



**Actuaries
Institute**

Long-Term Investing: An Institutional Investor Perspective

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Agenda

1. About the research

2. What characterises a ‘long-term investor’?

3. Benefits

- Advantages and strategies
- Drill down on illiquidity and dynamic strategies

4. Pitfalls to avoid, hurdles to overcome

- What makes long-term investing *difficult* to do
- Solutions to selected problems

5. Designing an investment organisation for long-term investing

About the Research

- Long-term investing from **perspective of institutional investors**
- Research undertaken by **CIFR; with the Future Fund** providing guidance, insight and examples based on its experience

- **Outputs:**

Major report, comprising three papers:

Paper 1: Determinants of Investment Horizon

Paper 2: Benefits (and Pitfalls)

Paper 3: Designing an Investment Organization

Additional papers:

Long-term Investing as an Agency Problem (*with David Neal*)

Portfolio Construction & Performance Evaluation for Long-term Investors

Papers can be found on SSRN (via CIFR website)

Characterising Long-Term Investing

- **No clean and tidy definition.** No underlying theory either.
- **Two indicators** proposed:
 - 1. Discretion over trading**
 - Almost a necessary condition. Closely related to funding.
 - 2. Approach to investing, especially the information used**
 - Focus on drivers of long-term value and returns ('*investing*');
as *against* drivers of near-term price changes ('*trading*')
- **Why not holding period?** Long-term investors *need not* hold for a long period. They only need to set their sights on the long-term.
(*The optimal path need not be buy and hold – Merton, etc*)

Consider the following

- Imagine you are a “long-term investor”.
- You buy an asset that offers strong growth in cash flows over the next 20 years. Your long-run expected return is 15%.
- The asset price suddenly triples. The expected return is now 6%. And there are other assets out there offering much better returns.
- What do you do?
 - A. Continue to hold. (You bought for the long-term.)*
 - B. Sell, and direct the proceeds elsewhere.*

Four Investors

	Investor A	...	Investor B	Investor C	...	Investor D
Horizon	End of Next Period <i>(Short)</i>		Some Future End-Point <i>(Medium-Long)</i>	Some Future End-Point <i>(Medium-Long)</i>		Perpetual <i>(Infinite)</i>
Approach	Maximise Next Period's Return		Buy-and-Hold, Then Liquidate	Willing to Trade Along the Way		Buy-and-Hold; Never Sell
Focus	Price Changes <i>(Note: Cash generated secondary; reinvestment irrelevant)</i>		Return Over Holding Period = End Price + Cash Generated + Reinvestment	Cash Generated + Reinvestment + Optimal Strategy		Cash Generated + Reinvestment

Advantages Held By Long-Term Investors

Overarching advantage: a broader opportunity set.

Able to do everything that a short-term investor can do, plus some

Three specific advantages:

1. Capacity to adopt and hold positions with uncertain payoff timing

Examples: value investing; long-term themes

2. Ability to exploit opportunities generated by short-term investors

Examples: risk premium capture; providing liquidity when valued

3. Latitude to invest in unlisted and/or illiquid assets

⇒ Wider opportunity set / diversification / value-add opportunities*

Eight Strategies Suited to Long-Term Investors

1. Capture of **risk premiums** related to concern over short-term risks
(Market risk premium; volatility; illiquidity; commodities (backwardation); reinsurance; pricing of relative performance risks)
2. **Liquidity provision** *(e.g. be the buyer of last resort in crises)*
3. **Value investing** *(open-ended timing of payoff)*
4. Pricing discrepancies across **segmented markets** *(open-ended timing)*
5. Long-term **thematic** investing *(slow-moving, persistent trends)*
6. Value-add via **control & engagement** *(unlisted assets; universal owner)*
7. **Complex assets** *(discounts for opaqueness that will take time to resolve)*
8. **Dynamic strategies** *(buy when $E[r]$ high, sell when low; cash as an option)*

Illiquid Assets – Source of the Opportunity

Net Return is what matters. But it tends to be unobserved, as transaction costs are investor-specific and often not visible.

It is the realization of Gross Market Return that is typically observed in the data.

Cost is not readily observed in the data, and must be estimated. Further, it varies across investors and time.

