculations

Introduction
Definition of Illiquid Assets

Illiquid refers to the state of a security or other asset that **cannot easily be sold** or exchanged for cash **without a substantial loss in value**.
Illiquid assets may also be hard to sell quickly because of a lack of ready and willing investors or speculators to purchase the asset.

Source: http://www.investopedia.com

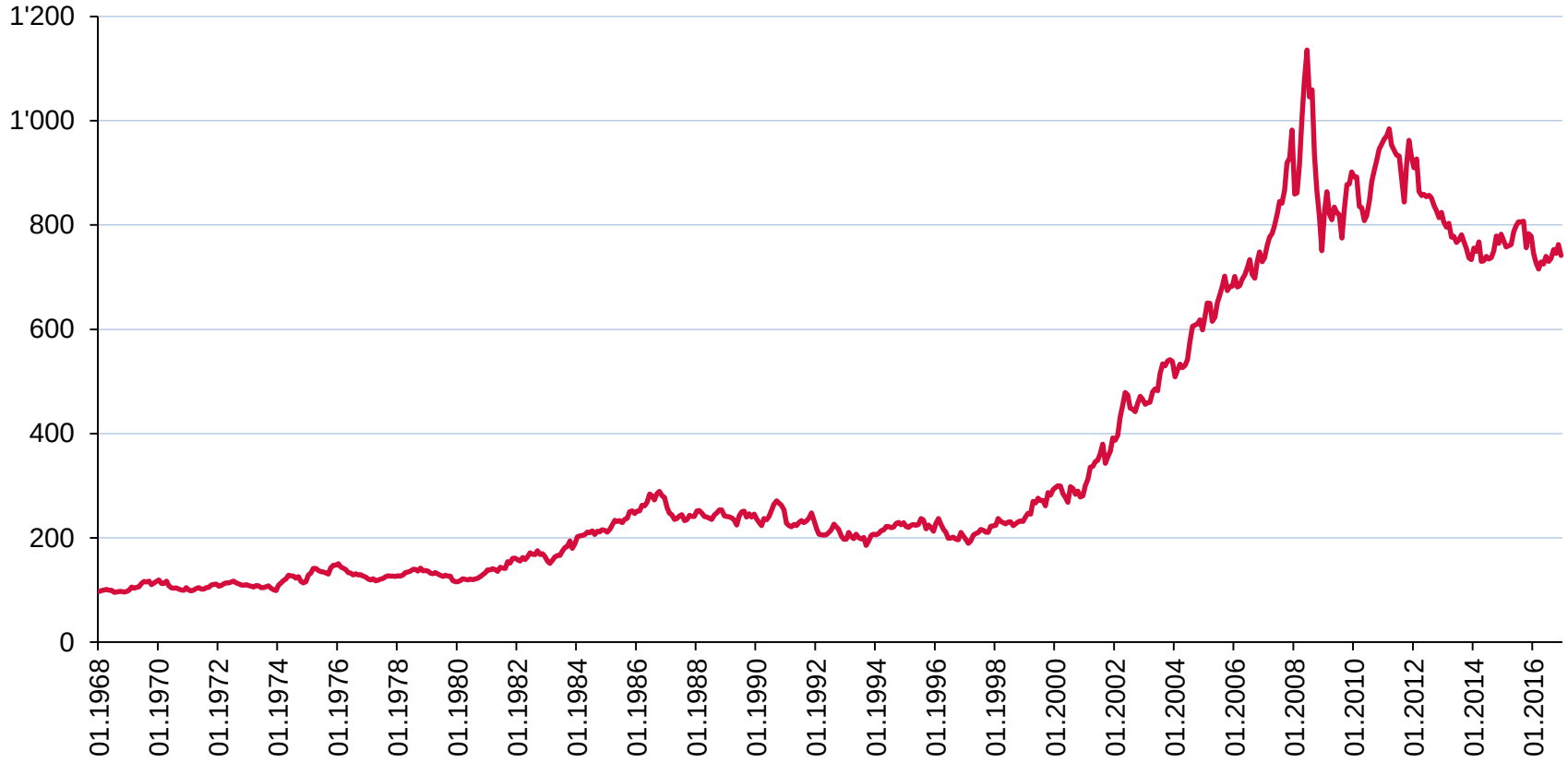
- As a consequence, investors demand an **illiquidity premium**. What's it's **size**? Is it **time-varying**?
- How can pension funds **harvest** this premium?
- Is the **illiquidity premium** beside the obvious illiquidity **a free lunch**?

