MFS® White Paper

April 2024

Finding Value in Compounding Returns Through a Cycle

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In Brief

US Equity market investors enjoyed annualized returns of 16% over the last 15 years.[1] While there have been market downturns over that period, including the COVID shock in 2020 and the market reaction to rate hikes in 2022, these episodes have been relatively brief and were followed by a rapid recovery. It has been 16 years since the Global Financial Crisis, which was the last protracted US equity market correction.

We believe the lack of a prolonged bear market in recent years has obscured the significant value that downside risk management can have for investors. While we are optimistic about long-term opportunities for active equity investors, inevitably the market will once again experience a prolonged downturn. We are prepared for that eventuality.

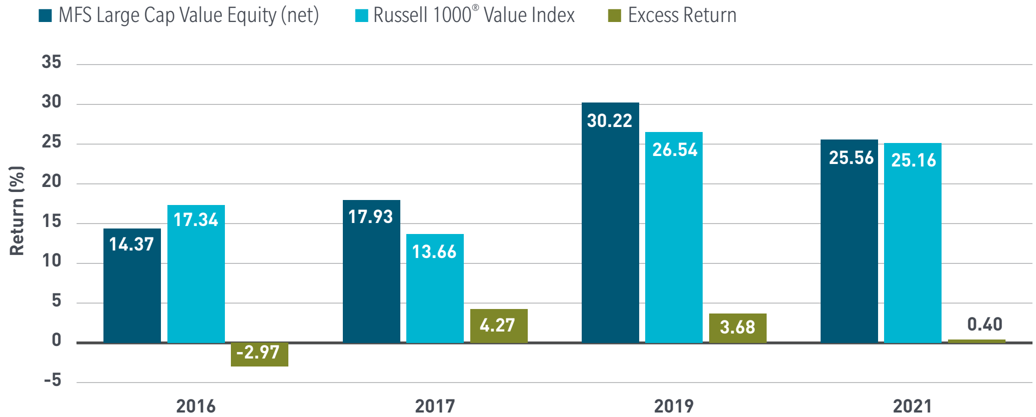
In this paper, we will make the case for:

- The importance of investing through the cycle, with a focus on downside risk management
- The importance of being a long-term investor and how holding periods influence the compounding of returns
- The role that valuation and durability can play in supporting downside protection and compounding returns over time

Investing through a Cycle, not for a Cycle

The MFS® Large Cap Value strategy has benefited investors not just during market downturns, but through full market cycles. For well over a quarter of a century, the MFS Large Cap Value strategy has outperformed its peer group and the Russell 1000® Value Index in difficult market environments, while also outperforming the index and peers much of the time in up markets.

Exhibit 1: MFS Large Cap Value Strategy Performance in Strong Equity Markets

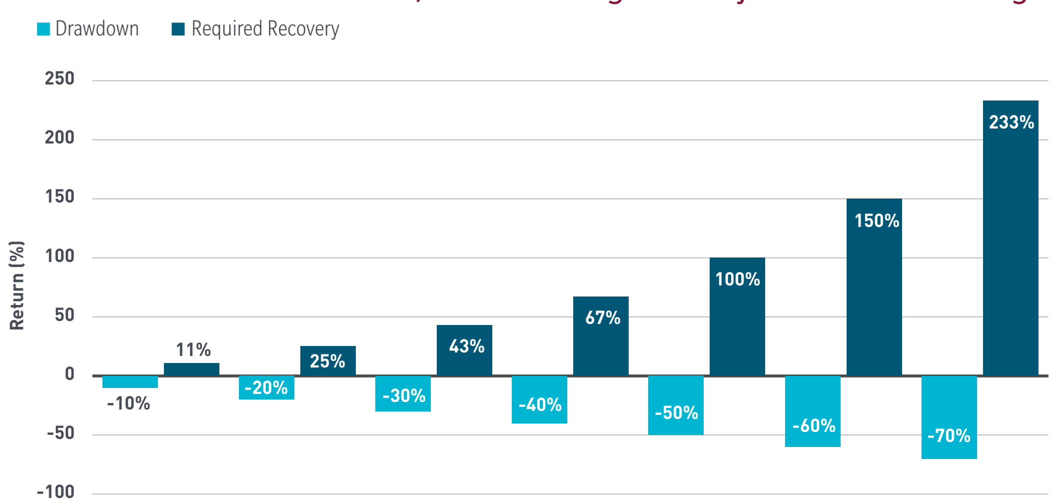


Source: Russell 1000® Value Index from SPAR, FactSet Research Systems Inc. MFS Large Cap Value returns are composite returns, net of fees. Past performance is not a reliable indicator for future results. All financial investments involve an element of risk. The value of investments may rise and fall so you may get back less than originally invested. Investors should consider the risks, including lower returns, related to currency movements between their investing currency and the portfolio's base currency, if different. It is not possible to invest directly in an index. Index performance will differ from our actively managed strategies, which may involve a higher degree of risk. Returns shown are in U.S. dollars.

The Asymmetry of Losses

Why is understanding the impact of negative returns so important? As shown in Exhibit 2, when markets go down, investors need to generate returns higher than the loss to recoup their initial investment. For example, if the market loses 50% of its value, it needs to appreciate 100% to fully return to its original value.