Compensation for:
a) Expected costs
b) Illiquidity risk (*illiquidity risk premium*)

$$E[\text{Net Return}] = f(E[\text{Gross Market Return}] - E[\text{Cost}])$$

$$\text{Gross Market Return} = \text{Return on Liquid Equivalent} + \text{Compensation for Illiquidity}$$

$$\text{Cost} = f(\text{Entry Cost}, \text{Exit Cost}, \text{Other Costs})$$

Entry Cost may be known upon investment; but effect on net return p.a. depends on how long asset is held.

Exit Cost is investor-specific. It depends on:

- When (or if) sale occurs, and ...
- Cost at time of sale (including market impact, tax)

Discretion over trading is critical:

- *Lack of discretion* => possibility of becoming a forced seller, potentially into a weak market
- *Full discretion* => capacity to compare exit cost vs. implications of continuing to hold

Other Costs include aspects like research, search, monitoring, and maintaining positions; including any liquidity and capital commitment costs. These costs are typically larger for illiquid assets.

Illiquid Assets – Advantage Held By LT Investors

- Long-term investors are **less impacted by costs and risks** of illiquidity.
- **Discretion over trading is central.**
- Lower exposure to the **higher costs** of investing in illiquid assets:
 - Mainly relates to **transaction costs**:
 - Amortized over longer expected holding period
 - Discretion to choose conditions of exit => can manage the trade-offs
 - **Other costs** relate to locating and maintaining investments, including liquidity management and capital commitment
- Lower exposure to the **higher risk** of investing in illiquid assets:
 - Never a forced seller
 - Can ride through (if not exploit) liquidity crises

Illiquid Assets – The Premium Available

- Identity of the **marginal investor** is what matters:
 - Central is the ***premium required to compensate*** the marginal investor for expected costs and risks of illiquidity
 - Long-term investors can benefit if marginal investor has short horizon
- **Implications:**
 - There ***need not be a premium*** available in some markets
 - The premium ***may fluctuate*** over time, and ...
 - Ebb and flow of illiquidity => ***source of opportunity*** for LT investors

Dynamic Strategies – Underlying Concepts

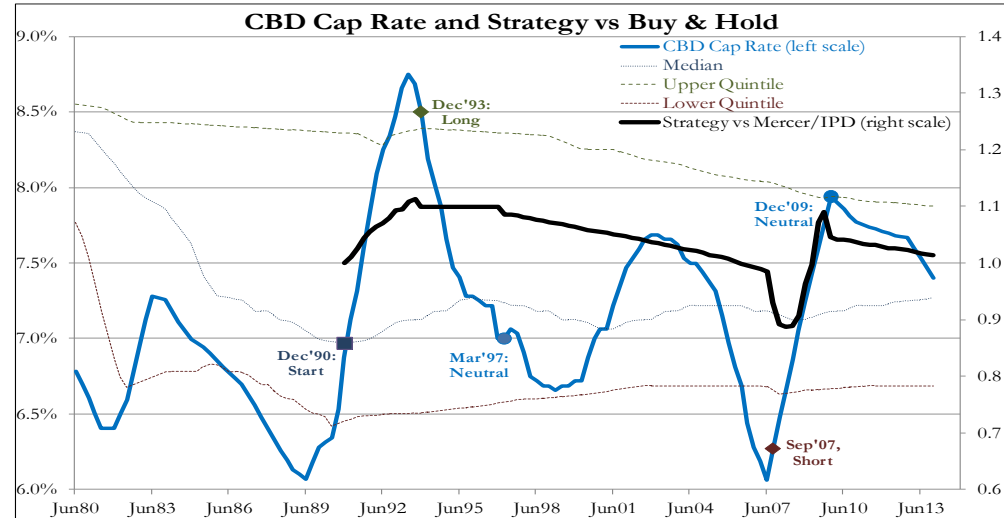
- **Exploiting time-varying expected returns**, with a view to maximising the outcome over the long term. (*Not just mispricing: see Merton, Campbell & Viceira*)
- Consider **two strategies**:
 - a) Go 'long' – to capture high expected returns
 - b) Hold cash – low expected returns; holding out to buy at lower price
(Question: Is there an optimal mix?)
- **Motivations**:
 - If you are thinking capturing mean reversion, you are partly right. *Also ...*
 - Cash as an option; controlling risk (*sitting aside if market is overheated*)
 - Likely source of opportunity is short-term investors being forced to trade due to funding flows, etc (*both inward and outward*)
 - Many investors are hampered by limited discretion over trading; partly through being anchored by mandates or peer comparisons

