Investment Management

A Decade of Results

The Past, Present, and Future of Fundamental Index® Strategies

10 YEARS
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It's been 10 years since Charles Schwab Investment Management, Inc. first launched the Schwab Fundamental Index* Funds that are designed to track indexes that utilize the Research Affiliates Fundamental Index® (RAFI®) methodology. As one of the first providers of what is now a staple among the wide range of strategic beta offerings, the Schwab Fundamental Index mutual funds and ETFs provide investors with an alternative way to access the market, as well as offer the potential for excess returns versus market capitalization (market cap) index products. This retrospective examines the first decade of Fundamental Index® strategies[1] and the value they delivered, and also offers insights into what investors might expect over the next 10+ years.

[1]Includes the RAFI® Fundamental Index approach, methodology and indexes.

A time-tested strategy

A fundamental approach to investing in equities is certainly not a new theory. For decades, analysis has shown the shortcomings of strictly weighting index constituents by company size—especially during periods of valuation run-ups. Bigger is not always better when it comes to weighting an equity portfolio. A fundamental approach has been shown to add value over long time periods and across various market cycles. Simply evolving the approach to index weighting from pure market cap to a more thoughtful strategy based on fundamental measures has proven to be a beneficial approach for weathering market storms, delivering a meaningful performance advantage across multiple major equity categories over the last decade (see chart on page 9).

$786B

Total assets invested in strategic beta products domestically[2]

834

Strategic beta funds[2]

92%

Large institutional asset owners now look at strategic beta[3]

Explosive growth in strategic beta

In today's investment landscape, the term "strategic beta," also known as "smart beta," is inescapable. When Charles Schwab Investment Management partnered with Research Affiliates, LLC in 2007 to launch products based on the Fundamental Index® methodology, the term "strategic beta" was not widely recognized. As such, Charles Schwab Investment Management helped introduce an innovative approach to equity weighting and index investing. Since then, not only have the overall assets invested in strategic beta products skyrocketed, but the number of products and providers has also increased exponentially.

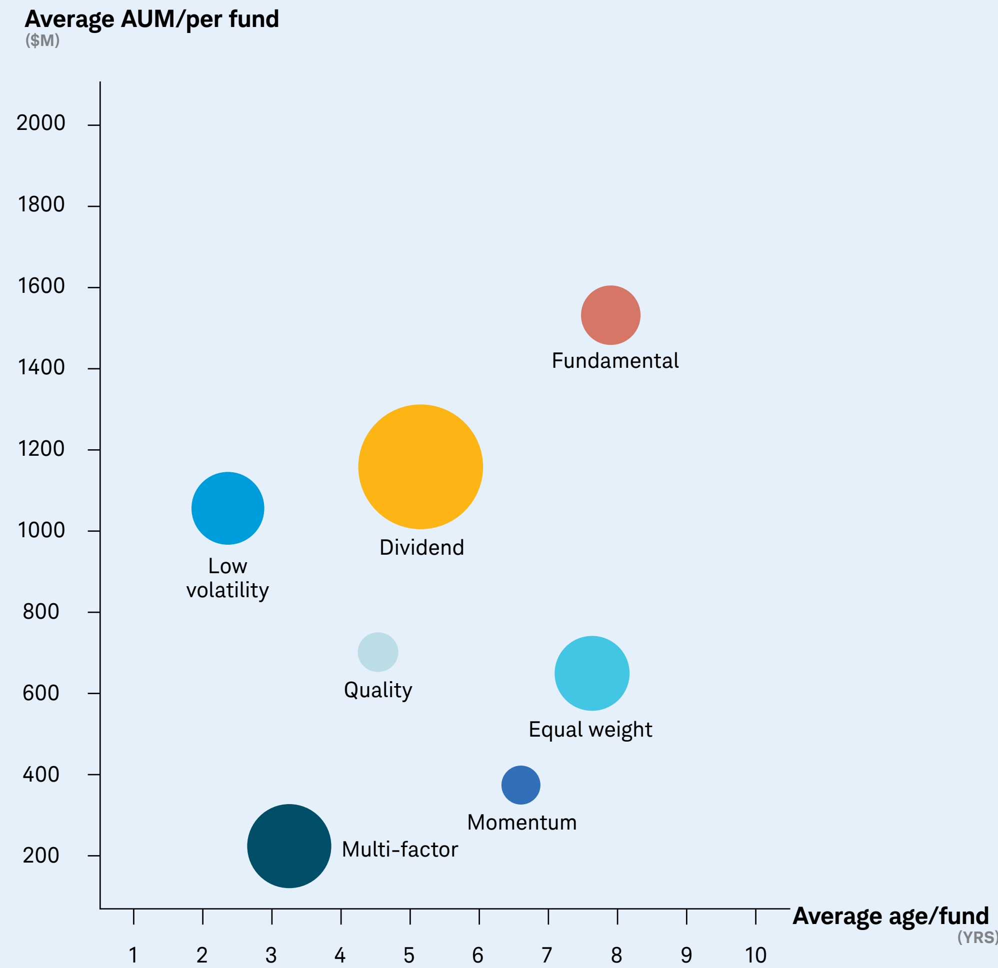
[2]Morningstar. Includes strategic beta mutual funds and ETFs. As of June 30, 2017.

