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BlackRock

Five Myths About Active Management and Implications for San Jose

Introduction

Pension Plan performance depends on many distinct decisions:

- Strategic Asset Allocation
  - Including an understanding of the liabilities being funded
- Tactical Asset Allocation
  - Including whether to do this at all. It is a very "low breadth" strategy making it hard to deliver consistent performance. More on that later.
- Manager selection within asset classes
  - Including the question of index funds versus active funds.

- This talk will mainly focus on manager selection within asset classes, though we will have something to say about tactical asset allocation too.
- We have organized this talk around five myths about active management.

Myth 1:
All Research Favors Indexing over Active Management

Active versus Index management

Indexing: The Capital Asset Pricing Model and the Efficient Markets Hypothesis:

- Some active managers will outperform and others will underperform, but only at random.
- Investors can expect to outperform only by taking more risk, e.g. by leveraging exposure to the market.
- Indexing is the optimal approach to investing.

Active Management:

- <u>Opportunity</u>
  - Excess volatility (Shiller, 1981)
- <u>Key Sources of Active Returns</u>
  - "Broad and Persistent" / Static
    - Risk Premia (Ross, 1976)
    - Behavioral anomalies (Kahneman and Tversky, 1979)
  - "Narrow and Transient" / Dynamic
    - Informational Inefficiencies (Grossman and Stiglitz, 1980)
  - Other:
    - Investor constraints
    - Occasional opportunistic trading

Source: *The Future of Investment Management*, Kahn (2018). For illustrative purposes only.

The New Investment Paradigm

Historically we thought about this investment choice as Index versus Active.

More recently, we have seen the development of low-cost factor strategies. These focus on risk premia and behavioral anomalies. (These had historically been part of active strategies but are now available at lower cost.)

This leads to the new investment paradigm:

Old	**Index**	**Alpha**	
New	**Index**	**Factor**	**Pure Alpha**

Source: BlackRock. For illustrative purposes only

Potential Implications

For most institutional investors, a blend of active (factor and pure alpha) and index will be optimal. There is no reason to choose just one approach.

Given the arithmetic of active management, investors in active management need to be able to identify top quartile active managers.

Myth 2:
Investors need to seek out active managers who can deliver the highest active returns

Successful Active Management is about Consistent Positive Performance

An active manager who is up 10% one year and down 10% the next year has lost you 1% over those two years. A manager who is up 5% one year and down 5% the next year has lost you 0.25% over two years. You need active managers who can deliver positive returns over longer periods. That requires consistent positive performance.

Successful active management is about delivering high active return relative to active risk. We measure this with the *Information Ratio*, the ratio of active return to active risk.

