

# Momentum Investing

*There is nothing as powerful as an idea whose time has come.*  
—Victor Hugo

## INTRODUCTION

Mercer Advisors has always sought academically validated strategies to reduce risk and increase return in our client portfolios. In pursuit of these strategies, sometimes a fascinating new approach comes with an intuitive notion that it could work, but patience, persistence, and years of voluminous research and testing are required before the notion becomes a powerful investment strategy. This is precisely the story of Momentum: the most exciting development in investing in decades more than 10 years in the making.

At its inception, Momentum asked the question: similar to Newton's *First Law of Motion*, do stocks moving in an upward motion over a certain period of time tend to continue in an upward motion?

Thanks to developments in financial research, the academic community has found a more sophisticated way to test and implement this notion, and we now have Momentum: a better way to improve expected returns and reduce expected risk on strong stocks and other asset classes.

## OUR POSITION

Academic research now supports that the Momentum strategy of methodically adding the strongest stocks is an excellent 4th factor to improve returns by working in complement with the current 3-factor strategy. Mercer Advisors strongly recommends all investment clients incorporate Momentum into their tax-preferred stock accounts.

## DISCUSSION

Over the last 60 years, academics have refined our understanding of where to find additional return. In the mid-1960s, William Sharpe set out that stocks have better expected return than bonds. Banz in the 1980s demonstrated how small stocks pay incremental return. Fama and French in the early 1990s showed how value stocks pay even more.

In the mid-1990s, Clifford Asnes and another PhD candidate at the University of Chicago first introduced the notion of Momentum in separate theses. At this time Momentum was merely an interesting thought, but compelling enough to spark the interest of other academics.

In 1997, Mark Carhart, then at the University of Chicago, wrote a dissertation furthering the notion of Momentum. In this thesis, Carhart added Momentum to Fama and French's 3-factor model, coming up with a 4th factor to complement large, small, and value stocks, coming to the basic conclusion: adding Momentum as a new dimension to stock investing adds incremental return (see Figure 1).

This thesis caught the attention of investment scholars and Gene Dongieux, CIO of Mercer Advisors. Dongieux and Carhart began a dialog on the possibilities of implementing Momentum, but knew the time was not right quite yet; more research and testing were required.

Elsewhere in the Momentum world, Cliff Asness, now a PhD, went to Goldman Sachs and managed a large internal fund while continuing to research and write for the academic journals on the topic of Momentum investing. Eventually the power of Momentum became clear to Asness, and he left Goldman Sachs in 1998 to co-found AQR Capital Management. Since then, AQR has been managing investments consistent with Mercer Advisors' strategies, including this new 4th factor, Momentum.