Illiquidity Premium
Across Asset Classes

Source: Illmanen (2011)

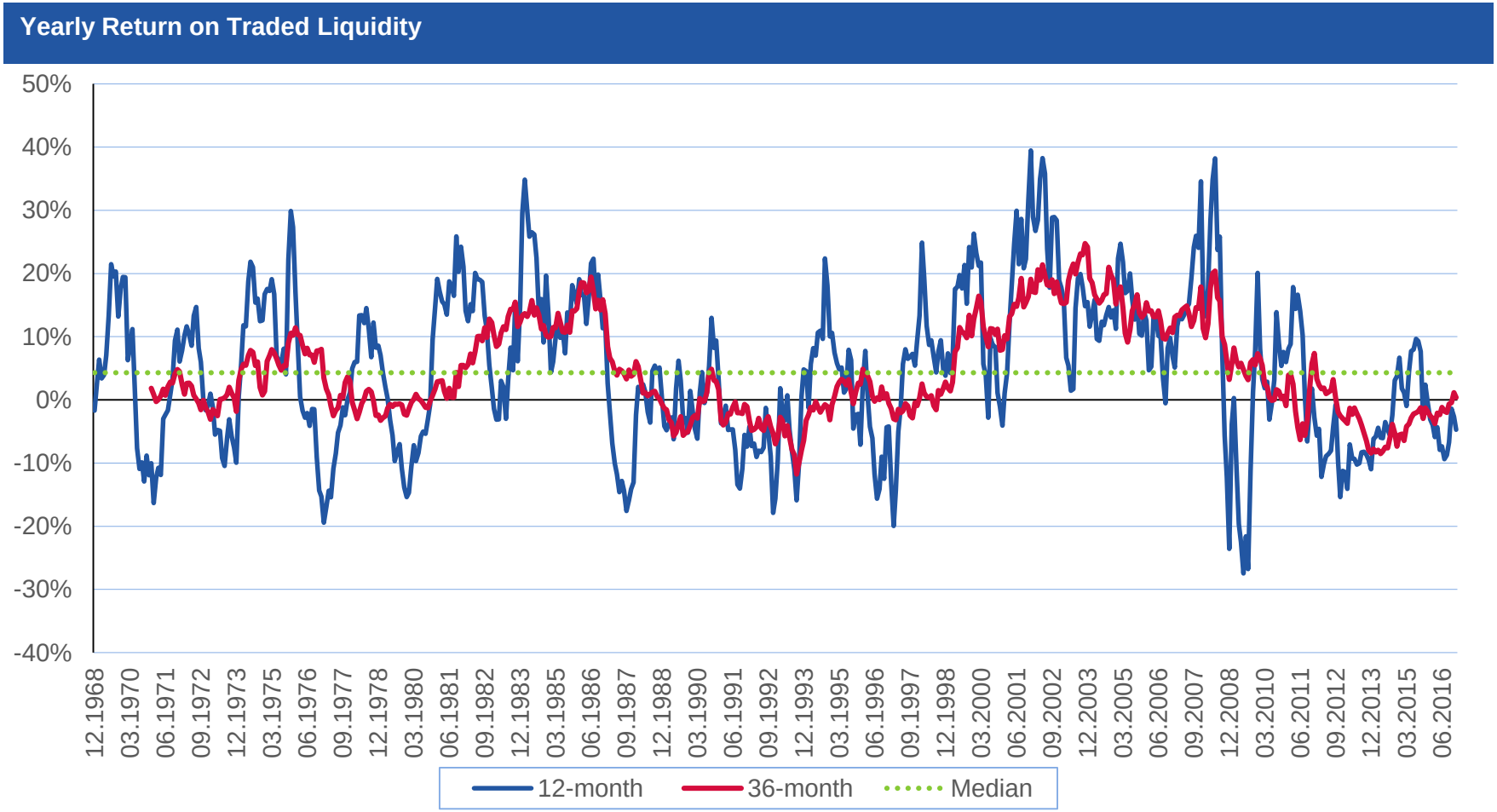
Illiquidity Premium
Within an Asset Class

