UNDERSTANDING INVESTING

Benchmarks

A benchmark serves a crucial role in investing. Often a market index, a benchmark typically provides a starting point for a portfolio manager to construct a portfolio and directs how that portfolio should be managed on an ongoing basis from the perspectives of both risk and return. It also allows investors to gauge the relative performance of their portfolios.

What is a benchmark?

In most cases, investors choose a market index, or combination of indexes, to serve as the portfolio benchmark. An index tracks the performance of a broad asset class, such as all listed stocks, or a narrower slice of the market, such as technology company stocks. Because indexes are unmanaged, they track returns on a buy-and-hold basis and no trades are made to reallocate to securities that may be more attractive over different market cycles or market events. Indexes represent a "passive" investment approach and can provide a good benchmark against which to compare the performance of a portfolio that is actively managed. Using an index, it is possible to see how much value an active manager adds and from where, or through what investments, that value comes.

Index	Origin	Description
Dow Jones Industrial Average (DJIA)	U.S.	Price-weighted average of 30 publicly traded U.S. "blue chip" stocks
FTSE 100	UK	Market capitalization-weighted index of the 100 largest UK companies traded on the London Stock Exchange
Hang Seng Index	Hong Kong	Free float-adjusted market capitalization index, consisting of the 50 largest companies on the Hong Kong Stock Exchange
MSCI World Index	Global Equities	Free float-adjusted market capitalization index, consisting of 23 developed market country indexes
NASDAQ Composite	U.S.	Market capitalization-weighted index of approximately 3,000 common equities listed on the NASDAQ stock exchange
Nikkei 225	Japan	Price-weighted, yen-denominated equity index, consisting of the top 225 blue-chip companies listed on the Tokyo Stock Exchange
S&P 500	U.S.	Market capitalization-weighted index that tracks the performance of 500 U.S. large-cap stocks

Numerous other equity indexes have been designed to track the performance of various market sectors and segments. Because stocks trade on open exchanges and prices are public, the major indexes are maintained by publishing companies like Dow Jones and the Financial Times, or the stock exchanges.

Fixed income securities do not trade on open exchanges, and bond prices are therefore less transparent. As a result, the most commonly used indexes are those created by large broker-dealers that buy and sell bonds, including Bloomberg Barclays Capital (which now also manages the indexes originally created by Lehman Brothers), Citigroup, J.P. Morgan, and BofA Merrill Lynch. Widely known indexes include the Bloomberg Barclays U.S. Aggregate Bond Index, which tracks the largest bond issuers in the U.S., and the Bloomberg Barclays Global Aggregate Bond Index, which tracks the largest bond issuers globally.

Actually, bond firms have created dozens of indexes, providing a benchmark for virtually any bond market exposure an investor might want. New indexes are often created as investor interest grows in different types of portfolios. For example, as investor demand for emerging market debt grew, J.P. Morgan created its Emerging Markets Bond Index in 1992 to provide a benchmark for emerging market portfolios.

Indexes also exist for other asset classes, including real estate and commodities, and these may be of particular interest to investors concerned about inflation. A couple of examples are the Dow Jones U.S. Select Real Estate Investment Trust (REIT) Index and the Bloomberg Commodity Index.

What are the methodologies used to create indexes?

The major index providers use specific, predetermined criteria, such as size and credit ratings, to determine which securities are included in a particular index. Index methodologies, returns and other statistics are usually available through the index publisher's website or through news services such as Bloomberg or Reuters.

Instead of averaging stock or bond prices, indexes typically weight each component; the most common weighting is based on market capitalization. Companies with more equity or debt outstanding receive higher weightings and therefore have greater influence on index performance. As a result, big price swings in the stocks or bonds of the largest companies can create big price movements in an index.

To reduce the volatility that may result with market-cap weighting and potentially improve performance, alternative indexing methodologies have emerged in recent years. Among these, fundamental indexing, developed by PIMCO subadviser Research Affiliates, selects and weights companies using fundamentals such as sales, cash flow, book value and dividends.

Bond indexes using market-cap weighting can have a troubling twist: The most influential, or largest, components may also have the biggest debt loads, which can be a sign of deteriorating finances. In part to avoid overexposure to highly indebted countries and companies, in 2009 PIMCO introduced the PIMCO Global Advantage Bond Index (GLADI), a bond index based on gross domestic product rather than market capitalization. GLADI attempts to identify investment opportunities in fast-growing economies and also includes more instruments than a general broad-based bond market index, such as swaps and inflation-linked bonds.

How are benchmarks used to track performance?

The difference between the performance, or investment return, of an individual portfolio and its benchmark is known as tracking error. Typically reported as a standard deviation percentage, tracking error may be positive as well as negative.

When a portfolio is actively managed, tracking error may reflect the investment choices made by the active manager in an attempt to improve performance. If the active manager is successful, tracking error is positive and the portfolio outperforms the benchmark; if not, the portfolio underperforms its benchmark.

An investment portfolio, whether actively or passively managed, may hold securities different from its benchmark for other reasons. For example, the benchmark may contain so many securities that it is impractical to hold them all, or it may contain securities that are hard to buy, prompting the portfolio manager to substitute similar securities. In either case, tracking error may result.

Tracking error can also occur when the components of an index change. A bond may be replaced in an index due to a credit downgrade or a stock may be replaced with that of a faster-growing company. Active managers replicating such changes incur trading costs, while the indexes do not, thus creating tracking error. Active managers also may choose to make “off benchmark” allocations to certain sectors in an effort outperform the benchmark index.

How do I select a benchmark?

With a vast number of benchmarks to choose from, deciding which one, or which combination of indexes to use, can be difficult. Here are some key questions to answer before you choose.

