Unpacking the CAPE® Index

Corey Clermont, CFP® | June 2023

Key Points

- The CAPE® Index uses a variation of the CAPE® ratio to identify the most-undervalued sectors of the S&P 500 Index.
- This distinct approach to large-cap-equity sector rotation has resulted in varying exposure among traditional growth and value sectors.
- Historically, when sectors are included in the CAPE® Index, they tend to outperform versus periods when they're excluded from the CAPE® index.
- The CAPE® Index has been able to outperform the S&P 500 over various time periods, and the consistency of outperformance over one-, three- and five-year rolling time periods is noteworthy.

CAPE® Index

The Shiller Barclays CAPE® U.S. Sector Total Return USD Index (the "CAPE® Index") uses a rules-based methodology that actively rotates among traditional value and growth sectors based on their own historical valuations by utilizing a variation of Professor Robert Shiller's CAPE® (cyclically adjusted price-to-earnings) ratio, the Relative CAPE® ratio. The index methodology utilizes a filtering process to determine which five of the 11 S&P 500 GICS sectors currently trade at an attractive valuation relative to their own long-term average. Following the identification of these sectors, the CAPE® Index aims to avoid a potential pitfall of value investing known as a "momentum trap" or the "falling knife" conundrum. To avoid this, the CAPE® Index applies a momentum filter to the five relatively cheapest sectors by removing the sector with the worst trailing 12-month return. The CAPE® Index then allocates exposure equally across the four remaining sectors. This process is repeated monthly to continually assess the relative attractiveness of each S&P 500 sector. (*Figure 1*)

Shiller Barclays CAPE® U.S. Sector TR USD Index

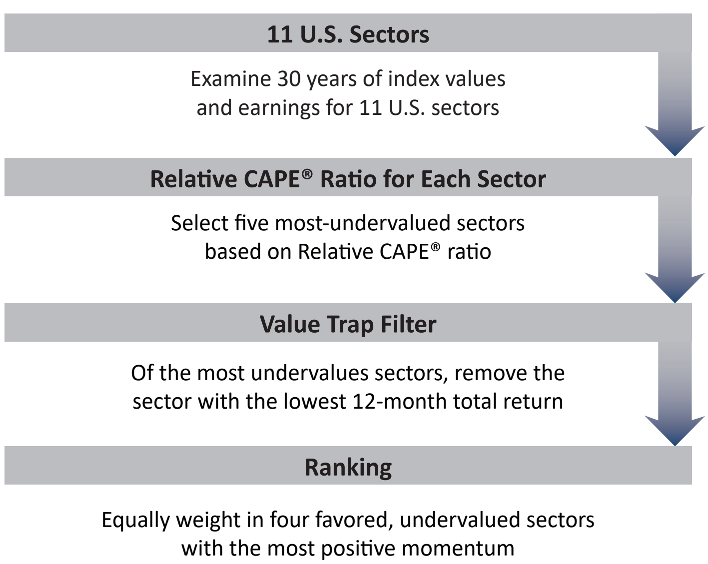


Figure 1
Source: DoubleLine, Barclays

Investing Based on Long-Term Historical Valuations

Since the CAPE® Index went live in September 2012, it has had exposure to 10 out of the 11 sectors of the S&P 500, illustrating its dynamic sector rotation among the cheapest sectors of the S&P 500. When a sector meets the criteria for inclusion in the CAPE® Index, it tends to outperform versus periods when the sector is excluded from the CAPE® index. (*Figure 2*) The combination of sector selection and sector avoidance has benefited investors over time, as the CAPE® Index has provided higher risk-adjusted returns (based on the Sharpe ratio) when compared to the seven excluded sectors of the CAPE® Index and S&P 500 since inception. (*Figure 3*)

Sector Performance When in the Shiller Barclays CAPE® Index | September 3, 2012 through June 30, 2023