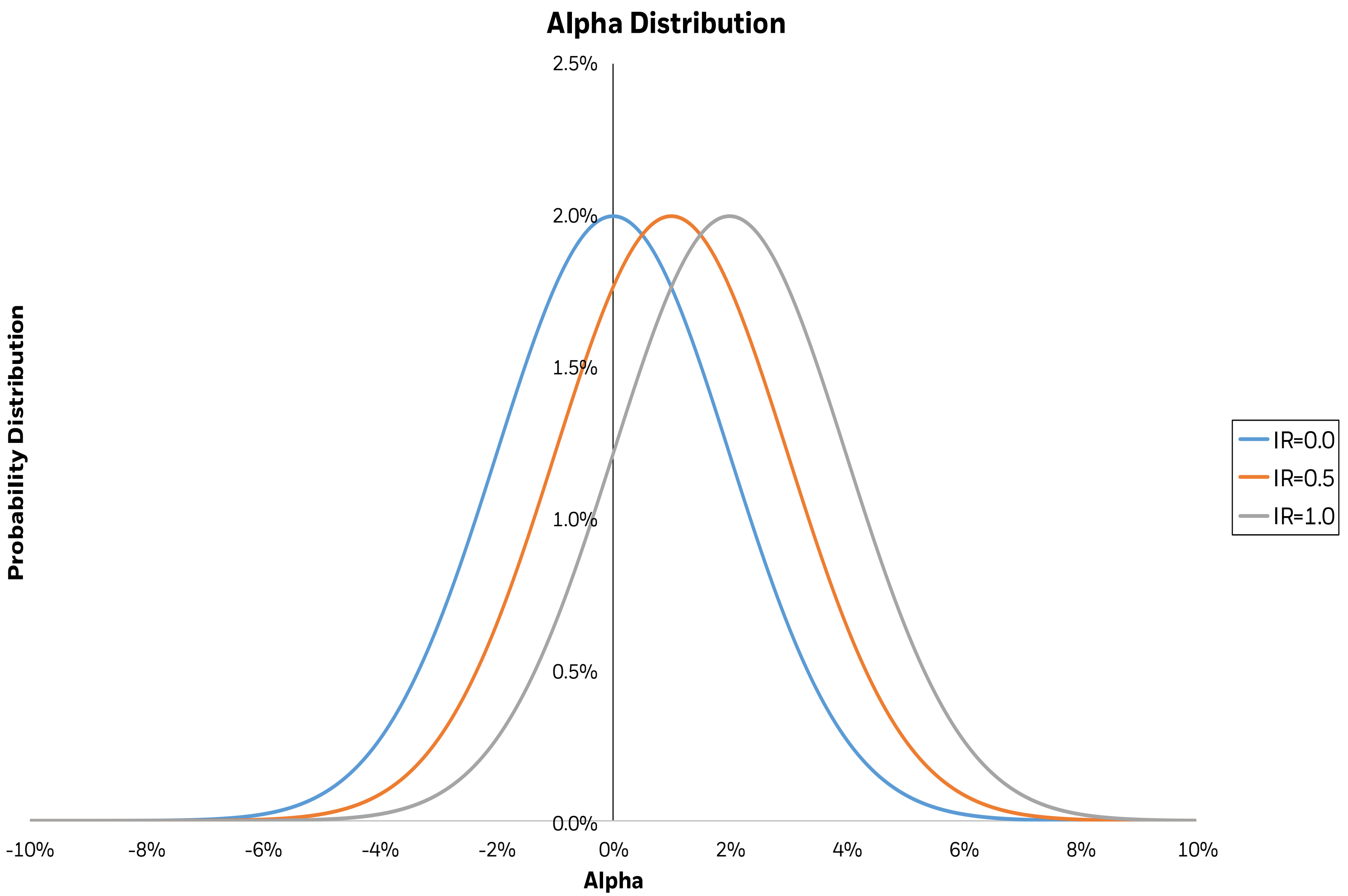
$$IR = \frac{active\ return}{active\ risk}$$

Rule of thumb: a top quartile active manager has an information ratio of about 0.5.

For investors, achieving a high information ratio across their portfolio of managers requires investing in high information ratio active managers who have low correlations with each other. The low correlations will help reduce risk at the plan level.

Source: BlackRock. For illustrative purposes only.

Information Ratios Measure Consistency of Performance



Source: BlackRock. For illustrative purposes only.

Typical Information Ratios

Typical Numbers:

Percentile	IR
90	1.0
75	0.5
50	0.0
25	-0.5
10	-1.0

Source: BlackRock. For illustrative purposes only.

Potential Implications for Investors

Identify and invest with managers who have high information ratios, not just high historical returns.

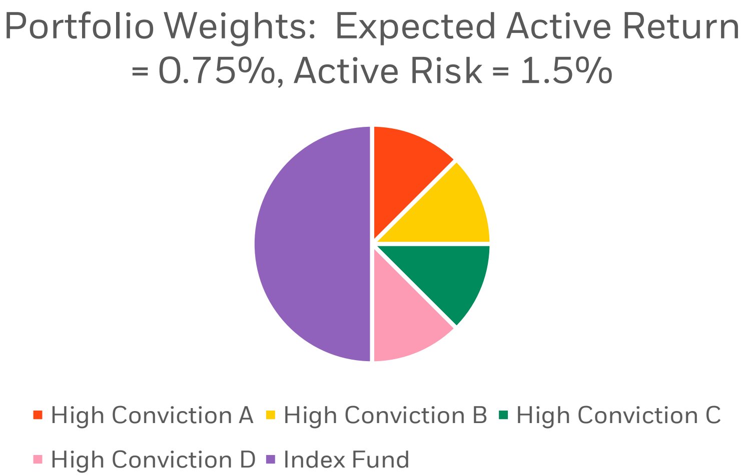
Build up a portfolio of such active managers who additionally have low correlations with each other

Myth 3:
Barbell portfolios are the best way to combine active and index managers

The Barbell Approach

Invest in several uncorrelated high conviction, high risk active managers and control overall risk by also investing in indexing.