- **Analysis (Paper 2):**

- Simple “tree” model, and
- Applied example: direct property

- **Concepts:**

- Dynamic strategies can reduce risk, as much as increase return
- Cash has an option value; but there is a time dimension. It matters how soon an opportunity to buy might arise.
- Optimal mix depends on pricing at start. It may be partially invested.
- Relative performance risks: could underperform the buy and hold for extended periods. A long-term perspective is required.



Pitfalls to Avoid, Hurdles to Overcome

- Investing for payoffs that may not arrive anytime soon brings forth a whole range of challenges:

1. Forecasting over long horizons
2. Agency issues
3. Staying the course
4. Commitment required

Implementation issue, that interacts with organisational and behavioural effects

Related to organisational structure. Problems heightened by need to monitor agents; and respond under uncertainty over whether long-term investments will pay-off eventually.

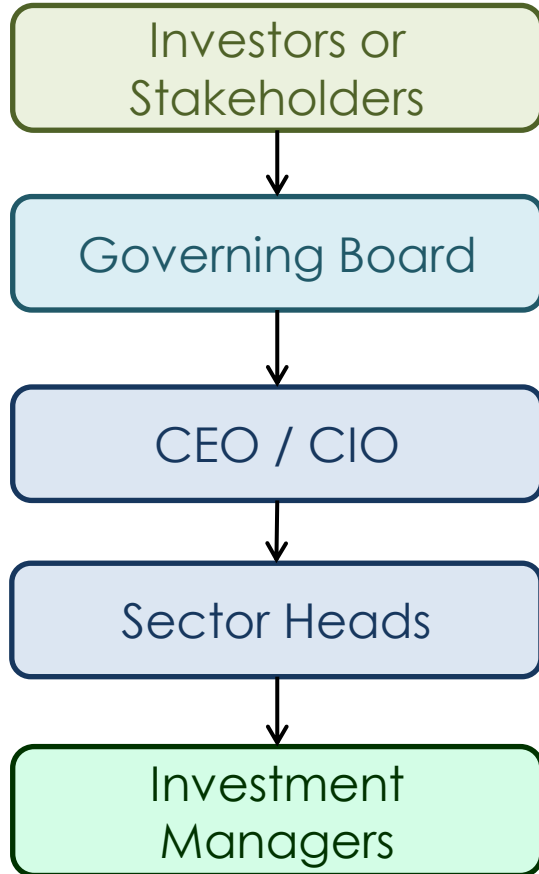
Long term hard to forecast, and highly uncertain

- **When I started my career as an Australian analyst in the 1980s:**
 - Markets were driven by inflation fears; interest rates were 15%-20%
 - PE ratios above 10X were considered far too expensive
 - Media companies were highly prized; and the Australian banks were considered as uninspiring, low-return investments
 - The PC had just been invented; and there was no internet
- **Forecasting the long term is *hard!!!***
 - Potential for regime shifts; outcomes proliferate with horizon; etc
 - Hazy feedback loops -- spotting any error may take time
- **When long-term expectations go awry, it can go pear-shaped ...**
 - You may discover the issue when it is too late
 - Getting out can be problematic
 - *Whereas ... short-term investors can use stop losses, and reset often*

Dealing with Difficulty of Predicting the Long Term

Actions	Quant-Speak
<p>1. Favour positions that arise from the actions of short-term investors:</p> <ul style="list-style-type: none"> – Long-term investing likely to work when the long term is undervalued by the market – Trace opportunity back to short-term behaviors, e.g. forced sellers / buyers; reaction to transitory effects 	<p><i>Base your analysis and decisions on a reputable theory</i></p>
<p>2. Invest with a 'margin of safety'</p>	<p><i>Insist on a confidence interval</i></p>
<p>3. Evaluate investments against range of scenarios</p>	<p><i>Consider the whole distribution</i></p>
<p>4. Continually test the foundation for a position <i>(don't just set & forget)</i></p>	<p><i>Keep updating</i></p>