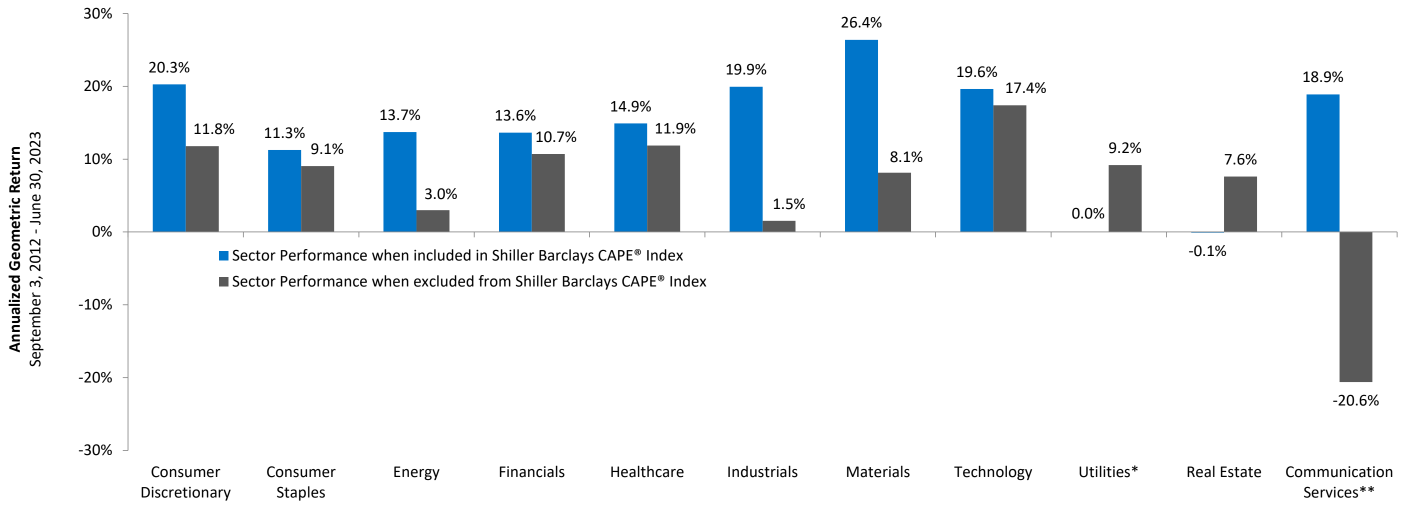


Figure 2. Source: Barclays, DoubleLine. * Performance when in Shiller Barclays CAPE® U.S. Sector Total Return Index: For Sectors with less than one year of active exposure, the return number is the cumulative return, it is not annualized. ** Communication Services became eligible for index inclusion as of September 30, 2018.

Growth of One Dollar (Log Scale) | September 3, 2012 through June 30, 2023

	Shiller Barclays CAPE® U.S. Sector TR Index	7 Sectors Not in CAPE® U.S. Sector TR Index	S&P 500 TR Index
Annualized Geometric Return	14.33%	9.34%	13.40%
Annualized Standard Deviation	17.93%	16.30%	17.33%
Annualized Sharpe Ratio	0.79	0.58	0.76