Figure 1: Expected return

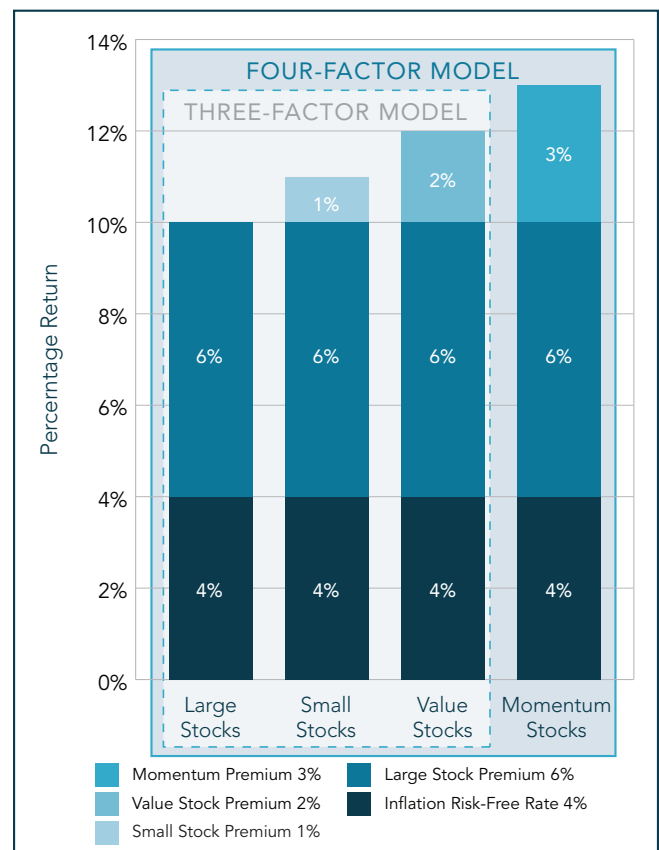
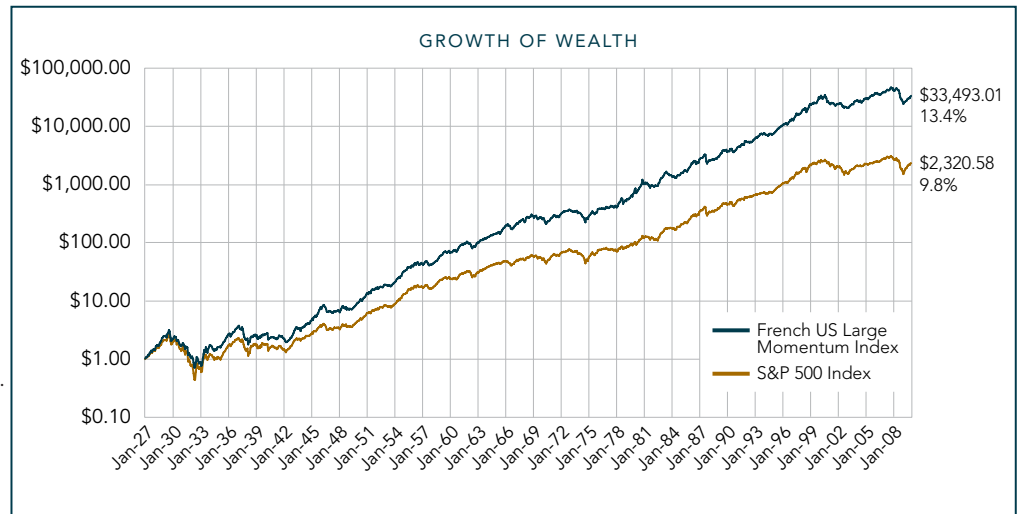


Figure 2: 1927–2009 growth of \$1



In the early 2000s, Toby Moskowitz, the Fama professor at the University of Chicago and a member of Mercer Advisors’ investment committee, continued the cutting-edge research on Momentum, continually publishing his findings. Since then, Moskowitz has become one of the most published authors on Momentum and his relationship to Momentum and AQR is similar to Gene Fama and Ken French’s relationship to value investing and DFA.

Realizing the potential of Momentum early on, during the last 12 years, Mercer Advisors has maintained a close relationship with the Momentum visionaries. Both Mark Carhart and Toby Moskowitz have served on the Mercer Advisors’ investment committee, and AQR has tested Momentum as an additional investment filter to increase risk managed returns in conjunction with Mercer Advisors’ investment strategies.

In 2009, after rigorous field testing successes, AQR Capital began offering Momentum funds to institutional investors. Working with AQR, Mercer Advisors developed an implementation strategy to begin offering Momentum to its clients as an additional filter to capture this 4th factor that other strategies do not.

### What Is Momentum?

Momentum is described as an investment phenomenon. Momentum is analogous to Sir Isaac Newton’s *Law of Inertia* developed more than two centuries ago. According to Newton’s law, inertia is the tendency of an object in motion to stay in motion, explaining, for example, why your car will continue to move forward even after removing your foot from the accelerator.

Analogous to the *Law of Inertia*, Momentum is founded on the discovery that stocks moving in an upward motion over a certain period of time, tend to continue in an upward motion. Or more specifically, strong stocks that recently performed better than other stocks in the same asset class tend to continue to outperform. This Momentum can be measured scientifically and captured using sophisticated, institutional funds/trading strategies.

Academic research first began to talk about Momentum in the 1990s, but the momentum (pun inevitable) has really picked up in the last few years, with hundreds of articles and white papers on the subject. This research has given Momentum investing the shape, precision, and rigorous peer review that all investment strategies recommended by Mercer Advisors require.