[3]Pensions & Investments, Smart Beta Comes of Age, May 29, 2017, based on 2016 survey.

Not all strategic beta strategies are created equal

It's hard to argue against the importance of strategic beta products as we look to the future of portfolio building, yet it is obviously a misconception to group all strategic beta strategies together. In fact, there are vast differences among the 800+ strategic beta products in the marketplace. Return patterns of the various strategies are quite different, as is the degree of product understanding and assets under management (AUM). As with many new strategic investment categories, understanding the differences between the underlying strategies has become a new challenge for investors. Within the strategic beta universe, Fundamental Index® strategies were among the first to hit the market, boasting one of the longest average track records as well as the highest average AUM per fund. With a relatively intuitive approach and provable thesis, it's no surprise that Fundamental Index strategies have gained popularity within the strategic beta realm.

Average age and AUM/fund for the seven largest strategic beta strategies



Data source: Strategic Insight Simfund, using Morningstar's Strategic Beta classifications as of June 30, 2017. Strategic beta categories based on Morningstar Strategic Beta Taxonomy. The chart covers the seven largest strategic beta attributes by assets, excluding Growth, Value and other strategic beta attributes such as Buyback/Shareholder Yield, Earnings Weighted, Expected Returns, Revenue Weighted, Risk-Weighted, Low/High Beta, Non-Traditional Commodity, Non-Traditional fixed income and Multi-Asset. Note that some strategic beta funds initially launched as market cap products that were later converted to strategic beta products. The chart reflects initial fund inception dates, per Morningstar, and not the date of conversion to strategic beta. Circle size in chart reflects total AUM.

United by a shared vision

Rob Arnott founded Research Affiliates in 2002 with the goal of creating indexes and products that could help investors generate excess returns compared to their market cap equivalent by challenging conventional wisdom. Similarly, for over 40 years Charles Schwab has set itself apart in the industry by championing the needs of investors and those who serve them. When Charles Schwab Investment Management launched a series of mutual funds tracking indexes based on the RAFI® methodology in April 2007, they were one of the first to embrace the innovative methodology—furthering the goal of investor-focused products and services. By offering low cost, index-based products with a new approach to generating excess returns, Charles Schwab Investment Management served as a market leader in the democratization of strategic beta investing.

"We set out to answer the question: Is it possible to do better for investors? We wanted to deliver all the benefits of a traditional cap weighted index, such as liquidity, capacity, low turnover, and low costs—while eliminating the link between share price and portfolio weight."

Rob Arnott
Chairman & Chief Executive Officer
Research Affiliates, LLC

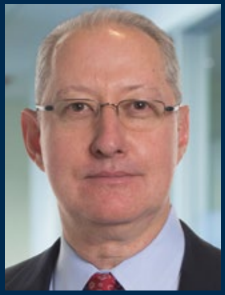
A different approach to weight

A decade ago, investors' options for equity exposure were largely limited to active management or market cap index strategies. While we continue to believe that market cap indexes do make sense in efficient markets, the direct link between market price and weight can have a dramatic effect on both weight and performance when stocks move away from their intrinsic value. In reality, these indexes tend to overweight overvalued companies and underweight undervalued companies. During the late 1990s, market cap indexes were dominated by a few sectors and names. Many stocks were overvalued, as market capitalization was driven more by investor sentiment than earnings and profits, and were thus heavily weighted. When the tech bubble burst, investors suffered as those concentrated positions had a more dramatic downside impact. This period exposed the inefficiencies in market pricing, and concerns grew that market cap may not be the best way to measure a company's true economic value.

