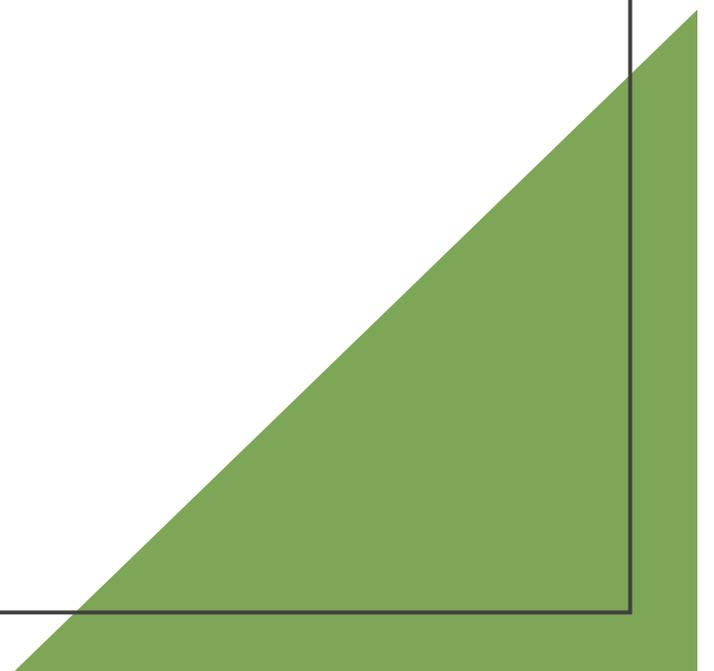


Education: Benchmarks

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An Introduction to Benchmarks

- Benchmarks serve as a reference point for the management of SBCERS assets and support sound monitoring and decision-making.
- Establishing and monitoring total fund, composite and manager benchmarks is important as it provides a framework to evaluate the effectiveness of investment strategies and activities relative to the risks taken.
- Benchmarking should provide a foundation for investment decisions – selection varies by asset class, time horizon, and style.
- Benchmarks can change for various reasons including:
 - Evolution of the investable opportunity set
 - Change in return and risk objectives
 - Change in the type of diversification required
 - Strategic opportunities available in the market
- SBCERS' specific benchmarks are defined in the Investment Policy Statement

Important Definitions



Benchmark: An investment benchmark is a standard or measure that can be used to compare and analyze the allocation, risk, and return of a given portfolio.



Index: A method to track the performance of a group of assets in a standardized way usually expressed as points or a percentage. Indexes typically measure the performance of a basket of securities intended to replicate a certain area of the market.



Composite: A grouping of managers in a standardized way based on the similarities of their mandates.

Important Definitions



Beta – A measure of the sensitivity of a strategy to the movements in the market. A measure of a portfolio's non-diversifiable or systematic risk.



Alpha – A measure of the difference between a strategy's actual returns and its expected performance, given its level of risk as measured by beta. It is a measure of the strategy's historical performance not explained by movements of the market or a strategy's non-systematic return.



Tracking Error - A measure of excess return volatility. Calculated as the standard deviation of a portfolio's performance relative to the performance of an appropriate market benchmark.

Types of Benchmarks



Market Indexes - a hypothetical portfolio representing a segment of the financial market.



Blended Benchmarks - Blended benchmarks are created by combining multiple market indexes.



Absolute Return/Target Return - constant positive returns unconnected with market movements.



Custom - A benchmark that is designed to meet a fund's requirements and long-term objectives.



Peer Group - comparing funds or like-managed mandates within a certain industry, country, or sector

Benchmark Selection Standards

Specified In Advance – SBCERS, Consultants and Managers should establish an agreed upon benchmark. Benchmarks can be modified, but generally should be considered stable unless changes are made to the Fund's Asset Allocation or Manager selection.

Relevant - The benchmark reflects the investment mandate, objective, or strategy of the composite or manager.

Measurable and Understandable - The benchmark is quantifiable. High measurement frequency can lead to more informative conclusions.

Unambiguous and Transparent - The constituents of the investable universe can be clearly identified and priced.

Representative of Current Investment Options - The manager has current knowledge of the investable universe.

Accountable - The manager helps to select the benchmark and is accountable for any deviations from the benchmark.