Cumulative traded liquidity return, i.e., return of 10% most illiquid vs. the return von 10% most liquid shares (31.12.1967 = 100)



Source: Data from Pastor's Website, own calculations

Illiquidity Premium
Time-Varying



Source: Data from Pastor's Website, own calculations

Illiquidity Premium
Capturing the Premium

There are **three ways for pension funds to harvest illiquidity premiums**:

1. **Strategic allocation to illiquid assets** (e.g., real estate, private equity)
2. **Security Selection:** Invest in more illiquid assets within an asset class (e.g., small cap equity, corporate bonds with small issue sizes)
3. **Dynamic strategies** (e.g., counter-cyclical rebalancing ⇨ providing liquidity during stress periods)

- Usually, pension funds deliberately use option 1), but are exposed the other two options.

Watch Out
Potential Problems

Performance measurement and benchmarking

Fee transparency

Less flexibility (tactics!)

Legacy for successor

Patience and long breath

Problems with rebalancing

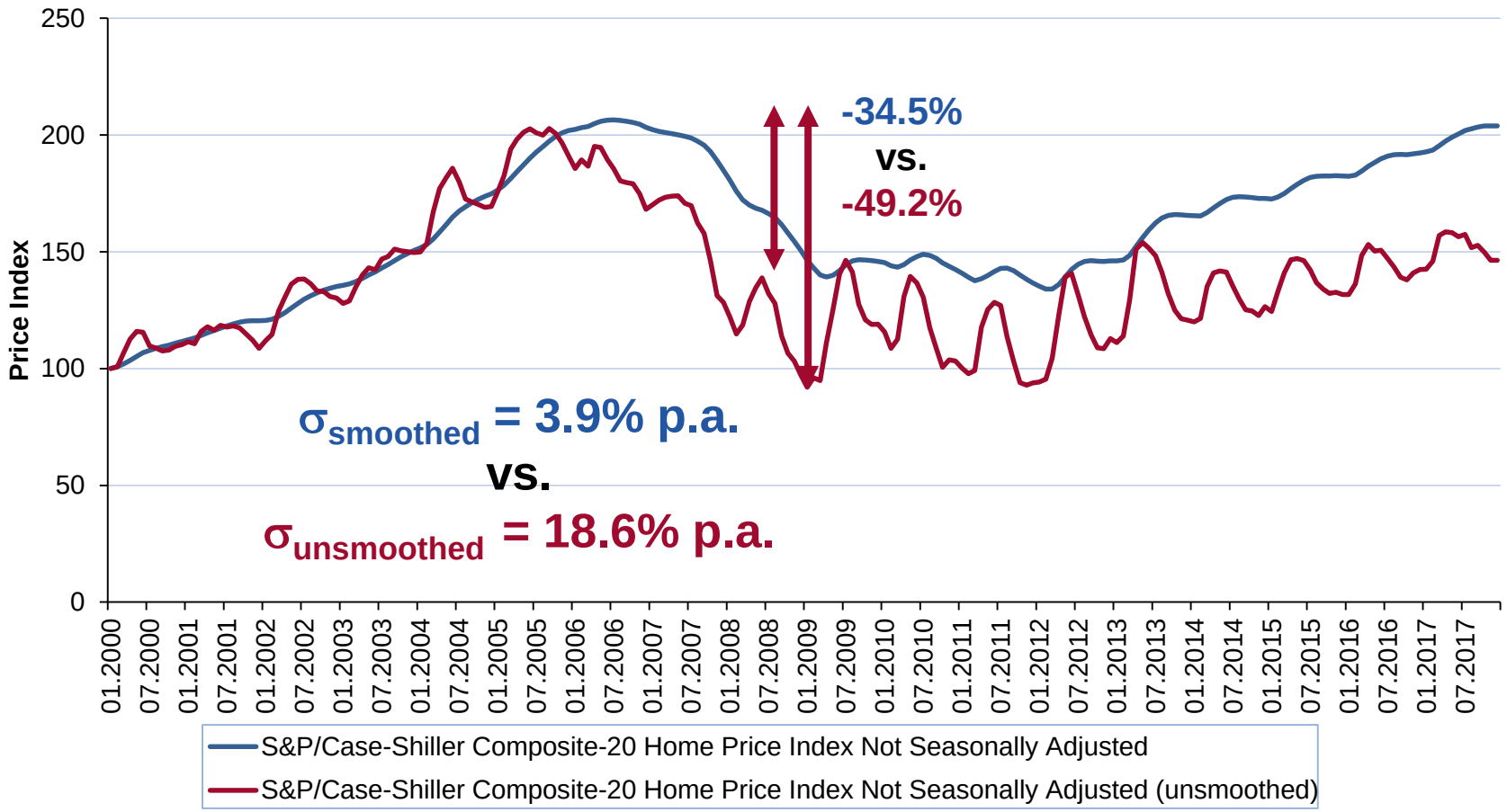
Run for illiquid investments reduces premium