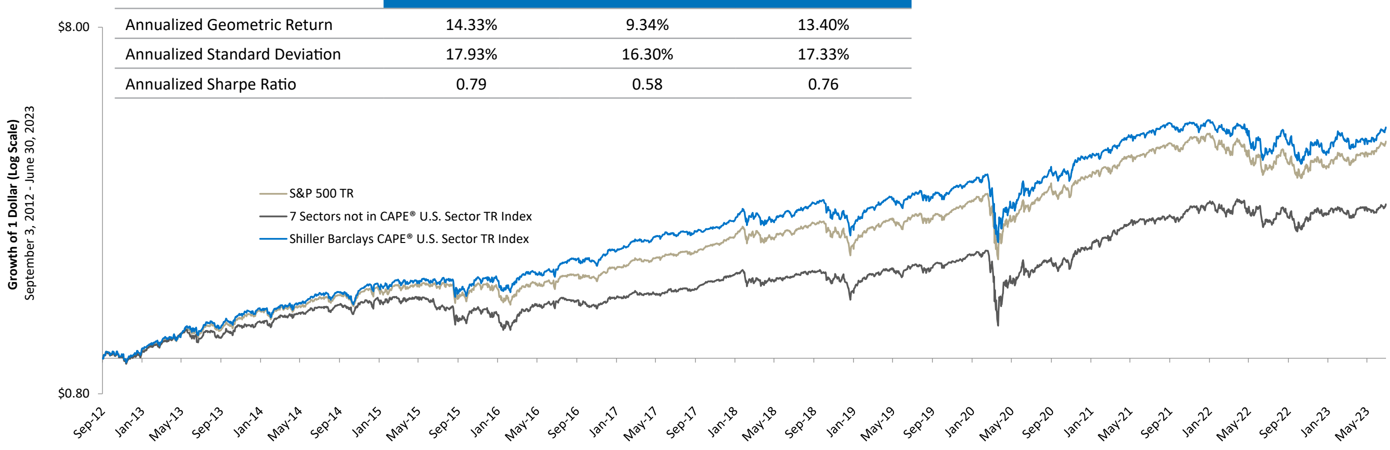


Figure 3. Source: Barclays, DoubleLine. September 3, 2012 through June 30, 2023.
There can be no assurance that the same sectors will be represented in the CAPE® Index in the future. Any data on past performance, modeling or backtesting contained herein is no indication as to future performance. See Historical Index Performance Disclaimer in the Appendix. Sectors are included or excluded from the CAPE® Index based upon the CAPE® model. You cannot invest directly in an index. Equally weighted sector portfolio is created by equally weighting the six sectors not chosen via the CAPE® Index methodology up until September 30, 2018. Subsequent to that date, the portfolio is created from equally weighting the seven sectors not chosen via the CAPE® Index methodology. **Past performance is no guarantee of future results.**

Consistency of the CAPE® Index

Since the CAPE® Index went live in September 2012, it has outperformed the S&P 500 by 103 basis points on average, per annum. The CAPE® Index's outperformance has come during a period in which both active and passive equity managers have struggled to outperform the S&P 500, with the S&P 500's return ranking in the top 10% of the large-blend peer group over this time frame.[1] While long-term performance can provide some insight, investor experience varies based upon initial investment date. One way to illustrate various periods of performance is via rolling returns over specific time horizons. When comparing CAPE® Index performance versus the S&P 500, the CAPE® Index consistently outperforms over rolling one-, three- and five-year periods.

One-Year Rolling Return Performance	Three-Year Rolling Return Performance	Five-Year Rolling Return Performance
In the **118** one-year rolling time periods, the CAPE® Index outperformed the S&P 500 **62%** of the time.	In the **94** three-year rolling time periods, the CAPE® Index outperformed the S&P 500 **72%** of the time. (*Figure 4*)	In the **70** five-year rolling time periods, the CAPE® Index outperformed the S&P 500 **77%** of the time.

Rolling Three-Year Returns of CAPE® Index vs. S&P 500 | September 3, 2012 through June 30, 2023