Agency Problems Can Disrupt A Long-Term Focus



Long chain of delegations, with each link being a principal-agent relationship

Related alignment and monitoring problems:

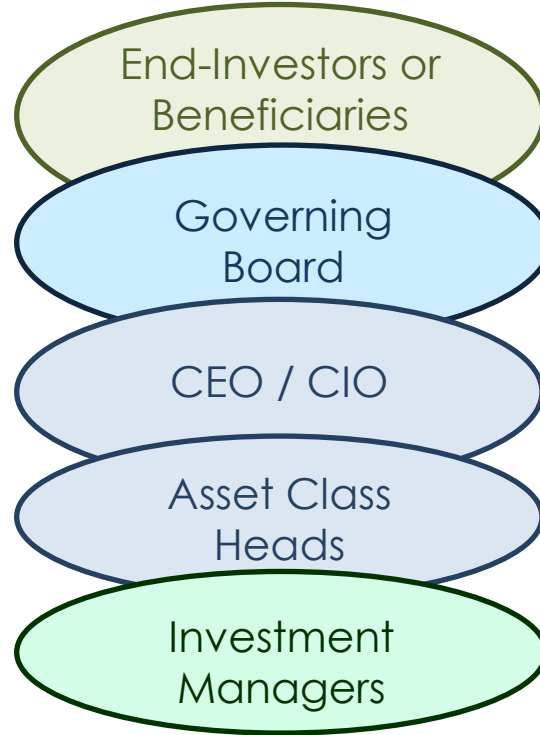
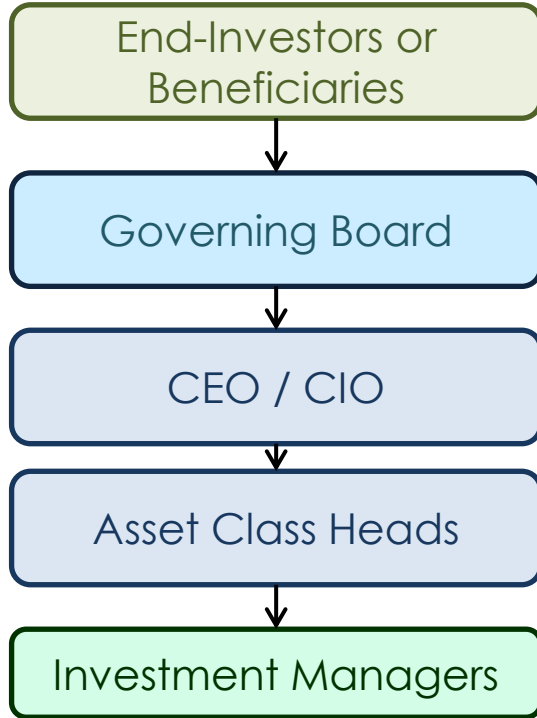
- Principals must monitor agents. The natural tendency is to **evaluate the flow of short-term results** (which are tangible and salient)
- **Incentive structures** reinforce the focus on short-term results: they feed into bonuses, career prospects, and even status
- **Fund flows** respond to short-term performance. This impacts on organisation profitability, and *perceived* capacity to sustain long-term positions.
- **Benchmarks and peer comparisons** used for performance evaluation, and act as anchors

Managing the Agency Problems

Remote Monitoring



Immersed Monitoring



- *Understanding of decisions through engagement*
- *Communication and transparency*
- *Commitment to manager (agent)*
- *Reward actions, not just short-term returns*

=> avoid managing to short-term returns & enhance resilience

Designing an Organisation for Long-Term Investing

Building Block	Key Elements
1. Orient the organisation	<ul style="list-style-type: none"> • Align the organisational settings • Engage to build understanding
2. Set the right incentives	<ul style="list-style-type: none"> • Measure & reward progression towards long-term goals
3. Establish a long-term investment approach	<ul style="list-style-type: none"> • Focus on the long-term and filter out the short-term noise
4. Harbour discretion over trading	<ul style="list-style-type: none"> • Managers should not be <u>required</u> to trade • Increase security of funding • Commit

PROJECT OUTPUTS

Initial project outputs:

Paper 1: Determinants of Investment Horizon

Paper 2: Benefits (and Pitfalls)

Paper 3: Designing an Investment Organization

Follow-up papers:

Long-Term Investing as an Agency Problem (with David Neal)