Governance risks

Measurement problems (i.e., returns, volatility, correlations)

Watch Out
Measurement Problems

S&P/Case-Shiller Index



Source: Bloomberg, own calculations

Watch Out
Problem of Self-Selection

e.g., Self-Reporting

⇨ **Overestimation of Alpha**
⇨ **Underestimation of Risks**

Source: Ang (2011)

Watch Out
IRR Marketing

- Have you ever met a private equity manager that is **not in the top quartile**?
- **77% can claim this** when GP are free to creatively choosing:
  - The data source (Preqin, Cambridge, …),
  - The vintage year (ambiguity)
- **IRR as a performance measure** does not take into account:
  - **Market performance**
  - **Risk**
  - **Not comparable with other asset classes** (even hard to compare funds)
  - Does not **distinguish between borrowing and lending**.

Source: Peracs (2013)

Watch Out
Risk vs. Return

- **«We add value through leverage»: Example**
  - PE fund buys a company for EUR 500 million, Cost of debt = 5%.
  - After a year, the fund can sell it for 600 million (good scenario) or 510 million (bad scenario). Each scenario has equal probability.

Equity	Debt	Leverage Ratio (D/E)	Return			
			Good Scenario	Bad Scenario	Mean	Volatility
500	0	0%	20.0%	2.0%	11.0%	12.7%
400	100	25%	23.8%	1.3%	12.5%	15.9%
300	200	67%	30.0%	0.0%	15.0%	21.2%
200	300	150%	42.5%	-2.5%	20.0%	31.8%
100	400	400%	80.0%	-10.0%	35.0%	63.6%
50	450	900%	155.0%	-25.0%	65.0%	127.3%
20	480	2400%	380%	-70.0%	155.0%	318.2%

Soruce: Phalippou (2011)

Watch Out
Return Interpretation Problems

- **What was the best private equity investment?**

Year	Equity Return	Cash Flows		
		PE I	PE II	PE III
1		-20	-20	-20
2	-34.1%	-20	-20	-20
3	23.2%	-20	-20	-20
4	2.9%	90	60	120
5	-7.7%	0	0	0
6	17.7%	0	0	0
7	24.6%	0	50	100
IRR		21.7%	20.7%	52.6%
MIRR@0%		14.5%	10.63%	24.18%
TVPI		1.50	1.83	3.67
PME	1.00	1.44	1.55	3.09

Hint: PE III equals PE II with double leverage (without cost of debt).