Example: start with an index fund and 4 uncorrelated high conviction managers who can each deliver 1.5% active return at 6% active risk. The plan is willing to take 1.5% active risk overall. The best approach is

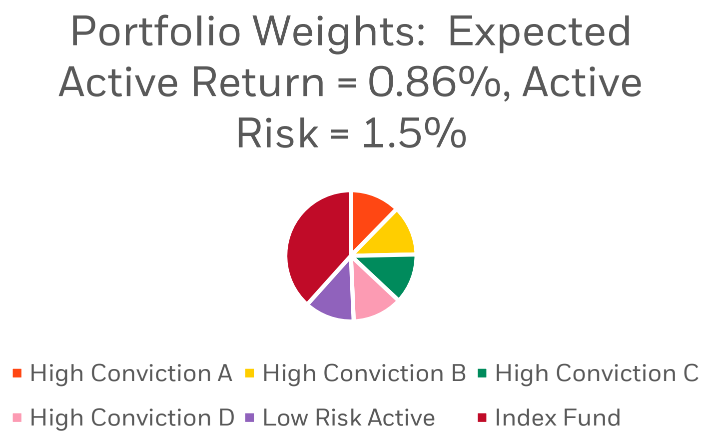


Source: BlackRock. For illustrative purposes only.

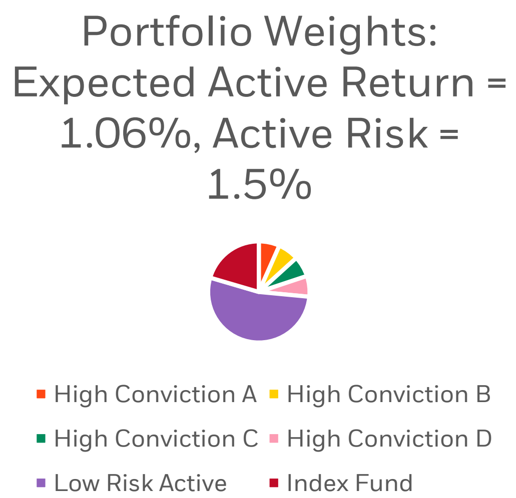
Example Continued

Now add in an uncorrelated low risk fund with expected active return of 1% with active risk of 2%.

A) Equal weight it with the high conviction managers:



B) Optimally weight it with the high conviction managers



Source: BlackRock. For illustrative purposes only.

Optimal Capital Allocation: Theory

The optimal approach is to allocation capital:

- **In proportion to information ratios**
- **Inversely in proportion to active risk**

Among managers with equal active risks, we should invest larger amounts in the managers with the highest information ratios.

Among managers with equal information ratios, we should invest larger amounts in the managers with lower active risk.

In practice, we might deviate from these prescriptions due to constraints and/or very high target active risk at the asset class level.

Source: BlackRock. For illustrative purposes only.

A Real World Example

How to choose an optimal manager line up for a plan's equity allocation.

- MSCI ACWI benchmark
- Used eVestment database of managers
- Where should the plan invest in active?

Note that the benchmark weights will provide some constraints especially on investing in emerging markets.

This real world example also shows the benefit of choosing high IR managers.

Source: BlackRock. For illustrative purposes only.

Plan Level Results

Higher risk produces higher return. Diminishing slope—as we keep increasing the active risk target, we need to choose high risk managers with lower information ratios over lower risk managers with higher information ratios. Choosing the right manager mix matters

At low risk/return targets (less than 35bps of active risk)

