



Shiller Barclays CAPE[®] Global Sector Index

Quantitative Investment Strategies



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The Shiller Barclays CAPE® Index Family

The Shiller Barclays CAPE® Index Family are equity indices utilising the Cyclically Adjusted Price Earnings Ratio (CAPE®) as a key driver for the valuation of sectors and designed by Barclays and Professor Robert Shiller.

Barclays and Professor Shiller partnered in September 2012 to develop the first Shiller Barclays CAPE® Index family based on US Sectors, and European versions were added in September 2013.

In September 2022 Barclays and Professor Shiller added the Global Sector indices, applying a similar methodology to the US and European Sector indices, but this time providing exposure to global developed market stocks.

The Shiller Barclays CAPE® Index Family of indices offer equity market exposure with a 'value' bias and are intended for buy and hold investors with a multi-year time horizon – within this framework they may provide positive long term returns for investors.

The indices may be used in a portfolio as a substitute for:

- Equity exposure
- A sector rotation strategy
- A value allocation, or for investors seeking exposure to the value risk premia



About Robert Shiller

Professor Robert Shiller is an American economist and Sterling Professor of Economics at Yale University. He has been the Co-Director of the Behavioral Finance Workshop at the National Bureau of Economic Research since 1991.

He is well known for jointly developing the Standard & Poor's/Case-Shiller Home Price Indices and is a best-selling author of several economics books. Professor Shiller also developed the widely known CAPE® Ratio.

The CAPE® ratio was introduced in 1988 by economists Professor Robert Shiller and John Y. Campbell as an improvement upon the traditional Price/Earnings (P/E) ratio.

The traditional P/E ratio is equal to price divided by the most recent 1-year earnings. A company's earnings can be volatile from year to year during the ups and downs in each business cycle. The traditional P/E ratio can, at times, be potentially unreliable in terms of understanding a companies' "true" valuation given a single year of earnings may not reflect the companies' actual earning power.

The CAPE® ratio uses the 10-year average of inflation-adjusted earnings instead of single year earnings. Since the 10-year horizon is longer than most business cycles, taking such a long-term average helps to smooth out the short-term noise.

$$\text{CAPE}^{\circledR} = \frac{\text{Real Sector Price}}{\text{10-year average of inflation adjusted sector earnings}}$$

The Relative CAPE® Ratio

The Index uses a modified version of the CAPE® Ratio – the Relative CAPE® ratio - to standardise comparison across sectors.

On an unadjusted basis, some sectors may appear overvalued or seem undervalued, leading to persistent biases in sector CAPE® ratios. These are driven by inherent long-term underlying differences between sectors, such as level of industry maturity, growth prospects, and regulations. By using the Relative CAPE® ratio to select sectors, the Index aims to pick sectors that are potentially undervalued when comparing the current valuation of that sector versus its own history.

$$\text{Relative CAPE}^{\circledR} = \frac{\text{Current sector CAPE}^{\circledR} \text{ ratio}}{\text{20-year rolling average of sector CAPE}^{\circledR} \text{ ratio}}$$

The Shiller Barclays CAPE® Global Sector Index Mechanics

Diversified global equity exposure tilting towards sectors with Value and Momentum

The index construction process:

Step 1 - 10 Global Sectors

Split the global developed market equity universe into 10 Global Sectors based on the GICS sector classification, and calculate the index prices and earnings for these sectors

Step 2 - Relative CAPE®

Select the five most undervalued sectors based on the Relative CAPE® indicator. Identify the sectors that are best placed to out-perform, given their lower valuation without falling for the potential sector bias of using non-relative CAPE® valuations