The RAFI® indexes were launched to offer a systematic way to avoid the biases of traditional market cap indexes by removing the arbitrary measure of market price from the equation. Instead, the Fundamental Index® strategies weight companies based on more objective, economically based indicators of size to determine weight and concentration.

Using multiple fundamental measures such as retained operating cash flow, adjusted sales, and dividends plus buybacks allows the strategies to remove the potential biases of, for example, an active manager who may favor a particular stock because of past performance or emotional attachment to the company's management or a product. While this approach does not completely eliminate surges in pricing, it should minimize the impact of excessive stock valuations through periodic rebalancing and be less susceptible to sector bubbles.

"Based on our research, Fundamental Index strategies capture many of the positive attributes of traditional indexing and active management in a rules-based, unemotional fashion. We believe that Fundamental indexing serves as a valuable complement to both market cap indexes and active management."



Tony Davidow, CIMA®
Vice President, Alternative Beta
and Asset Allocation Strategist
Schwab Center for Financial Research

The benefits of the Fundamental Index® approach

The Schwab Fundamental Index products offer the potential for outperformance relative to market cap index products over time while retaining many of the benefits of index investing, such as broad diversification to equity exposure and generally lower expenses as compared to actively managed funds.

Enhanced return potential

Lower expenses

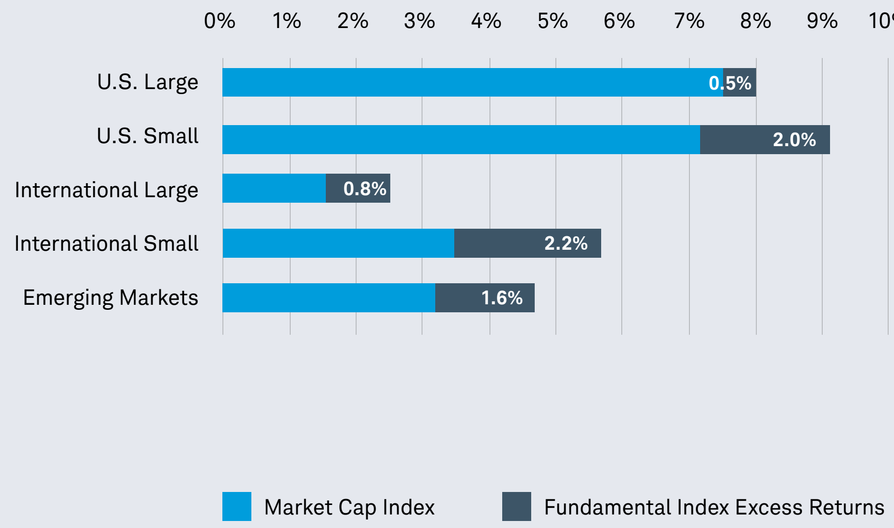
Broad diversification

A decade of outperformance

The case for Fundamental Index® strategies was strong in 2007 and has continued to grow since. Now, we are able to look back and see how the strategies did during the first decade of these early strategic beta products.

Although Fundamental Index strategies have experienced short-term periods of underperformance, the last 10 years demonstrate the value a Fundamental Index strategy can provide to a portfolio over the long term. Since April 1, 2007, the Fundamental Index strategies have outperformed market cap indexes in each of the five major equity market segments, by a measure that ranged from 50 to 220 basis points per year (see chart at right).

Fundamental Index strategy performance vs. market cap weighted index annualized performance (April 1, 2007–March 31, 2017)



Source: Research Affiliates, LLC as of March 31, 2017. RAFI® (Research Affiliates Fundamental Index) U.S. Large Company Spliced Index: S&P 500. RAFI® U.S. Small Company Spliced Index: Russell 2000 – Total Return. RAFI® International Large Company Spliced Index: MSCI EAFE – Gross Return. RAFI® International Small Company Spliced Index: MSCI EAFE Small Cap – Gross Return. RAFI® Emerging Markets: MSCI EMF (Emerging Markets) – Gross Return.

Past performance is no guarantee of future results.