Investable* – Assets that can be owned for the purpose of wealth accumulation and growth that can be liquidated with relative ease.

Complete - The benchmark provides a broad representation of the segment of the market to which it pertains. No subsets of the market segment are excluded or include extraneous market segments.

How Managers View Benchmarks

- 1. Benchmark Relative:** Investment decisions are made relative to benchmark weights, exposures, and risks. The portfolio may be very similar to the benchmark in this instance (e.g., passive and active index strategies).
- 2. Benchmark Aware:** Investment decisions are not as closely tied to characteristics of the benchmark, although the benchmark typically represents the segment of the market from which securities for the strategy are drawn. There are usually distinct differences between the portfolio and the benchmark (e.g., concentrated strategies).
- 3. Benchmark Agnostic:** Investment decisions are not made relative to a benchmark. Benchmarks are treated as target returns or hurdles to outperform, or there may be no appropriate benchmark. This scenario is common with private investments and some alternative strategies, as well as for strategies not covered by index providers. In these instances, firms often use a predefined target return that is not based on a market index.

Love to Hate Benchmarks

- Survivorship Bias - occurs when only the winners are considered while the losers that have disappeared are not considered. Example: HRFX Index
- Reverse Survivorship Bias - occurs when only the losers are considered while the winners disappear from index.
- Self-Report Bias – winners are likely to report performance, where losers may not report until performance correct leading to inflated benchmark returns
- Undue Influence on Managers – Managers may be punished for not performing to the benchmark by losing clients. Managers may deviate from investment thesis to closer align with benchmark if the relationship feels threatened.

Manager Grid

Manager	Strategy	Current SBCERS Benchmark	Type of Benchmark	Passive vs Active	Benchmark Relationship
Acadian	Non-U.S. Small Cap Equity	MSCI EAFE Small Cap Index	Market Index	Active	Relative
Artisan	Non-U.S. Growth	MSCI EAFE Index	Market Index	Active	Aware
Beach Point	Leverage Loan	Credit Suisse Leveraged Load Index & Morningstar LSTA US Leveraged Loan TR USD	Market Index	Active	Agnostic
BNY Mellon	HEDI	Russell 1000 Index, Russell 1000 HEDI Moderate	Market Index	Passive	Relative
BNY Mellon	Russell 1000	Russell 1000 Index	Market Index	Passive	Relative
BNY Mellon	TIPS	Bloomberg U.S. Treasury Inflation Protected Index	Market Index	Passive	Relative
Cohen & Steers	Real Assets Fund	Cohen & Steers Real Assets Custom Index	Custom Benchmark	Active	Aware
DFA	U.S. Small Cap Core	Russell 2000 Index, Russell 2000 Index Value	Market Index	Active	Agnostic
DFA	Emerging Markets Value	MSCI Emerging Markets Index, MSCI Emerging Markets Value Index	Market Index	Active	Agnostic
Garcia Hamilton	Core Fixed Income	Bloomberg U.S. Aggregate Bond Index	Market Index	Active	Aware
Hamilton Lane	Private Real Return	Consumer Price Index+4%, Custom Real Return Benchmark	Absolute Return Benchmark, Custom Benchmark	Active	Agnostic
Hamilton Lane	Private Real Estate	NCREIF ODCE Index	Market Index	Active	Agnostic
Hamilton Lane	Private Equity	Russell 3000+3%	Absolute Return Benchmark	Active	Agnostic
Nuveen	Real Asset Income Fund	Nuveen Real Asset Income Blend Index	Blended Benchmark	Active	Aware
PanAgora	Dynamic International Equity	MSCI EAFE Index	Market Index	Active	Relative
PGIM	Core Plus Fixed Income	Bloomberg U.S. Aggregate Bond Index	Market Index	Active	Aware
RBC	Emerging Markets Equity	MSCI Emerging Markets Index, MSCI Emerging Markets Growth Index	Market Index	Active	Aware
RVK	Private Credit	Credit Suisse Leveraged Load Index, SOFR Index+4%	Market Index, Absolute Return Benchmark	Active	Agnostic
Wellington	Blended Opportunistic EMD	Wellington Blended Benchmark	Blended Benchmark	Active	Aware