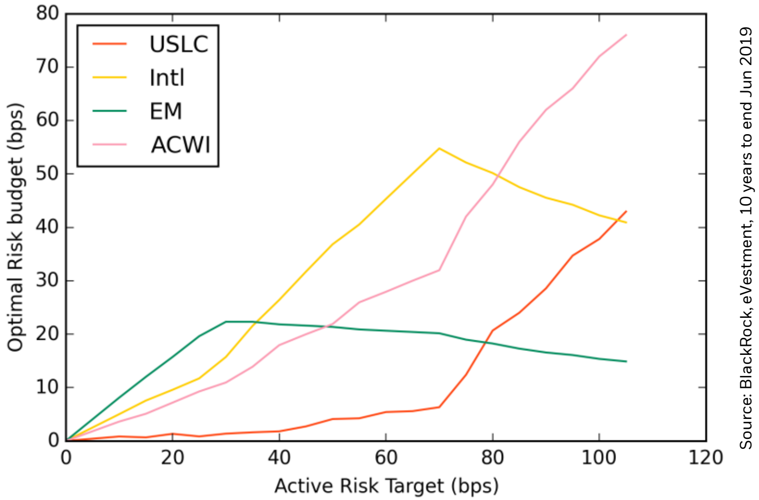
- Focus active allocation in ”easier” categories (EM, Intl) and Index US
- Add some Global Managers for higher efficiency (although improvements at low risk levels are marginal)

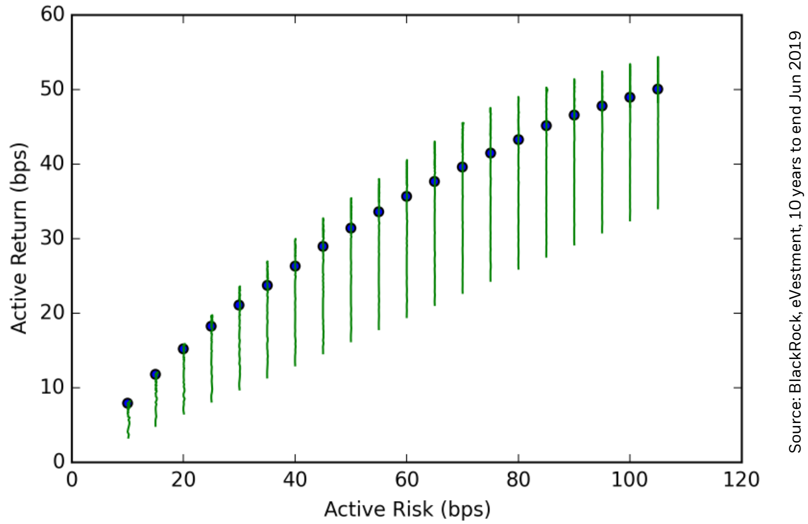
Above 50bps of active risk

- Budget allocated to EM and Intl maxes out as benchmark market cap constraints start biting
- Global Manager allocations becomes the biggest component and adding some active US LC starts adding value

For risk targets around 100bps

Increase active allocations in proportion to manager selection skill and/or the higher risk return objectives



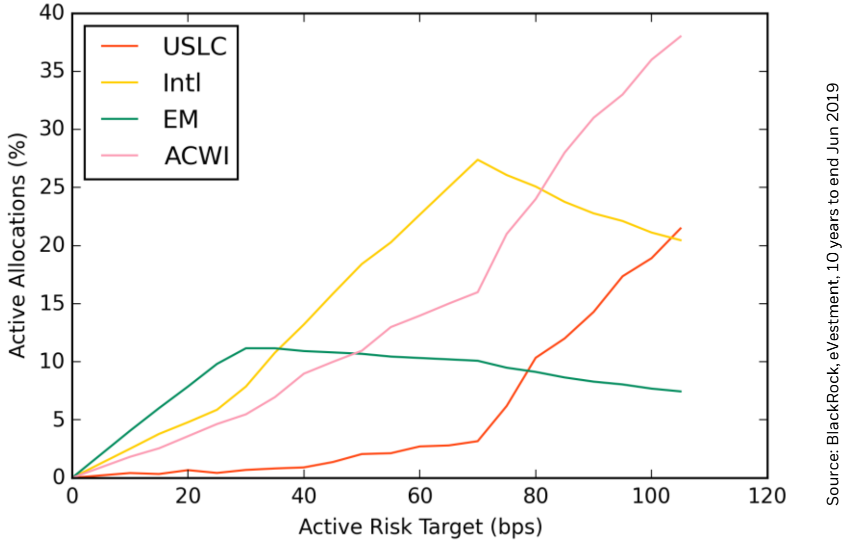


Source: BlackRock. For illustrative purposes only.