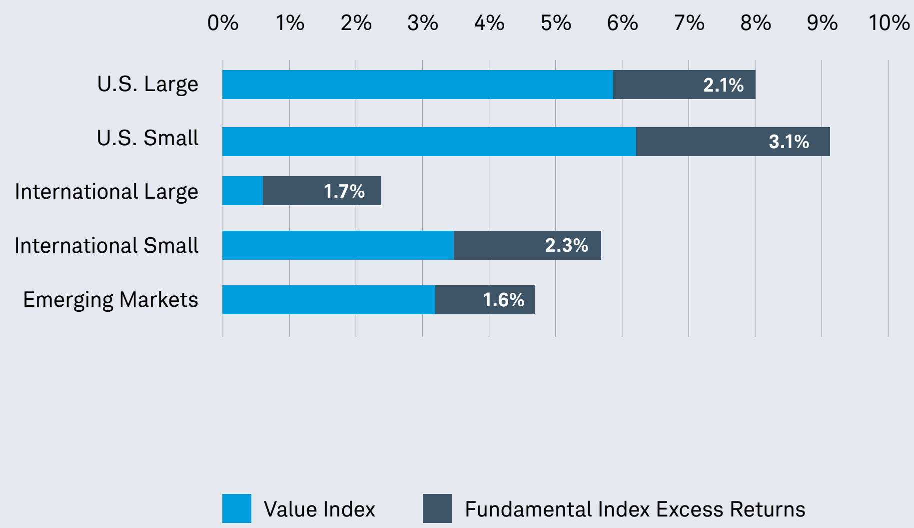
For a list of Fundamental Index definitions, please visit www.schwabfunds.com/RAFIindexes.

More than value

Ten years ago, some critics argued that the Fundamental Index® approach is just a value strategy in disguise, but that is not the case. In fact, these strategies have managed to generate excess returns across the board over the past 10 years, despite headwinds and overall underperformance from value relative to growth. The performance advantage relative to this style was even more pronounced during the past 10 years.

Generating excess returns during a period of underperformance for value relative to growth underscores the power of Fundamental Index strategies. Fundamental Index strategies have historically been able to deliver excess returns by breaking the link with price, weighting securities based on fundamental measures, and then rebalancing over time. These contrarian rebalancing strategies are designed to avoid overweighting securities based on their size or popularity. They exhibit a dynamic value tilt. The degree of the value tilt will vary over time depending on the relative valuation of the underlying securities. This dynamic nature of the strategies' value tilt is what allowed them to outperform during a decade that was predominantly challenging for value strategies.

Fundamental Index strategy performance vs. value index annualized performance (April 1, 2007–March 31, 2017)



Source: Research Affiliates, LLC as of March 31, 2017. RAFI® U.S. Large Company Spliced Index: Russell 1000 Value. RAFI® U.S. Small Company Spliced Index: Russell 2000 Value. RAFI® International Large Company Spliced Index: MSCI EAFE Value – Gross Return. RAFI® International Small Company Spliced Index: MSCI World ex USA Small Cap Value – Gross Return. RAFI® Emerging Markets Spliced Index: MSCI EM (Emerging Markets) Value – Gross Return.

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Adding value across challenging market environments

To say the global financial crisis strained securities markets in 2008 and 2009 is a vast understatement. The crisis shook many investors' confidence in the capital markets, causing them to generally avoid stocks due to their perceived risk. The crisis hit the shares of financial firms particularly hard. As they do each year, the Fundamental Index® strategies rebalanced "out of favor" companies back up to their fundamental weightings. This contrarian rebalancing meant that Fundamental Index strategies increased their exposure to bank stocks in 2009. As a result, the Fundamental Index strategies exhibited their largest tilt toward value stocks precisely when those stocks were cheapest relative to the broader market,[4] enabling the strategies to capture the upside since bank stock prices rebounded most significantly.

In 2015, commodity reliant emerging markets faced their own crisis as concerns about reduced demand from China due to slowing economic growth there pummeled prices of energy and materials firms. At that time, the Fundamental Index emerging markets strategy rebalanced into energy and materials in countries such as Russia and Brazil where investors' fears had impacted stock prices most significantly. Once again, the strategy exhibited its greatest overweight to these undervalued regions and companies precisely when they were cheapest, allowing additional participation in the ensuing bounce-back rally.