What are your overall performance goals, and what is your tolerance for volatility, or risk?

Investors should evaluate their return goals and risk tolerance before selecting an index. An investor with a low risk tolerance will most likely select an index with a shorter duration or higher credit quality. An investor looking for a high return may select an index with a track record of high long-term returns, which might also exhibit performance volatility and carry the chance of negative absolute returns over shorter time periods. If the portfolio is intended to offset liabilities that change with interest rates, the most important consideration when selecting a benchmark might be the benchmark’s interest rate sensitivity (or duration), rather than its prospective returns.

What is your need for liquidity?

An investor looking to invest operating cash that is used to meet short-term liabilities or obligations will need a highly liquid portfolio and would most likely select an index with a very short duration. This type of investor would want to stay away from riskier benchmarks that contain less liquid securities and exhibit greater interest rate sensitivity. Cash investors may also select custom benchmarks designed to match their liquidity profiles.

Are you planning to invest in international securities?

Because foreign currency exposure can affect the value and the volatility of a portfolio, global securities can serve two distinctly different purposes, depending on whether the foreign currency exposure is hedged or unhedged.

A global investor who wants to take a position on currency by investing in foreign holdings would use an unhedged index – one that is exposed to changes in currency values. For example, an investor who believes that the U.S. dollar will weaken may choose to invest in securities denominated in other currencies because they will increase in value if the dollar falls. However, investors seeking capital preservation or to meet liabilities typically opt for indexes that hedge currency risk and avoid the volatility that currency investing can bring.

Do you have liabilities that are linked to inflation?

Rising levels of inflation can erode the real, or inflation-adjusted, returns on an investment. A fixed income investor with inflation-linked liabilities might therefore choose, for example, the Bloomberg Barclays Capital Euro Inflation-Linked Index, made up of eurozone inflation-linked bonds whose principal and interest payments rise with inflation. Indexes tracking the performance of specific investments that tend to benefit from inflation, such as real estate and commodities, can serve as benchmarks for portfolios invested in these assets, including the Dow Jones U.S. Select Real Estate Trust (REIT) Index and the Bloomberg Commodity Index.

How many different types of securities do you want your portfolio manager to be able to invest in?

A benchmark should be a "good fit" for your portfolio and your investment manager in terms of the range of securities in which it can invest. A broad investment universe can potentially help increase return and reduce volatility. If the benchmark is "too narrow," however, it may be difficult for the investment manager to make noticeable contributions to the portfolio's overall performance through active management.

Are there benchmark standards to consider?

Selecting a specific benchmark is an individual decision, but there are some minimum standards that any benchmark under consideration should meet. To be effective, a benchmark should meet most, if not all, of the following criteria:

- **Unambiguous and transparent** – The names and weights of securities that constitute a benchmark should be clearly defined.
- **Investable** – The benchmark should contain securities that an investor can purchase in the market or easily replicate.
- **Priced daily** – The benchmark's return should be calculated regularly.
- **Availability of historical data** – Past returns of the benchmark should be available in order to gauge historical returns.
- **Low turnover** – There should not be high turnover in the securities in the index because it can be difficult to base portfolio allocation on an index whose makeup is constantly changing.
- **Specified in advance** – The benchmark should be constructed prior to the start of evaluation.
- **Published risk characteristics** – The benchmark provider should regularly publish detailed risk

metrics of the benchmark so the investment manager can compare the actively managed portfolio risks with the passive benchmark risks.

What are the risks?

With benchmarks today covering all types of assets and investment strategies, investors should carefully consider the underlying risks in a benchmark, or index, and their risk tolerance when evaluating an index. Investors should also be aware of the holdings in their portfolios compared with those in their benchmarks in order to understand why their portfolios may perform differently. All investments contain risk and may lose value.

DISCLOSURES

Past performance is not a guarantee or a reliable indicator of future results.

A word about risk: Investing in the **bond market** is subject to risks, including market, interest rate, issuer, credit, inflation risk, and liquidity risk. The value of most bonds and bond strategies are impacted by changes in interest rates. Bonds and bond strategies with longer durations tend to be more sensitive and volatile than those with shorter durations; bond prices generally fall as interest rates rise, and the current low interest rate environment increases this risk. Current reductions in bond counterparty capacity may contribute to decreased market liquidity and increased price volatility. Bond investments may be worth more or less than the original cost when redeemed. **Commodities** contain heightened risk, including market, political, regulatory and natural conditions, and may not be suitable for all investors. **Equities** may decline in value due to both real and perceived general market, economic and industry conditions. **Derivatives** may involve certain costs and risks, such as liquidity, interest rate, market, credit, management and the risk that a position could not be closed when most advantageous. Investing in derivatives could lose more than the amount invested. **Inflation-linked bonds (ILBs)** issued by a government are fixed income securities whose principal value is periodically adjusted according to the rate of inflation; ILBs decline in value when real interest rates rise. Treasury Inflation-Protected Securities (TIPS) are ILBs issued by the U.S. government. **REITs** are subject to risk, such as poor performance by the manager, adverse changes to tax laws or failure to qualify for tax-free pass-through of income. **Currency rates** may fluctuate significantly over short periods of time and may reduce the returns of a portfolio. **Management risk** is the risk that the investment techniques and risk analyses applied by PIMCO will not produce the desired results, and that certain policies or developments may affect the investment techniques available to PIMCO in connection with managing the strategy.

There is no guarantee that these investment strategies will work under all market conditions or are suitable for all investors and each investor should evaluate their ability to invest long-term, especially during periods of downturn in the market.

It is not possible to invest directly in an unmanaged index.

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