Portfolio Construction and Performance Evaluation for Long-Term Investors

(See CIFR website, or SSRN)

Supplementary Slides

Dynamic Strategies – A Simple Tree Model

- Two periods, two assets (illiquid risky asset; R_f ... no borrowing)
- Two investor types:
 - Long-term: invests over 2 periods in either asset; may trade period 1
 - Mutual funds: receive flows period 1, must fully invest in risky asset
- Asset performance: $3 * 3$ states each period (= 81 paths)
 - Cash Flow Up, Expected, Down
 - Discount Rate (\Rightarrow *P/CF Multiple*) Low, Medium, High

Note: Period 1 asset return \Rightarrow mutual fund flows \Rightarrow impacts P/CF Multiple
- Aim of the analysis:
 - Find the strategy that optimises the Sharpe ratio for the LT investor
 - Examine the characteristics of investing in cash initially
 - Compare asset-weighted returns for the two investor types

Basic Tree Model – Baseline Results

Investment Strategies			Two-Period Wealth Change (pa)			IRR
	Period 1	Period 2	Mean	Standard Deviation	Sharpe Ratio	
Risk-Free Asset (Rf)	Rf	Rf	4.0%	0.0%	0.00	4.0%
Risky Asset (A), Buy & Hold	A	A	10.4%	13.2%	0.49	10.0%
Short-Term Investor	A	A ± Flows				8.8%
Dynamic Strategies:						
(A) Start with Risky Asset	A 100%	P/CF High => Rf	11.3%	12.2%	0.60	11.0%
(B) Start with Rf	Rf 100%	P/CF Low => A	8.3%	12.0%	0.36	8.0%
(C) Optimal Combination	A 71%, Rf 29%	P/CF High => Rf P/CF Low => A	10.5%	10.2%	0.63	10.2%

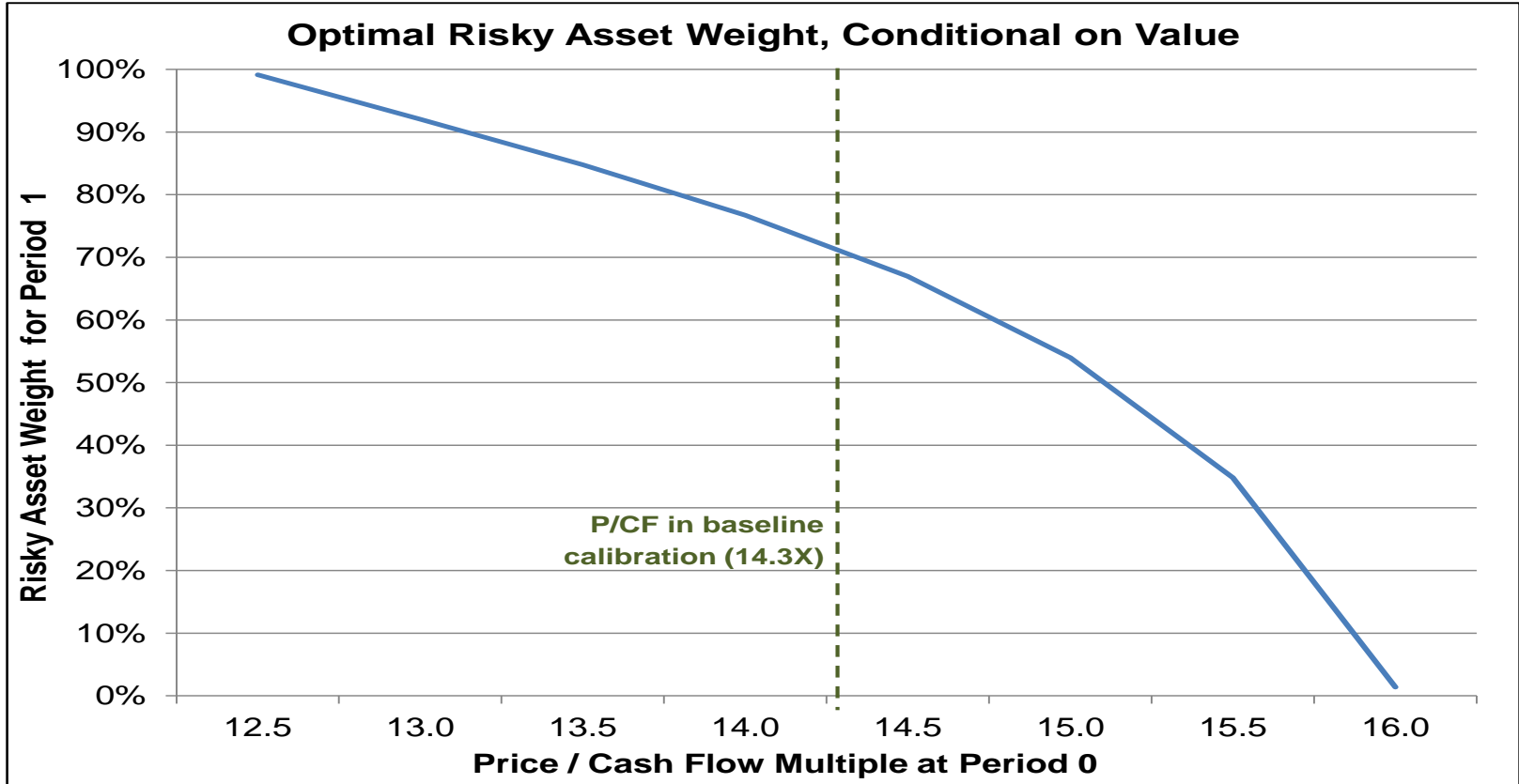
Being willing to sell out can improve returns, plus reduce risk