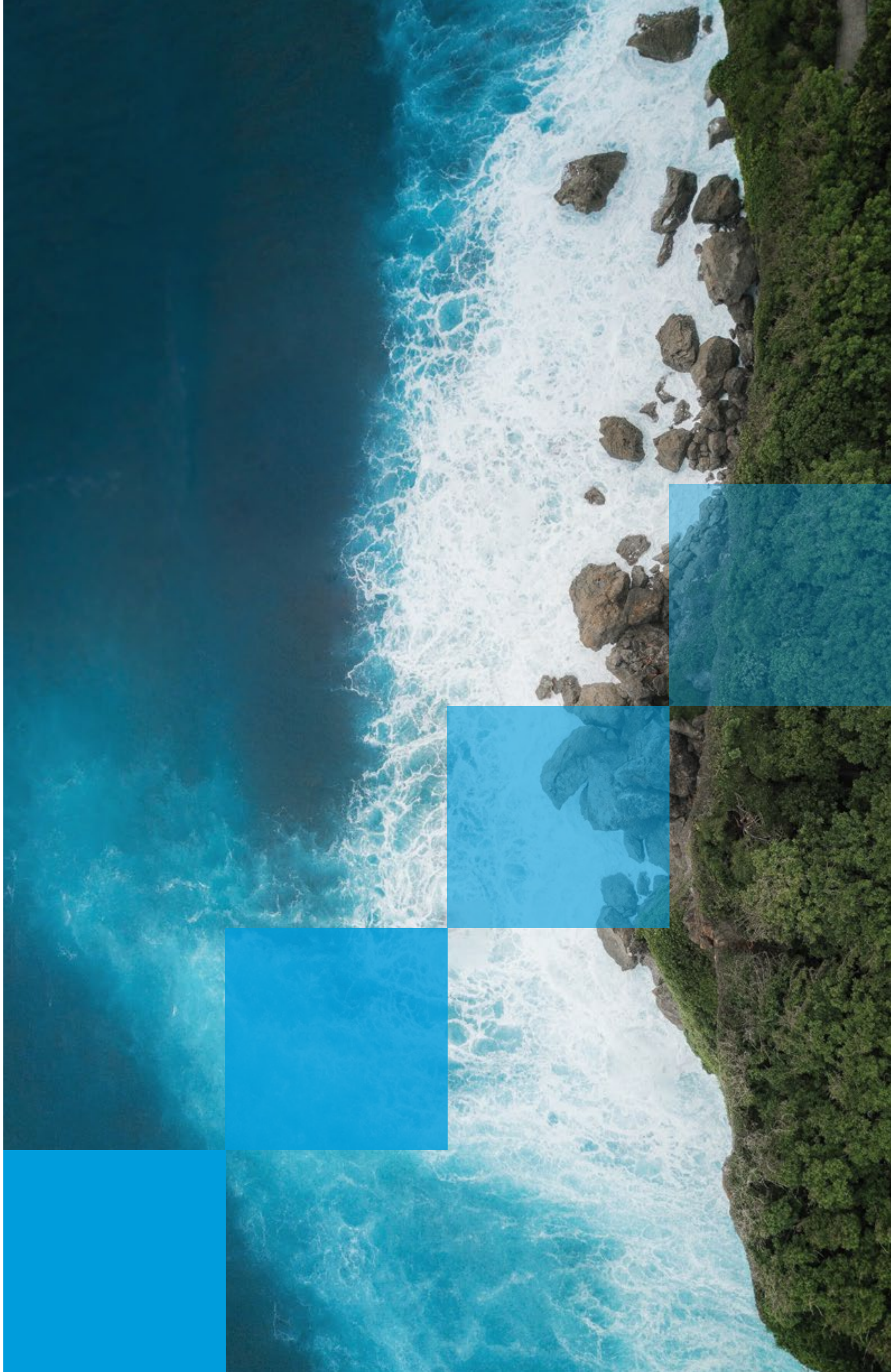
"The value-add from Fundamental Index strategies is based on the basic premise of buying low and selling high in a systematic fashion. Traditional inefficiencies in capital markets are created by humans and cause asset bubbles, which transform trending markets into mean reverting opportunities. As long as investor behavior continues to influence security prices, the Fundamental Index strategies advantage will likely persist."