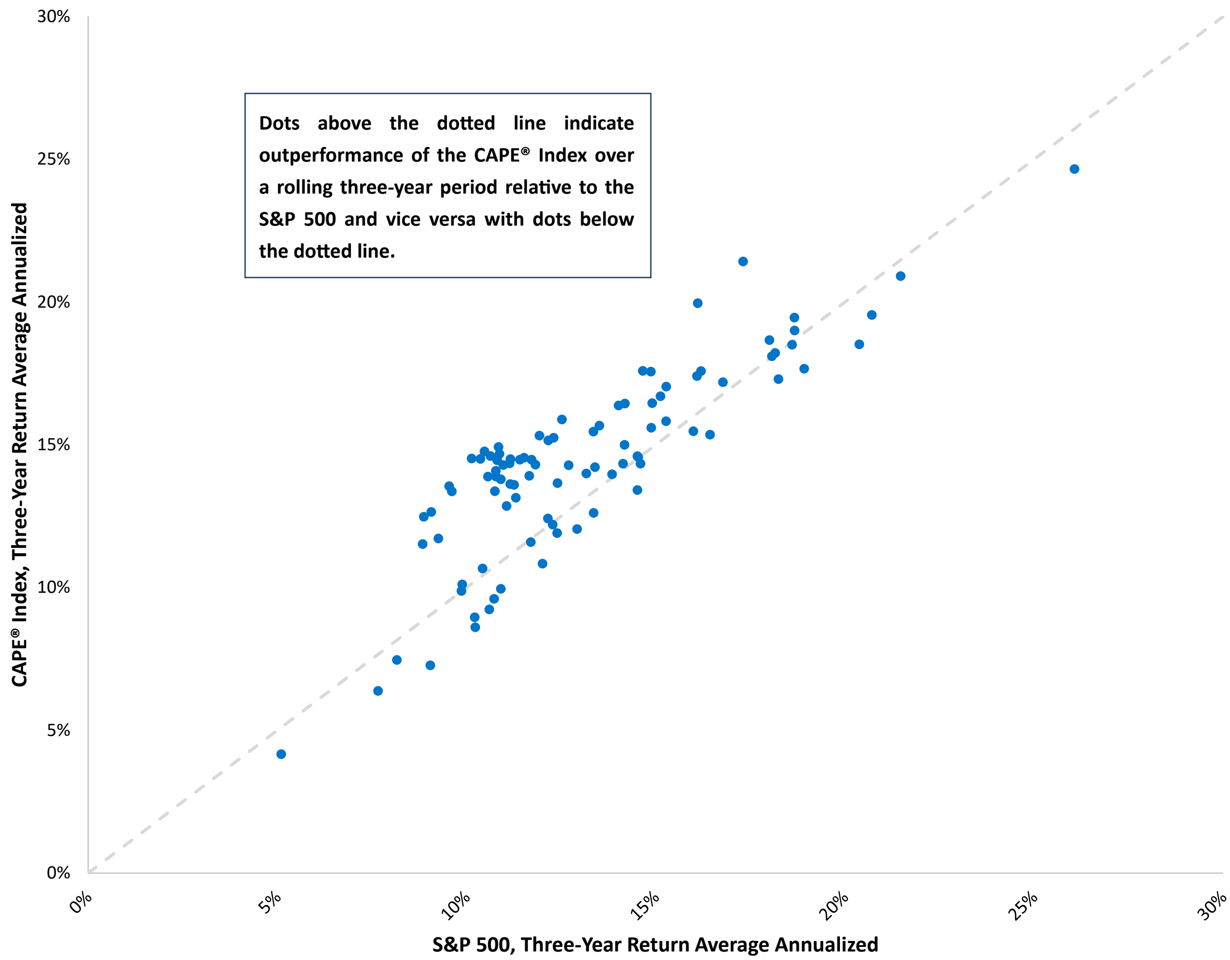
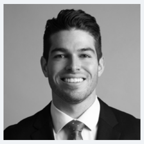


Figure 4. Source: Bloomberg, DoubleLine

[1] Source: Zephyr, September 3, 2012-June 30, 2023. Large-blend peer group includes mutual funds and exchange-traded funds.



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Mr. Clermont joined DoubleLine in 2018. He is a member of the Product Specialist Team. In this capacity, Mr. Clermont is responsible for various aspects of DoubleLine product marketing, investment strategy updates, portfolio communications and competitive analysis, with a focus on DoubleLine's Fixed Income Asset Allocation strategies. He is also responsible for producing market commentary and dedicated strategy content. As a part of the Product Specialist Team Mr. Clermont attends the Fixed Income, Macro, and Structured Product meetings. Prior to DoubleLine, he was in mutual fund distribution for Putnam Investments. Mr. Clermont holds a BS in Finance and Marketing from University of Massachusetts Boston. He is a CFP® certificant and holds the Series 6, 7 and 63 Licenses.

Definitions

Basis Points (BPS) – Basis points (or basis point (bp)) refer to a common unit of measure for interest rates and other percentages in finance. One basis point is equal to 1/100th of 1%, or 0.01% or 0.0001, and is used to denote the percentage change in a financial instrument. The relationship between percentage changes and basis points can be summarized as: 1% change = 100 basis points; 0.01% = 1 basis point.