### How Is Momentum Used?

As the Momentum strategy came into focus, it was interesting to see that Momentum can be applied successfully in a variety of ways — as a way of filtering stocks in existing strategies or as the sole focus for separate strategies.

Mercer Advisors has chosen the most powerful way to incorporate Momentum: as separate strategies. This design facilitates Mercer Advisors’ rebalancing routines central to maximizing return for a given risk preference. There are stock investing Momentum counterpart funds for U.S. Large, U.S. Small, and International Large. Momentum funds hold only stronger stocks that have trended upward. These funds will be balanced with complementary asset-class funds, with the result of tilting your holdings in these asset classes toward better-performing stocks. Currently, Momentum funds will only be held in tax-preferred accounts.

### What Are the Benefits of Momentum?

Though Momentum is a new strategy, its success is back-tested many decades into the past using data that has been used by academics to validate the phenomenon.

The first benefit of Momentum is **more return**. As you might suspect, consistently holding stronger stocks in an asset class creates better results. Figure 2 compares U.S. Large Stock (S&P 500) to U.S. Large Momentum Stocks. Measured from 1927 through 2009, the difference the S&P 500 and the French Momentum Index are astounding.

Another powerful benefit of Momentum investing is via diversification. In particular, Momentum has a counterbalancing relationship (aka negative correlation) with the value strategies you currently hold. Put another way, if value is a lawnmower, Momentum is a snow blower; they perform best under different conditions. The more value tilt you have, the more Momentum can smooth out and thereby balance return, i.e., less up and down on the way to a better long-term result.

Figure 3 compares 20 years of performance of Momentum and value. While value had good performance from 2004–2007, it did better relative to the rest of the market in 2004 and 2006. Momentum picked up the slack in 2005 and 2007. Between the two strategies, you would have something outperforming in all four years: 2004–2007.

Now look at a more extreme example earlier in this period. Momentum in the tech bubble year of 1999 tilted toward large growth stocks in a way we have not seen before or since. Value investors had no way to capture the performance of tech stocks given their relative valuations. That's just what the Momentum strategy is designed to do. Having both creates the best of both worlds.

Momentum — even the small cap Momentum shown — would have captured the high tech performance in 1999, while value held up returns in 2000. Large cap Momentum would have captured even more.

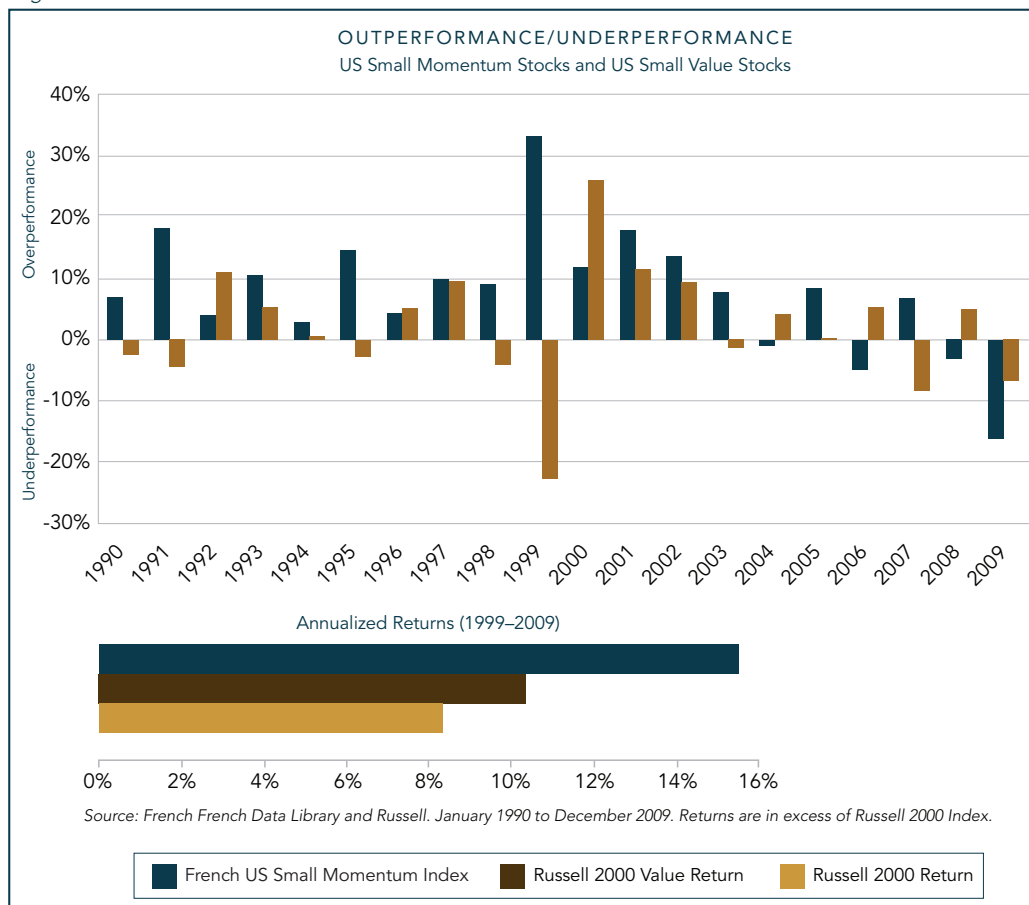
Of course, better diversification also [reduces portfolio risk](#). Figure 4 shows the allocation of portfolio 100.35.3 as it has been (old) and (new) with Momentum strategies.