Starting with only cash is not too attractive, but ...

Holding cash in combination with the risky asset can be beneficial

Mutual funds underperform on asset-weighted basis due to flows

Basic Tree Model – The Starting Point Matters



Dynamic Strategies – Unlisted Property Example

Outline of Dynamic Strategy - Unlisted Property Example

	Portfolio Weight			<i>Realized Portion of Time</i>
	<i>Unlisted Property</i>	<i>Cash</i>	<i>Total</i>	
Targets:				
Long Position	100%	0%	100%	14%
Neutral	80%	20%	100%	76%
Short Position	0%	100%	100%	10%
Realized Average	77%	23%	100%	100%

Trading Rules

Go Long

Cap rate crosses into top quintile

Go Short

Cap rate crosses into bottom quintile

Move back to Neutral

Cap rate crosses the median

Lag from Signal to Trade

4 quarters (1 year)

Transaction Cost - Property

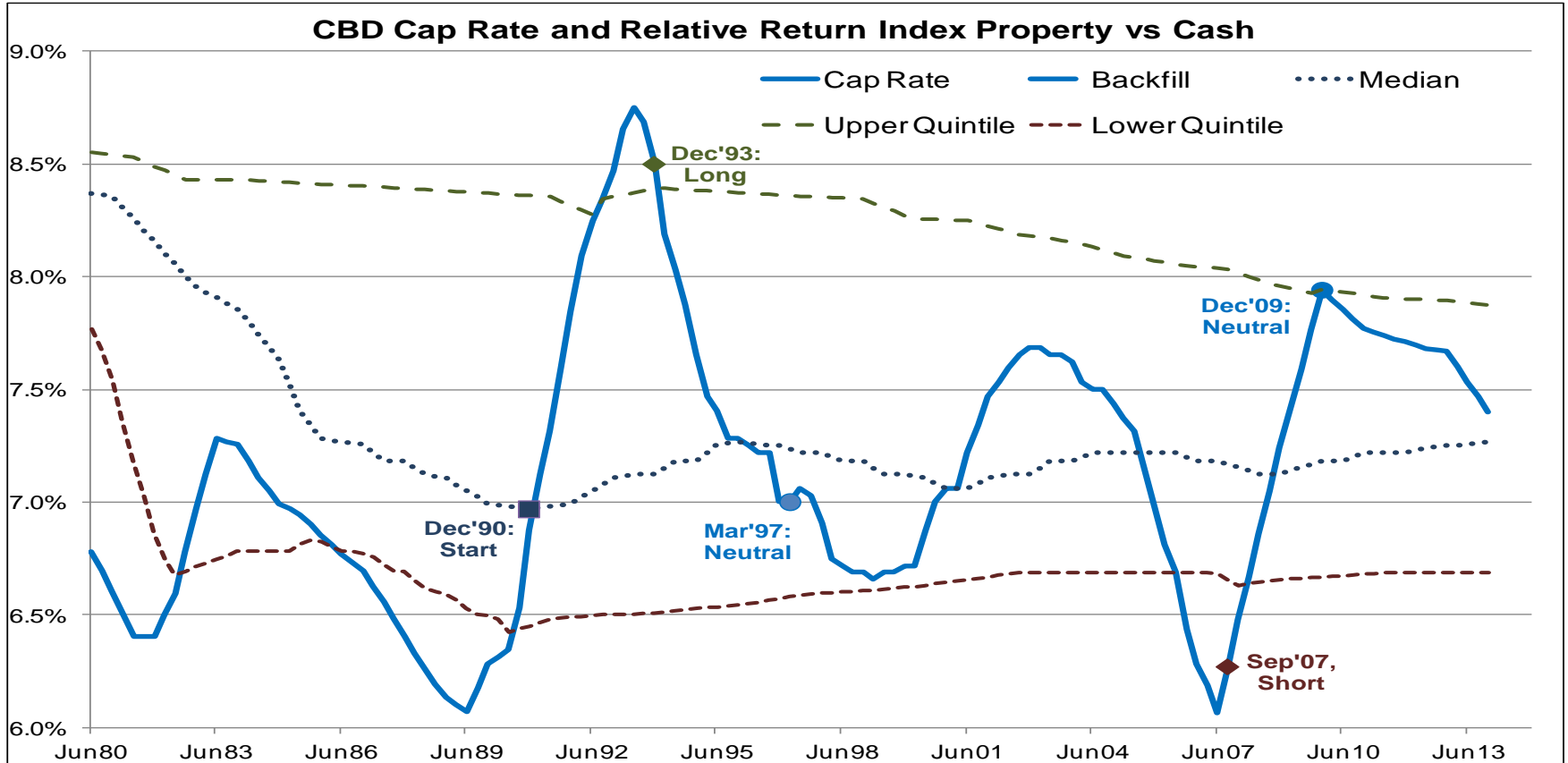
6%

Rebalancing

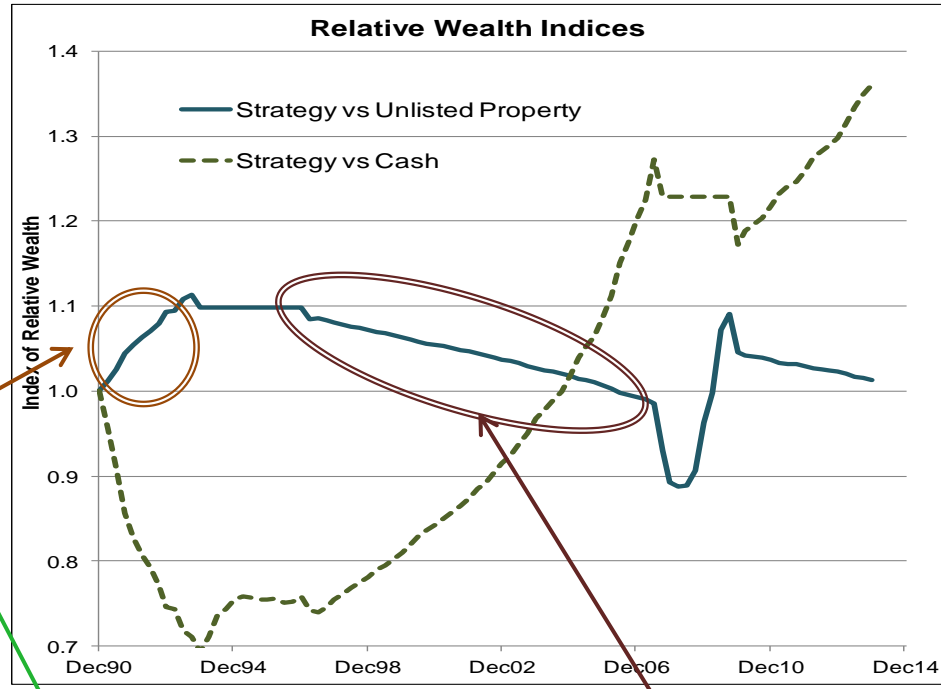
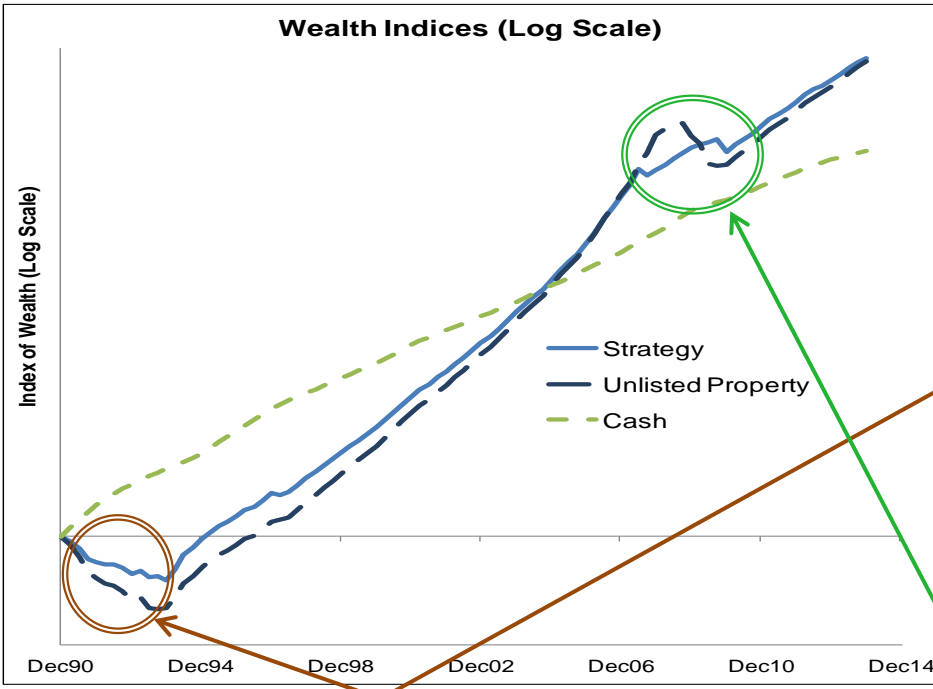
Only when a trade occurs

Note: Median and quintiles for cap rate are 'estimated dynamically'

Unlisted Property Example – Signals and Trades



