PIMCO

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PIMCO ETFs

Investment Basics

Benchmarks: Basics

A benchmark serves a crucial role in investing. Often a market index, a benchmark 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; an annual return of 6% on a diversified bond portfolio may seem strong, but if the portfolio's benchmark returns 7% over the same time period, the bond portfolio has fallen short of its goal.

The number of benchmarks is virtually endless, and selecting the right one is not always easy. Benchmarks should be investable, but it is possible that a universe of securities in a benchmark may be so broad that it would not be practical to purchase all of them. In other cases, a benchmark may contain securities that are difficult to purchase.

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 track returns on a buy-and-hold basis and make no attempt to determine which securities are the most attractive, they 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.

These are among the most widely followed stock indexes, or benchmarks:

INDEX	ORIGIN	DESCRIPTION
DJIA	U.S.	Price-weighted average of 30 large publicly traded U.S. "blue chip" stocks
FTSE100	U.K.	Market capitalization-weighted index of the 100 largest U.K. companies traded on the London Stock Exchange
Hang Seng Index	Hong Kong	Free float-adjusted market capitalization-weighted index of the 45 largest companies on the Hong Kong stock market
MSCI World Index	Global Equities	Free float-adjusted market capitalization index consist of 24 developed market country indexes
NASDAQ Composite	U.S.	More than 3,000 technology and growth domestic and international based companies on the NASDAQ stock market
Nikkei 225	Japan	225 leading stocks traded on the Tokyo Stock Exchange
S&P 500	U.S.	500 leading companies in the Large-Cap segment of the U.S. equities market

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 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 Barclays U.S. Aggregate Bond Index, tracking the largest bond issuers in the U.S., and the Barclays Global Aggregate Bond Index of 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. Barclays Capital alone publishes more than 30 different bond indexes. 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 Dow Jones-UBS Commodity Index.

Index Methodologies: Market Capitalization and Alternatives

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. 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 Rob Arnott and Research Affiliates, selects and weights components 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 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, PIMCO introduced a bond index in 2009 based on gross domestic product, called the PIMCO Global Advantage Bond Index (GLADI) TM, which attempts to identify investment opportunities in fast-growing economies. GLADI also includes more instruments than a typical bond index, such as swaps and inflation-linked bonds. Markit LLC, an independent and unaffiliated leading financial information services company and global index provider, administers and calculates the GLADI index.

Measuring Performance: Tracking Error

Tracking error measures the dispersion of portfolio returns in excess of its benchmark and, therefore, the consistency of a manager's excess performance. Tracking error is always a positive number, defined as follows:

> tracking error = annualized standard deviation of monthly excess returns

Note that a manager does not necessarily have tracking error simply because of outperformance or underperformance. By the above definition, a manager who outperformed (or underperformed) by, for example, exactly 20 basis points every single month would have zero tracking error, despite a positive (or negative) alpha.

There are several possible sources of tracking error. For reasons of liquidity, portfolio size, and also a manager's active views, an investment portfolio may hold securities different from its benchmark. When expressing active views within a portfolio, a manager aspires to outperform the benchmark, deliberately seeking returns different from the index. Additionally, 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.

Investors should be aware of the holdings in their portfolios compared with those in their benchmarks in order to understand why their portfolios may perform differently.

A word about risk: An investor should carefully consider the underlying risks contained in an index and their risk tolerance when evaluating an index. All investments contain risk and may lose value. It is not possible to invest directly in an unmanaged index.

Barclays Capital U.S. Aggregate Index represents securities that are SEC-registered, taxable, and dollar denominated. The index covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities. Barclays Capital Global Aggregate Index provides a broad-based measure of the global investment-grade fixed income markets. The Dow Jones UBS Commodity index is composed of futures contracts on 19 physical commodities. It reflects the return of underlying commodity futures price movements only. The Dow Jones U.S. Select Real Estate Investment Trust (REIT) IndexSM is an unmanaged index subset of the Dow Jones Americas U.S. Select Real Estate Securities (RESI) IndexSM. This index is a market capitalization weighted index of publicly traded Real Estate Investment Trusts (REITs) and only includes only REITs and REIT-like securities. The PIMCO Global Advantage Bond Index (GLADI) is a diversified global index that covers a wide spectrum of global fixed income opportunities and sectors, from developed to emerging markets, nominal to real assets, and cash to derivative instruments. Unlike traditional indices, which are frequently comprised of bonds weighted according to their market capitalization, GLADI uses GDP-weighting which puts an emphasis on faster-growing areas of the world and thus makes the index forward-looking in nature. It is not possible to invest directly in an unmanaged index.

PIMCO advised funds are distributed by PIMCO Investments LLC.

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