When it comes to measuring risk, the lower the number, the better. Lowering portfolio risk allows you to seek more return while keeping the range of returns in any given year within comfortable parameters. Adding Momentum to an already well-diversified portfolio resulted in the following returns:

Table 1: Comparing annualized return

1990-2009	Returns		Difference
	100.35.3	Old 100.35.3	
1 YR	24.14%	34.82%	-10.68%
3 YR AVG	-5.09%	-6.64%	1.55%
5 YR AVG	2.78%	1.73%	1.05%
7 YR AVG	9.34%	9.41%	-0.08%
10 YR AVG	5.04%	4.30%	0.74%
15 YR AVG	9.51%	7.77%	1.74%
20 YR AVG	9.29%	7.71%	1.58%

Figure 3: Momentum vs Value



In addition to diversification, adding Momentum brings your portfolio into closer alignment with the entire stock market, best represented by the S&P 500. This can be comforting when your portfolio more reliably is above the benchmarks you see on the nightly news.

Momentum also gives you improved bragging rights. Not only should you expect better performance, but chances are you will have increased your investment in the strongest stocks before your friends have even heard about them.

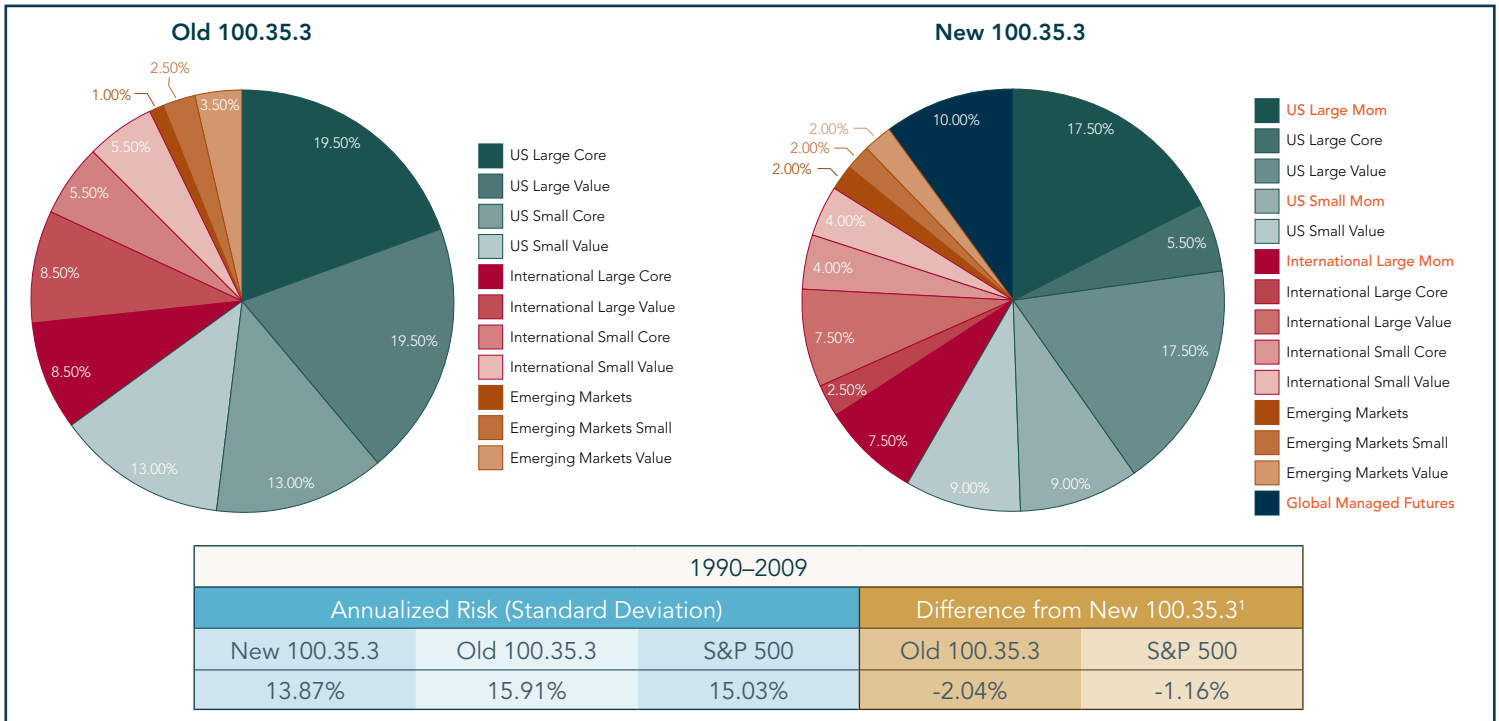
## Beyond Equities

Once we acknowledge the proof behind the principle of Momentum, academics have demonstrated that it applies to strongly performing investments that had no previous appeal. For example, commodities are still bad long-term investments because they offer no long-term growth, but they do offer price fluctuation that Momentum can capture. So does currency trading. Thus, looking across the globe at a myriad of asset classes using futures contracts, the Global Managed Futures strategy captures Momentum without using stocks or bonds — a plus for diversification.