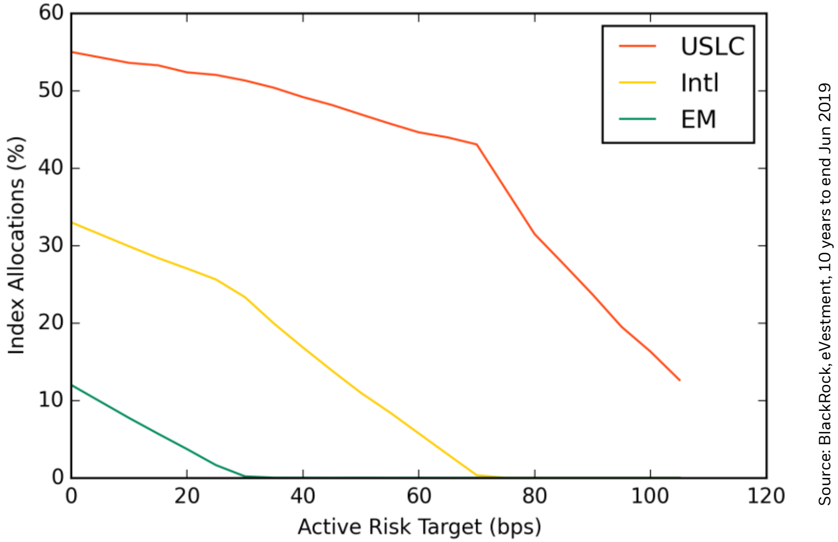
Plan Level Optimal Allocation Weights

- **Optimal Solution shown as allocation weights across active (left) and index (right)**