Watch Out

Strategic Asset Allocation with Illiquid Assets

Things to keep in mind for strategic asset allocation with illiquid assets:

1. **Difficult to calculate risk and return characteristics** (even more uncertainty)

   ⇨ Potential solution: Factor models, unsmoothing, and correction for sample selection

2. **Determine the optimum and maximum amount of illiquid assets**

   1. Structure of liabilities
   2. Rebalancing problems

   ⇨ Potential solution: Simulation to set-up optimal strategy

3. **No tactics or limited tactics possible**

   ⇨ Potential solution: Acceptance

Watch Out
Agency Problems

- Management of illiquid assets is **delegated to managers**, which arises **agency problems**.
  ⇨ **Importance of optimal contracts**
- Optimal contract design is still work in progress, but…
  - … why are contracts **so complicated** (and still far from optimal)?
  - … why investors **do not have much control** over the investment?
  - … why is **investment reporting not so helpful** (e.g., interpretation of IRR)?
  - … why are **travel expenses funded by the fund**?
  - … why are **fees so intransparent**, so **high**, so **complicated**, and **arise even more agency problems** (e.g., fees on commitments, performance fees)?

Watch Out

Agency Problem Example: (Intransparent) Fee Structure

- **Example: Catch-up in private equity**
  - Return of 12% p.a. (after management fee)
  - Carried interest 20% after a hurdle rate of 8%

	100% Catch-up		No Catch-up	
	LPs	GP	LPs	GP
First 8%	8%		8%	
Next 2%		2%	1.6%	0.4%
Remaining 2%	1.6%	0.4%	1.6%	0.4%
Total	**9.6%**	**2.4%**	**11.2%**	**0.8%**

  - **Fees can be much higher depending on «small» details such as a catch-up. [1]**

* In this example roughly 60%, assuming a management fee of 2%

Case Study: Liquidating Harvard
Performance

Source: Ang (2014)

Case Study: Liquidating Harvard
What happend?

- **Harvard Endowment lost -22% between July 1 and October 31, 2008 ⇨ USD 8 billon**[1]
  - The **«real» performance was even worse** due to a large stakes in illiquid assets («mark-to-model»). In need of cash, they tried to sell part of its private equity portfolio, but discounts to NAV were huge.
  - Since Harvard relied on endowment earnings (roughly 30%), it had to cut cost. However, mostly they borrowed money to cover their cost.
- **So has the «endowment» model failed?**
  - No, but Harvard Endowment Fund **failed with its asset and liability management** (especially with illiquid assets).
  - Even more **important for pension funds**

[1] Allocation 2008: 55% in hedge funds, private equity, and real assets, 30% in developed market equity as well as bonds, residual in EM equity and high yield bonds. (see Ang (2013)).

Take-Aways

1. There is an **illiquidity premium**.
   - However, it is **time-varying** and ex post it **can be negative** over some investment horizon.
   - The **higher the demand** for illiquid assets, the **smaller the** illiquidity **premium**.
2. There might be a **higher potential for alpha** (Swensen and Ellis (2000)).
3. There are **several possibilities to harvest** an illiquidity premium.
4. Evaluation of illiquid assets should be done **with much care**.
5. Be critical and **avoid major pitfalls**.

Appendix
Differences to Liquid Assets

Liquid Assets	Illiquid Assets
Mostly traded in centralized markets	Traded OTC
Easy accessible	Difficult to trade
Small transaction costs	Medium to large transaction costs
Objective and real time value through market pricing	Valuation is subjective and infrequent
Short term investment horizon possible	Long term investment horizon needed
Contracts are standardized and transparent	Contracts are often complex and unique

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