## CONCLUSION

In Momentum investing, science has finally found a sophisticated way to capture the natural energy of the market's strongest stocks and other asset classes.

Figure 4: Risk and return with and without Momentum



Momentum is the new 4th factor that lets investors improve expected return while greater diversification helps manage risk. Momentum smoothes out performance to provide better expected return in both the long term and short term. Plus, adding Momentum provides better comparability to commonly recognized benchmarks and opens up forms of investing that had no benefit before.

In alignment with our ongoing mission to seek out academically validated strategies to reduce risk and increase return in our client portfolios, we recommend all investment clients review with their Strategic Advisors the potential outcomes implementing Momentum can have on improving your portfolio performance.

Data from Bloomberg. As always, past performance is not indicative of future returns. As with any investing, there is the possibility for loss as well as gain. This portfolio may not be appropriate for all investors.

**Old 100.35.3**

Data from Bloomberg. As always, past performance is not indicative of future returns. As with any investment program, there is the possibility for loss as well as gain. This portfolio may not be appropriate for all investors.

The old Mercer Advisors Portfolio 100.35.3 invested entirely in equity securities, including stocks of smaller companies and stocks of non-US companies. While clients may choose a portfolio whose equity portion is substantially different from Model 100.35.3, the 100.35.3 model portfolio represents Mercer Advisors' overall investment philosophy.