Omar Aguilar, PhD
Chief Investment Officer,
Equities and Multi-Asset Strategies
Charles Schwab Investment Management

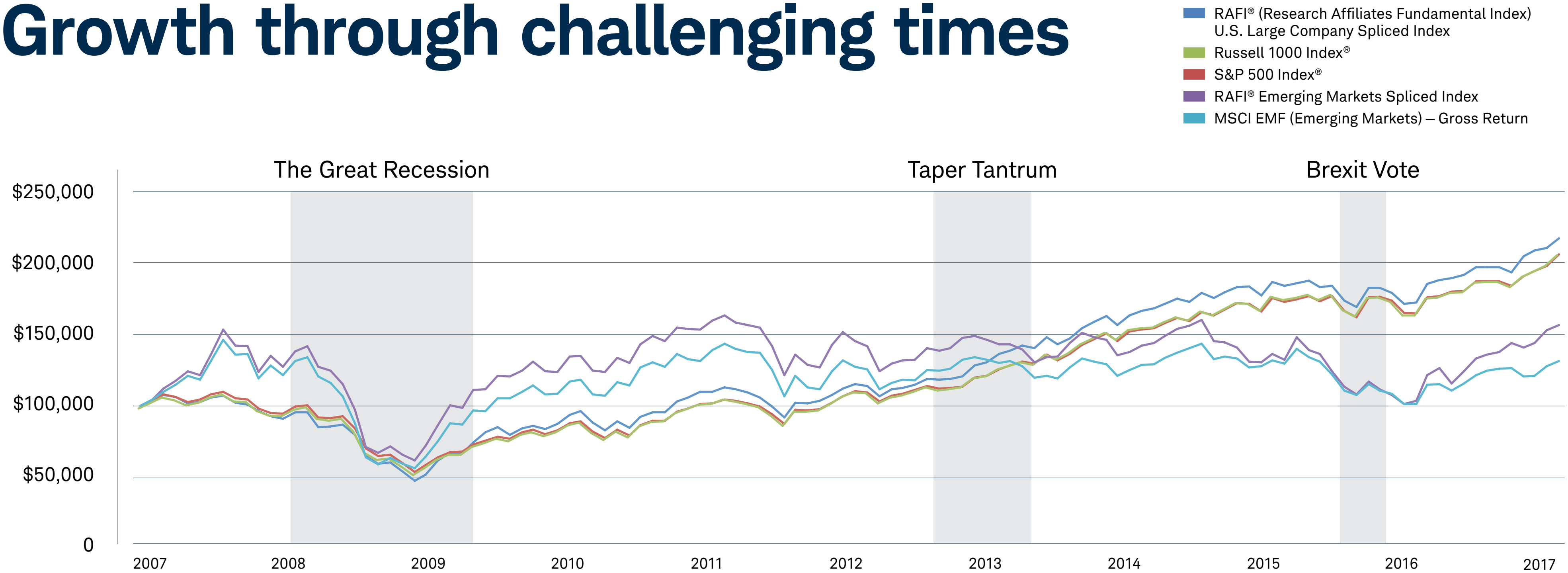
[4] For a more detailed look at the impact of contrarian rebalancing on financials during the crisis on RAFI's excess returns, see John West, "Sector weights: on average wrong, but dynamically right," Research Affiliates, May 2011, https://www.researchaffiliates.com/en_us/publications/articles/f_2011_may_sector_weights.html

In both the financials and commodities cases, the Fundamental Index® strategies rebalanced their concentrations based on company fundamentals and generated excess returns compared to market cap index strategies once the market stabilized—even during a period of value under performance. Over the past 10-year period, the RAFI® (Research Affiliates Fundamental Index) U.S. Large Company Spliced Index strategy outperformed the market cap Russell 1000® and the S&P 500® indexes while the international and emerging market strategies also outperformed their market cap index equivalent, providing value during an era that included the Great Recession, the Taper Tantrum, and the monumental Brexit vote (see chart on following page).

We know all too well that when markets get volatile, investors often move to the sidelines and then miss out on the subsequent recovery. Staying the course with Fundamental Index strategies through the peaks and valleys of the past 10 years has demonstrated the merits of this rules-based approach.



Growth through challenging times



	Beginning Value	Ending Value	Cumulative Return	Annualized Return	Standard Deviation	Sharpe Ratio
April 1, 2007–March 31, 2017						
RAFI® (Research Affiliates Fundamental Index) U.S. Large Company Spliced Index	$100,000	$216,638	116.6%	8.0%	17.7	0.43
Russell 1000 Index®	$100,000	$207,669	107.7%	7.6%	15.6	0.45
S&P 500 Index®	$100,000	$206,271	106.3%	7.5%	15.3	0.46
RAFI® (Research Affiliates Fundamental Index) Emerging Markets Spliced Index	$100,000	$157,614	57.6%	4.7%	24.8	0.17
MSCI EMF (Emerging Markets) - Gross Return	$100,000	$135,064	35.1%	3.1%	23.5	0.11

Source: Research Affiliates, LLC as of March 31, 2017. The chart above represents hypothetical investments, gross of expenses and taxes. Index returns are for illustrative purposes and do not represent fund performance. **Hypothetical performance is no guarantee of future results and not indicative of what investors would have experienced.** Standard Deviation and Sharpe Ratio are based on monthly returns. For a list of Fundamental Index definitions, please visit www.schwabfunds.com/RAFIindexes.