Active Allocation



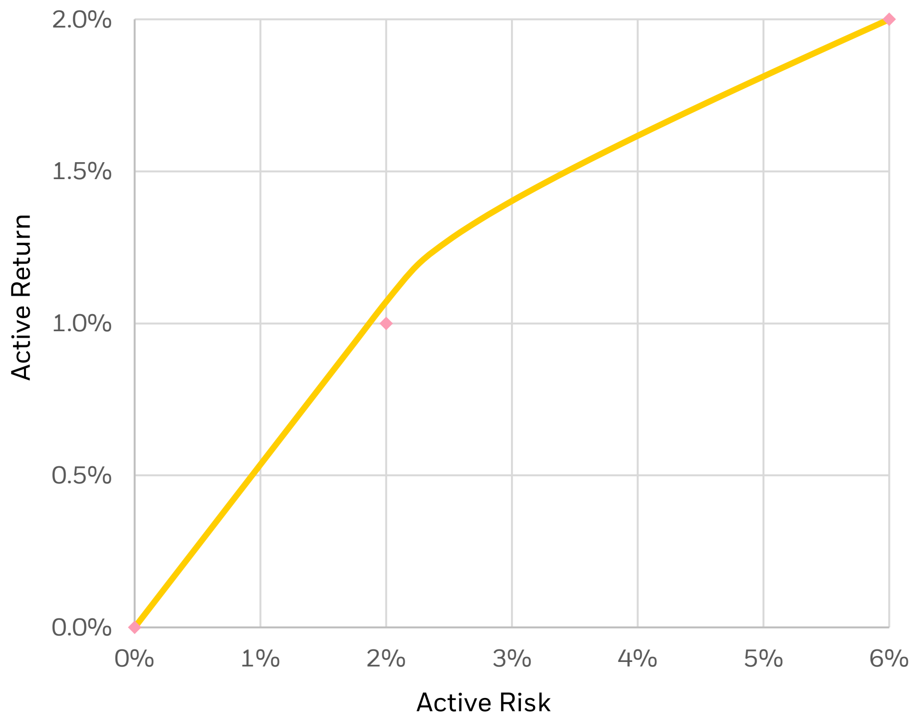
Index Allocation

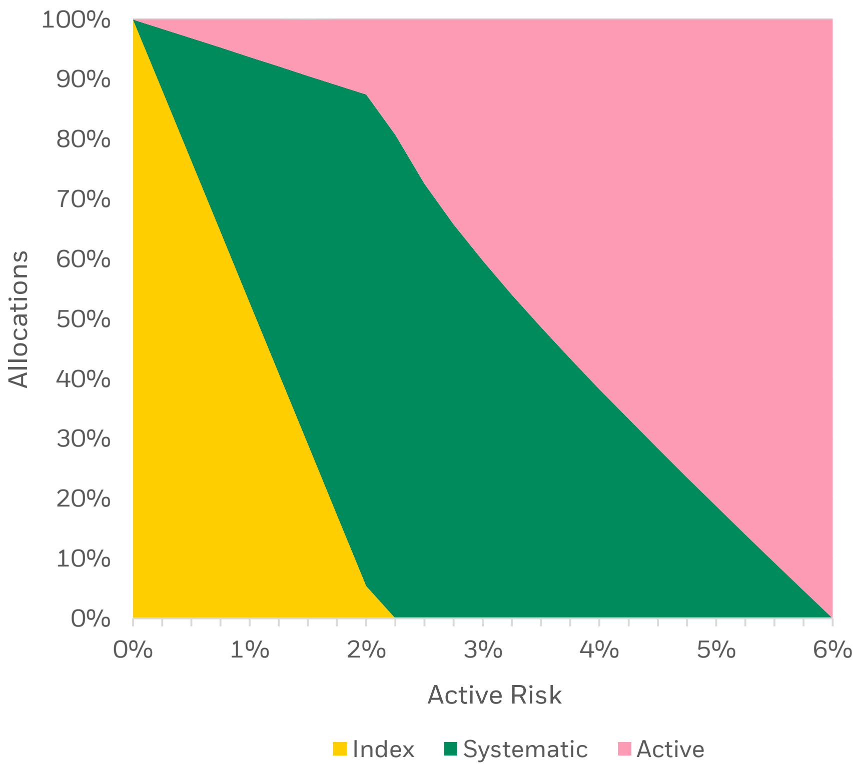


Source: BlackRock. For illustrative purposes only.

Allocation Frontier

Optimal Strategy Allocations at varying risk levels





Source: BlackRock. For illustrative purposes only.

Potential Implications for Investors

The barbell doesn’t always lead to the highest expected active return per unit of active risk.

Very high target active risk will lead a plan to choose only high risk active managers and no indexing.

A portfolio with a relatively high information ratio and relatively low risk can play a large and important role in investment portfolios.

Myth 4:
High Conviction Concentrated Portfolios are the Most Attractive

High Conviction Managers

We have already seen that investors seek out managers with high information ratios and low risk.

What determines high information ratios?

The Fundamental Law of Active Management

IR = skill • diversification • efficiency

skill

- Correlation of forecasts and realizations

diversification ("breadth")

- (square root of) Number of independent bets per year

efficiency

- Correlation of implemented and ideal portfolios

Source: BlackRock. For illustrative purposes only.

Investment Examples

Stock picker:

$$IC = 0.05$$
$$BR = 500 \cdot 4 = 2,000$$
$$TC = 0.35$$
$$IR \Rightarrow 0.05 \cdot \sqrt{2,000} \cdot 0.35 = 0.78$$

Tactical Asset Allocation:

$$IC = 0.1$$
$$BR = 3 \cdot 4 = 12$$
$$TC = 0.6$$
$$IR \Rightarrow 0.1 \cdot \sqrt{12} \cdot 0.6 = 0.21$$

Source: BlackRock. For illustrative purposes only.

Potential Implications

Successful strategies must find a winning combination of skill, breadth, and efficiency.

- Skill is the hardest to obtain.
- Breadth can be the easiest to obtain, e.g. by following more stocks, but it only works in combination with skill.
- We can increase efficiency by eliminating constraints.
- The Fundamental Law applies to all investors, not just quantitative investors.

When hiring managers, understand how they combine skill, breadth, and efficiency.

Myth 5:
Quantitative Active Products are Black Boxes compared to Fundamental Products

What is Quant Investing?

Quantitative or scientific investing applies rigorous and systematic analysis—the scientific method—to investing. Scientific investors use the scientific method to develop return forecasts, and then construct portfolios by optimally trading off those expected returns against risk and trading costs.

Many implementations of quantitative investing have focused on return forecasts proportional to a few well-known, publicly available financial ratios, including book-to-price, earnings-to-price, price momentum, and analyst estimate revisions. We must distinguish what many practitioners have done, with the larger bailiwick of quantitative investing.