- The old Mercer Advisors Portfolio 100.35.3 is composed of the following:
  - 19.5% US Large Core – 5.5% BTIX 01/1993-12/2009, DFLCX 01/91-12/92, S&P 500 Index net of 0.10% annual estimated management fee
  - 19.5% US Large Value – 17.5% DFUVX 03/1995-12/2009, DFLVX 04/1993-02/1995, Fama/French US Large Value Index (ex. Utilities) net of 0.19% annual estimated management fee 01/1990-03/1993
  - 13.0% US Small Core – 13.0% DFSTX 04/1992 – 12/2009, CRSP 6-10 Index net of 0.41% annual estimated management fee 01/1990 – 03/1992
  - 13.0% US Small Value – 9.0% DFFVX 01/2008-12/2009, DFSVX 04/1993 – 12/2007, Fama French Small Value Index (ex. Util) net of 0.56% annual estimated management fee 01/1990 – 03/1993
  - 8.5% International Large Core – 2.5% BTAEX 02/1996 – 12/2009, MSCI EAFE Index net of 0.40% estimated annual management fee 01/1990 – 01/1996
  - 8.5% International Large Value – 7.5% DFVIX 03/1995-12/2009, DFVIX 07/1993 – 02/1995, Fama/French Int'l Value Index net of 0.35% estimated annual management fee 12/2009 – 06/1993
  - 5.5% International Small Core – 4.0% DFISX 10/1996 – 12/2009, DFA International Small Company Index net of 0.71% estimated management fee 01/1990 – 09/1996
  - 5.5% International Small Value – 4.0% DISVX 01/1995 – 12/2009, DFA International Small Company Index, net of 0.83% estimated annual management fee 01/1990 – 12/1994
  - 1.0% Emerging Markets – 2.0% SSEMXX 03/1994 – 12/2009 – MSCI Emerging Markets Free (gross) index net of 1.25% estimated management fee 01/1990 to 02/1994
  - 2.5% Emerging Markets Small – 2.0% DEMSXX 04/1998 – 12/2009, Dimensional Emerging Markets Small Cap Index net of 1.20% estimated annual management fee 01/1994 – 03/1998, Fama/French Emerging Markets Small Cap Index net of 1.20% estimated annual management fee 01/1990 – 12/1993
  - 3.5% Emerging Markets Value – 2.0% DFEVX 04/1998 to 12/2009, Dimensional Emerging Markets Value Index net of 0.85% estimated annual management fee 01/1990 – 03/1997

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**100.35.3**

In August of 2010, the Mercer Advisors Portfolio 100.35.3 was changed to the following composition:

- 17.5% US Large Momentum – 17.5% French Big / High Momentum Index 01/1990-12/2009 net of 0.65% estimated annual management fee
- 5.5% US Large Core – 5.5% BTIX 01/1993-12/2009, DFLCX 01/91-12/92, S&P 500 Index net of 0.10% annual estimated management fee
- 17.5% US Large Value – 17.5% DFUVX 03/1995-12/2009, DFLVX 04/1993-02/1995, Fama/French US Large Value Index (ex. Utilities) net of 0.19% annual estimated management fee 01/1990-03/1993
- 9.0% US Small Momentum – 9.0% French Small / High Momentum Index 01/1990-12/2009 net of 0.49% estimated annual management fee
- 9.0% US Small Value – 9.0% DFFVX 01/2008-12/2009, DFSVX 04/1993 – 12/2007, Fama French Small Value Index (ex. Util) net of 0.56% annual estimated management fee 01/1990 – 03/1993
- 7.5% International Large Mom – 7.5% AQR International Momentum Index net of 0.65% estimated annual management fee 01/1990 – 12/2009
- 2.5% International Large Core – 2.5% BTAEX 02/1996 – 12/2009, MSCI EAFE Index net of 0.40% estimated annual management fee 01/1990 – 01/1996
- 7.5% International Large Value – 7.5% DFVIX 03/1995-12/2009, DFVIX 07/1993 – 02/1995, Fama/French Int'l Value Index net of 0.35% estimated annual management fee 12/2009 – 06/1993
- 4.0% International Small Core – 4.0% DFISX 10/1996 – 12/2009, DFA International Small Company Index net of 0.71% estimated management fee 01/1990 – 09/1996
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- 2.0% Emerging Markets Value – 2.0% DFEVX 04/1998 to 12/2009, Dimensional Emerging Markets Value Index net of 0.85% estimated annual management fee 01/1990 – 03/1997
- 10.0% Global Managed Futures – AQR Hypothetical Simple Managed Futures Strategy net of 1.25% estimated annual management fee 01/1990 – 12/2009