Looking ahead

With over a decade of performance across various market environments, the Fundamental Index® strategies have been battle tested and have delivered value-add even through challenging times. By breaking the link between price and weight, these strategies avoid overweighting overvalued companies and underweighting undervalued companies. This creates an opportunity to generate excess returns, as the portfolios rebalance away from market swings and are positioned to capture upside when mean reversion occurs.

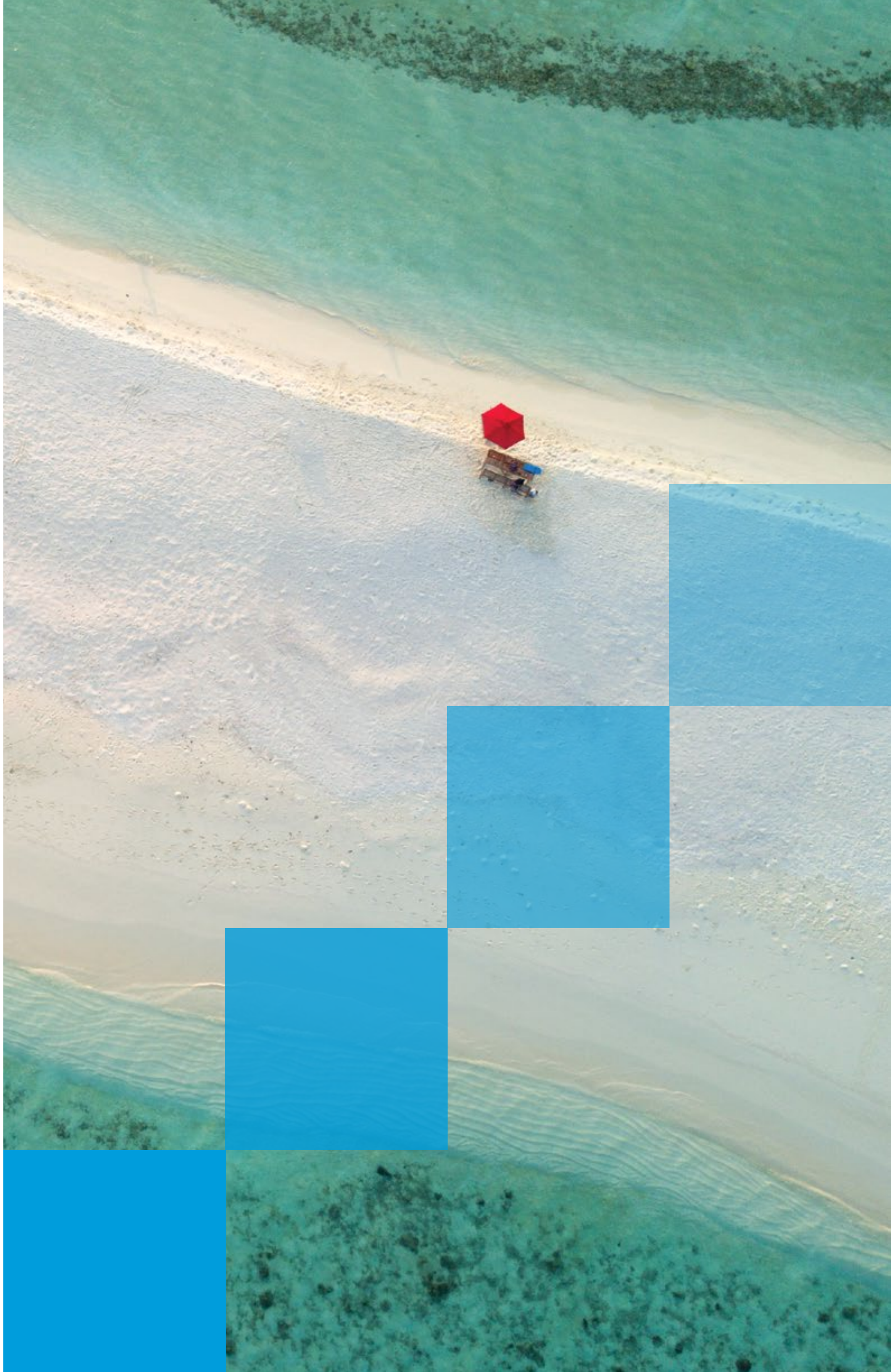
As one of the first true strategic beta offerings, the Fundamental Index strategies upon which Schwab Fundamental Index mutual funds and ETFs are based, generated excess returns compared to a market cap index for each major market segment over the past decade, and across both bull and bear markets, even as value trailed growth.