Cyclically Adjusted Price-to-Earnings (CAPE®) Ratio – This ratio measures valuation by using real earnings per share (EPS) over a 10-year period to smooth out fluctuations in corporate profits that occur during different periods of a business cycle. It is also known as the "Shiller P/E ratio" for Yale University Dr. Robert Shiller, who popularized its use.

Falling Knife – Colloquial term for a rapid drop in the price or value of a security. The term is commonly used in phrases such as, "Don't try to catch a falling knife," which can be translated to "Wait for the price to bottom before buying." A falling knife can quickly rebound – known as a whipsaw – or the security might lose all of its value, as in the case of a bankruptcy.

Geometric Return – The average of a set of products, the calculation of which is commonly used to determine the performance results of an investment or portfolio. Technically defined as the Nth root product of N numbers.

Global Industry Classification Standard (GICS) – Hierarchical industry classification system, created by Morgan Stanley Capital International and S&P Dow Jones Indices in 1999, comprising four tiers going from broadest to narrowest to classify companies by industry: sectors, industry groups, industries and subindustries. The 11 GICS sectors are: energy, materials, industrials, consumer discretionary, consumer staples, healthcare, financials, information technology, real estate, communication services and utilities.

Growth Stock – Any share in a company that is anticipated to grow at a rate significantly above the average growth for the market. These stocks generally do not pay dividends. This is because the issuers of growth stocks are usually companies that want to reinvest any earnings they accrue in order to accelerate growth in the short term. When investors invest in growth stocks, they anticipate that they will earn money through capital gains when they eventually sell their shares in the future.

Momentum Trap – Refers to stocks with low durability scores and expensive valuations but high momentum. These stocks are risky bets that might draw investors due to changes in share price. However, they do not necessarily justify existing valuations and share price gains.

S&P 500 Index – This unmanaged capitalization-weighted index of the stocks of the 500 largest publicly traded U.S. companies is designed to measure performance of the broad domestic economy through changes in the aggregate market value of the 500 stocks, which represent all major industries.

Sharpe Ratio – Used to help investors understand the return of an investment compared to its risk. The ratio is the average return earned in excess of the risk-free rate per unit of volatility or total risk. Volatility is a measure of the price fluctuations of an asset or portfolio. Subtracting the risk-free rate from the mean return allows an investor to better isolate the profits associated with risk-taking activities. The risk-free rate of return is the return on an investment with zero risk, meaning it's the return investors could expect for taking no risk. The yield for a U.S. Treasury bond, for example, could be used as the risk-free rate.

Shiller Barclays CAPE® U.S. Sector Total Return USD Index – This index incorporates the principles of long-term investing distilled by Dr. Robert Shiller and expressed through the CAPE® (cyclically adjusted price-to-earnings) ratio (the "CAPE® ratio"). It aims to identify undervalued sectors based on a modified CAPE® ratio and then uses a momentum factor to seek to mitigate the effects of potential value traps.

Standard Deviation – Measure of the variation or dispersion of a set of data from its mean or expected/budgeted value. A low standard deviation indicates that the data points tend to be very close to the mean, whereas a high standard deviation indicates that the data is spread out over a large range of values. A measure of an investment's volatility.

Value Stock – Share of a company that appears to trade at a lower price relative to the company's fundamentals, such as dividends, earnings or sales, making it appealing to value investors.

You cannot invest directly in an index.

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Historical index performance is provided for a period of at least 10 years, unless the instruments underlying the index were only available or sufficiently liquid for a lesser period. In that case, historical index performance is provided from the time when the instruments underlying the index were available or sufficiently liquid. Performance, volatility, Sharpe ratio and correlation data are calculated using monthly returns and maximum drawdown data are calculated using daily returns.

The index methodology is available for review upon request, subject to the execution of a non-disclosure agreement.

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The performance data reflect all costs, charges and fees that are incorporated into the Index formula. The performance data, however, do not reflect any additional fees that may be paid by a counterparty to a transaction referencing the index, and which may be agreed between Barclays and the counterparty.

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