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Going above and beyond
Stronger investment theory and practice

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Key findings

Investment theory	There are significant limits to mainstream investment theory and how it is used in mainstream investment practice
Investment practice	Investment decision-making relies on accepted and established practice ('folklore') which is essentially backward-looking
Stronger organising principles	• Stronger governance practice captured in mission clarity, values and beliefs, strategy; complexity framework • Framework for long horizon investing, value creation, risk, sustainability • Portfolio construction, incorporating factors and buckets; portfolio quality

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> "Investment theory and practice have evolved considerably over the last fifty years. Despite this there is no generally agreed objective framework for investors that adequately describes how to view capital markets, or how to apply these insights for investment purposes."
>
> - NEST investment belief

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Limitations in "mainstream" theory

Key concepts

- Equilibrium
- Rational expectations
- Complete information
- Representa-tive agent

Key theories

- Efficient market hypothesis
- Capital asset pricing model
- Mean-variance optimisation
- Alpha beta separation

Key issues

- The need to make participants endogenous to the system
- The degree of subjectivity and ambiguity is surprisingly large
- Institutions matter – the impact of their behaviours is significant
- Ethical influence – ethics are unexplored but critical features in the reality of complex settings

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The world as a complex adaptive system

Traditional world-view	Complex adaptive system thinking
Individual action in isolation	Coupled / interacting
Equilibrium	Punctuated equilibria
Stable parameters	Phase transition
Linear	Non-linear
Normal distribution	Power law distribution
iid	Path-dependent
Systemic market risk doesn't exist	Market can collapse from inside
Reductionism is widely applied	Reductionism is dead

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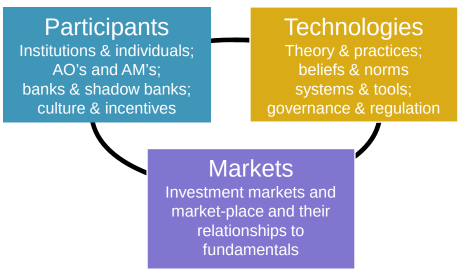
The investment industry defined as a complex ecosystem

1. **Multiplicity:** multiple strands – participants, technologies, markets
2. **Reflexivity:** markets affect and are affected by participants and technologies
3. **Subjectivity:** empirical insufficiency; no universal 'truths', only 'beliefs'; "VUCA" conditions – volatile, uncertain, complex, ambiguous
4. **Multi-disciplinary** to understand the system and its inter-connections you need multi-disciplinary theory
5. **Real-world behaviours** agents and incentives



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Market volatility under alternative theories

Under mainstream theory	Under complexity theory
No variation in beliefs – everyone has complete information and understanding and makes rational decisions	Significant variation in beliefs arises because of uncertainty about future conditions
No pricing-model uncertainty	Considerable pricing-model uncertainty
One way flow: fundamentals affect price and value of financial markets	Financial markets can affect the fundamental values they are supposed to reflect
Probability distribution of financial outcomes is known and stable with no uncertainty	Probability distribution is uncertain
Use of Gaussian or modified normal statistical distributions with fixed parameters	Allow for shifting parameters and fat tails in distributions, having regard to Extreme Value Theory and power laws

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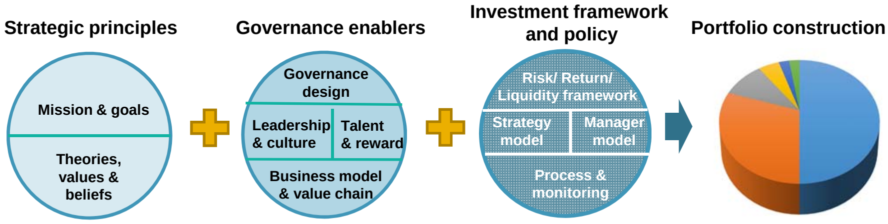
Stronger practice throughout the investment process



The **CIO** has a critical role to play in both asset managers and asset owners in:

- leading the process of forming, maintaining, socialising and evolving beliefs
- defining the framework
- holding the organisation's investment team to account in their respective portfolios

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Stronger investment beliefs

- In the absence of reliable investment theory, there should be stronger application of values and beliefs in the investment process

Investment beliefs are high level principles and conjectures that guide the organisation to content and decisions

Beliefs to become larger part of investment process

Competitive investors have beliefs that are smart and edgy and deeply socialised

Asset managers need to strengthen their organisation-wide beliefs relative to product-specific beliefs

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Stronger framework

Value creation	• Via passive and active management • Strong beliefs in both content and context • Disciplined implementation
Risk	• Multiple facets - impairment to mission • Fundamental building block to return • Unique to each investor
Long-horizon investing	• Return framed more by ongoing income than end price • Asset managers can exploit via several key return drivers
Sustainable investing	• Efficient, inclusive long-term investing • Asset owners: use for long-term investing efficiency *and* responsibility • Asset managers: use for long-term investing; for client mandate; and for own values

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Stronger portfolio construction

Portfolio classification is guided by risk allocation ahead of capital allocation and factors[1] and buckets[2] ahead of asset classes

Portfolio selection is guided by portfolio quality assessed through a range of desired attributes

- Adherence to intended total risk and effective diversification
- Good risk/return trade-off - net returns allowing for risks
- Liquidity and flexibility
- Edge and resources, scalability, simplicity, cost
- Sustainability

1. Equites, duration, credit, insurance, systematic etc
2. Bulk beta, illiquid beta, smart beta, alpha, etc

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Coping strategies in a complex financial market

Extreme clarity and alignment of mission, enablers, policies

Self-understanding	Meta-understanding	Change-adaptable	Strong-cultured
• Assessing organisational capability by breadth and depth • Ability to adjust internal capability	• Understanding what others are doing and why • Using this to understand and exploit comparative advantage	• Preparedness and ability to change mission, strategy and culture • Requires leadership • Requires process	• Culture as a binding force aligning behaviours • Culture has edge • Culture as incremental leaning

Build investment intelligence – capabilities, beliefs, processes

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Questions

Comments

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