Step 3 - Momentum

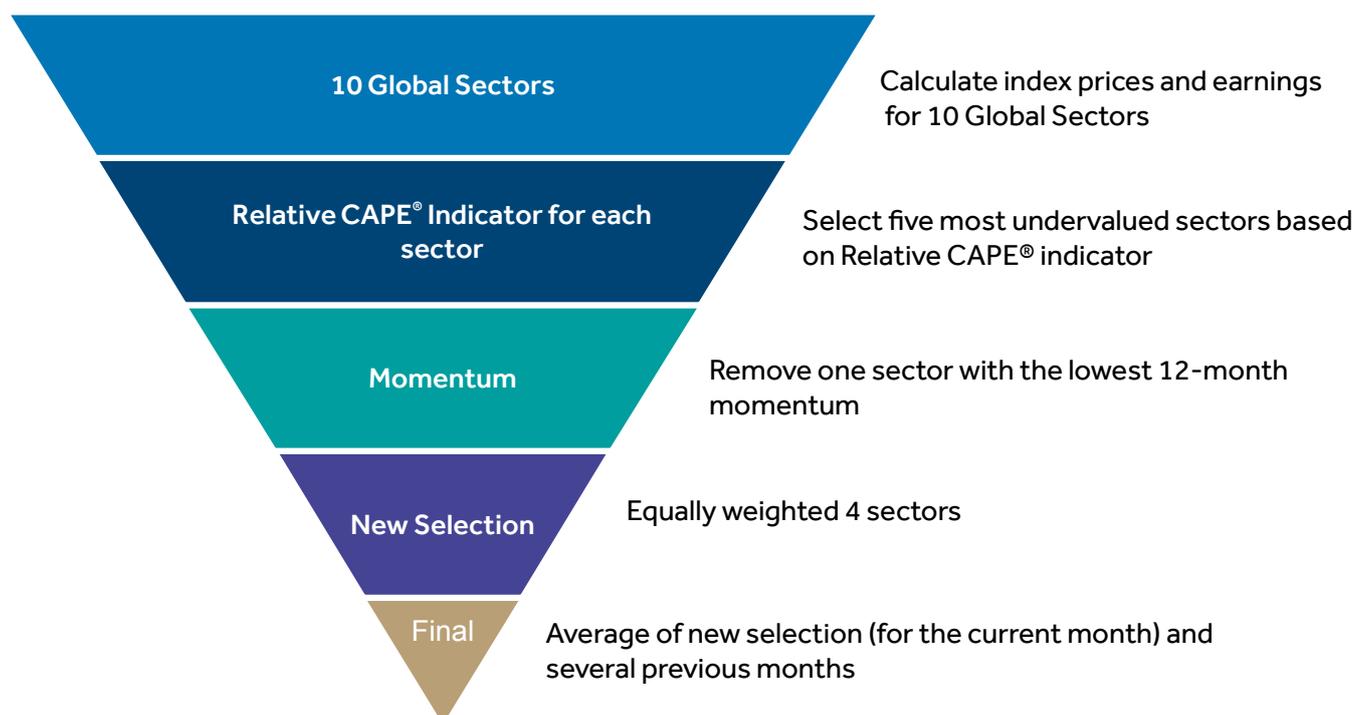
Calculate the index price momentum and earnings for the 10 Global Sectors

Step 4 - New Selection

Allocate equally to the four undervalued sectors with the most positive momentum, aiming to avoid investing in a 'value trap'

Step 5 - A Globally Diversified Equity Index

On each month rebalancing date, the Index equally allocates to a basket composed of the sectors selected on the current rebalancing date and several previous rebalancing dates



Risk Factors

An investment in the Index may also involve fees and costs as well as a range of risks. The following is a summary of these fees and costs and certain risks associated with the Index. You should consider the following, and consult with your advisers and read any product documentation carefully, before investing in any financial product based on the performance of the Index.

The Index methodology may be ineffective in allocating exposure to the best performing sectors.

There can be no assurance that sectors with lower Relative CAPE® ratios and higher 12-month price momentum will outperform sectors with higher Relative CAPE® ratios and/or lower 12-month price momentum.

Because the Index portfolio will allocate to a selection of chosen sectors, with a max weight of 25% per sector, the predefined weightings among the sectors may not be the most optimal allocations even if the Index is successful in selecting the best performing sectors.

Because an Index will at any time only be invested in a limited number of sectors, it may produce lower returns than an investment in a more diversified pool of assets.

Certain versions in the Index family may include deductions for fees and costs. These deductions will reduce Index performance, and the Index will underperform similar portfolios from which these fees and costs are not deducted.

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