Unlisted Property Example – How Wealth Evolves



Cash component partly protects from fall

Strategy protects from volatility, but doesn't add much net return

Waiting in cash can have an opportunity cost

1. Orienting the Organisation

Organisational settings directed toward the long-term:

- a) Guiding principles** – mission, purpose, beliefs
- b) Culture** – lead from the top; encourage non-consensus views; trust
- c) Governance & decision structures** – long-term objectives; framing; manage temporal trade-offs and behavioural issues
- d) People** – employ those with predilection towards long-term; tenure
- e) External managers** – extend the principles downwards

2. Setting the Right Incentives

a) Subjective bonus component *(use to reinforce the message)*

b) Calculating bonuses

- Outright deferral is problematic, however ...
- Regular awards plus long-term conditional vesting is interesting

c) Measuring performance

- De-emphasize relative performance
- Measure progress towards long-term objectives
- Attribution into cash flow and discount rate effects

$$\text{Return} = E[R] + \Delta E[R] + \Delta CF$$

d) Direct and co-investment

3. Establishing a Long-Term Investment Approach

- **Difficult to be prescriptive**
 - Value and growth styles can both be long-term
 - Long-term investors might use momentum: the Future Fund does
- **Key attribute is being focused on the long term**
 - Long-term cash flows and long-term expected returns
 - Potential path of expected returns might be considered
- **Risk defined differently from long-term perspective**
 - Shortfall versus long-term objectives
 - Permanent loss of value

4. Harbours Discretion Over Trading

- **Increase stickiness of funding**, if possible:
 - Control over funding depends on the nature of the organisation or the regulations, and may be non-negotiable
 - *Stronger actions will lock-in the funding:*
 - Use closed-end fund structures
 - Provide facility to opt-out of the right to redeem
 - *Weaker actions throw grit in the wheels:*
 - Establish capacity to defer redemption (e.g. gates)
 - Raise switching costs
- **Abstain from pressuring managers** to trade – show commitment