As our confidence continues in the Fundamental Index methodology, we believe Schwab Fundamental Index mutual funds and ETFs could be well positioned to continue to add value. It's hard to argue against the importance of strategic beta products in portfolio building, and we believe Fundamental Index products are poised to become an even more integral part of a diversified portfolio.

In fact, the current market environment could present an opportune moment to consider a Fundamental Index mutual fund or ETF. As noted previously, value has underperformed growth over the past decade. By definition, value stocks are cheaper than growth stocks. However, the degree to which value stocks are cheaper varies over time. The discount for value stocks, or reciprocally the premium investors are paying for growth stocks, is above average. Examples abound globally, from the U.S. where the expensive "FANG" (Facebook, Amazon, Netflix, and Google) stocks trade at large premiums compared to beaten-up energy firms, to Europe where energy and materials firms are cheap relative to biotechs, to emerging markets where commodity firms in Brazil and Russia trade at a mere fraction of the price of Chinese Internet companies.

Experience the benefits of partnering with Charles Schwab Investment Management

For over 25 years, Charles Schwab Investment Management has been committed to putting investors' needs first—including the delivery of innovative products like our Fundamental Index mutual funds and ETFs. The Schwab Fundamental Index products enable investors to experience the advantages of low cost, rules-based investing while potentially improving overall portfolio diversification. As one of the first entrants into the strategic beta space, we are able to offer Fundamental Index mutual funds with an established 10-year track record of adding value across various market environments. By allocating a portion of their portfolio to our Fundamental Index mutual funds and ETFs, investors can create the potential opportunity for more attractive risk-adjusted returns.



Schwab Fundamental Index Lineup

Schwab Fundamental Index Mutual Funds	Inception Date	Ticker	Expense Ratio
Schwab Fundamental US Large Company Index Fund	04/02/07	SFLNX	0.25%
Schwab Fundamental US Small Company Index Fund	04/02/07	SFSNX	0.25%
Schwab Fundamental International Large Company Index Fund	04/02/07	SFNNX	0.25%
Schwab Fundamental International Small Company Index Fund	01/31/08	SFILX	0.39%
Schwab Fundamental Emerging Markets Large Company Index Fund	01/31/08	SFENX	0.39%
Schwab Fundamental Global Real Estate Index Fund	10/22/14	SFREX	0.39%
Schwab Fundamental Index ETFs	**Inception Date**	**Ticker**	**Expense Ratio**
Schwab Fundamental U.S. Broad Market Index ETF	08/15/13	FNDB	0.25%
Schwab Fundamental U.S. Large Company Index ETF	08/15/13	FNDX	0.25%
Schwab Fundamental U.S. Small Company Index ETF	08/15/13	FNDA	0.25%
Schwab Fundamental International Large Company Index ETF	08/15/13	FNDF	0.25%
Schwab Fundamental International Small Company Index ETF	08/15/13	FNDC	0.39%
Schwab Fundamental Emerging Markets Large Company Index ETF	08/15/13	FNDE	0.39%

To learn more, call **1-877-824-5615** or visit us online at **schwabfunds.com**.

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Past performance does not guarantee future returns.

Diversification does not eliminate the risk of market loss.

Indexes are unmanaged, do not incur management fees, costs, and expenses, and cannot be invested in directly.

There can be no assurance that the Fundamental Index methodologies will achieve their desired outcomes. Each investing strategy involves its own set of unique risks and benefits.

Investment returns will fluctuate and are subject to market volatility, so that an investor's shares, when redeemed or sold, may be worth more or less than their original cost. Shares of ETFs are not individually redeemable directly with the ETF. Shares of ETFs are bought and sold at market price, which may be higher or lower than the net asset value (NAV).

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CC1320826 (0817-7VLY) MKT99296-00 (10/17)

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