Quantitative investing differs from Fundamental investing is some important ways, but in other ways are closer than many investors believe:

	Quantitative Investing	Fundamental Investing
Investment Ideas	Limited only by imagination and data.	Limited only by imagination
Data gathering	Very large amount of numerical and text data.	Numerical and text data, company visits
Portfolios	Large number of assets, process-driven	Fairly concentrated portfolios
Management	Team-based	Manager-based

Source: BlackRock. For illustrative purposes only.

More on Quantitative Investment Ideas

Factor investment strategies focus on a few ideas fueled by risk premia and behavioral anomalies. For equities, these include:

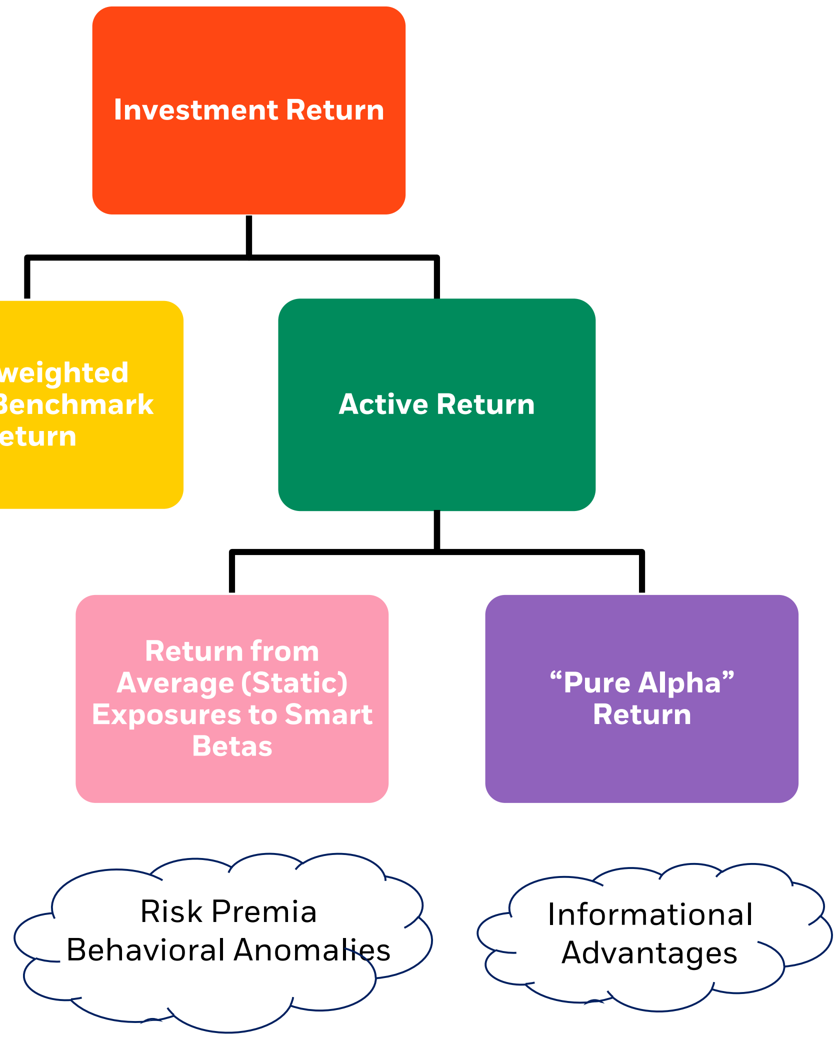
- Value
- Momentum
- Small Size
- Quality
- Low Volatility

Pure alpha strategies seek to add value through informational advantages—identifying through publicly-available information ideas not currently reflected in market prices. In recent years, we have seen an explosion of available data ("Big Data") that has fueled these strategies. In particular, we have seen new data in the form of:

- Text
- Search
- Social Media
- Images
- Video

Source: BlackRock. For illustrative purposes only.

Decomposition of Active Returns



Rough attribution of key drivers:

Source: BlackRock, as of January 27, 2020. For illustrative purposes only.

Summary

We have mainly focused on the issue of choosing managers within an asset class.

Key issues include:

- The goal is the delivery of consistent positive return.
- Most plans invest in active and index, and increasingly in factors, pure alpha, and index.
- The importance of identifying high information ratio managers
- Ideally allocate capital to those managers in proportion to their information ratios
  - – We need to adjust that for benchmark constraints, the plan's target active risk, and also the correlation between the managers.

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