Exhibit 2: To Get Back to Even, Returns during Recovery Need to Be Much Higher



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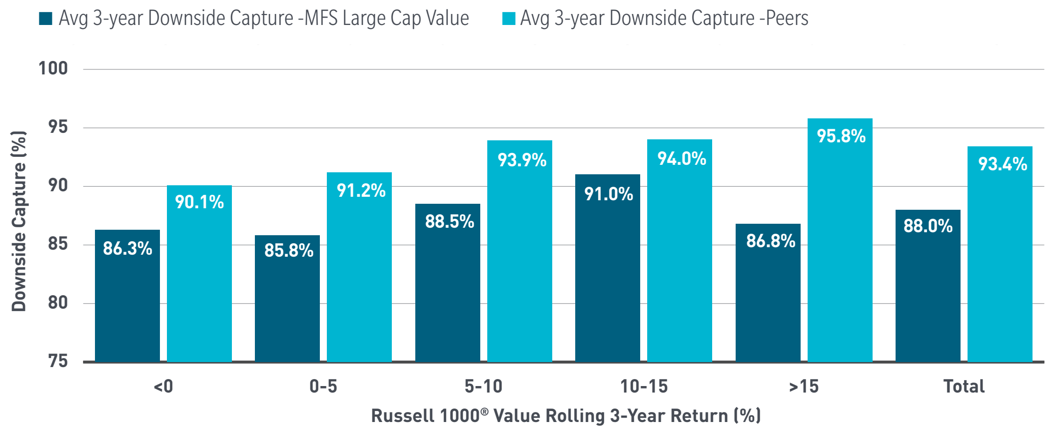
This simple math helps explain how a strategy that focuses on downside risk management can keep pace through a market cycle — even if it does not fully participate during periods of strong absolute performance. “Winning by not losing” is indeed a winning strategy over longer-periods of time.

Outperformance in Down Markets Matters

Making informed investment decisions with a keen appreciation for the importance of downside risk management has been a hallmark of the MFS Large Cap Value strategy since its inception. "Downside capture" is a metric used to measure how well a strategy protects investors in down markets. For example, if a manager returned -9%, but the benchmark returned -10%, the downside capture ratio would be 90%. In general, a lower ratio is an indicator of better downside protection. Since its inception, the MFS Large Cap Value strategy has had an average three-year downside capture ratio of 88.0%%, significantly outpacing its peer group as shown in Exhibit 3.

Exhibit 3: MFS Large Cap Value Three-Year Downside Capture versus Peers



Source: eVestment Alliance database. Peer universe as defined by eVestment. All returns for MFS Large Cap Value and peer universe are net-of-fee; all stats based on rolling three-year returns from January 1996 – December 31, 2023.

We see the strategy has strong downside capture metrics in high, low and negative returning periods, which we believe is evidence of the consistency in our approach to building and managing the portfolio.

As a recent case-in-point, the Russell 1000® Growth index appreciated nearly 43% in 2023, far outpacing the MFS Large Cap Value strategy, which was up 8.2%. However, when we look at the three-year period ended December 31, 2023, the returns of each were quite similar at 8.9% and 8.6%, respectively. To see how this is possible, look no further than 2022, where the strategy offered significant downside protection relative to the Russell 1000® Growth index. We see a similar, albeit less dramatic result versus the Russell 1000® Value Index, where downside protection in 2022 largely offset underperformance versus the index in 2023.

Exhibit 4: Downside Protection Can Be More Important than Upside Participation in Compounding Value

	MFS Large Cap Value	Russell 1000® Growth	Russell 1000® Value
2021	25.6%	27.6%	25.2%
2022	-5.8%	-29.1%	-7.5%
2023	8.2%	42.7%	11.5%
3-year annualized return	8.6%	8.9%	8.9%

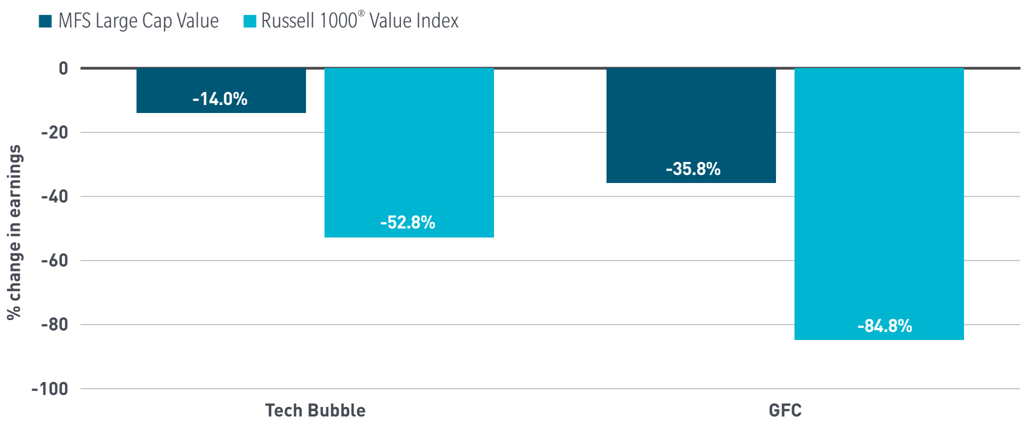
Source: Russell 1000® Value and Growth Index returns from SPAR, FactSet Research Systems Inc. MFS Large Cap Value returns are based on the MFS Large Cap Value composite, net-of-fees. Past performance is no guarantee of future results.

Evaluating and assessing risks are key elements that help in our ability to manage downside risk and our portfolio management team considers risks on multiple dimensions. During the portfolio construction process, we carefully consider factors such as the impact of technological disruption, the level of government spending in the face of rising fiscal deficits and macro economic factors such as inflation and interest rates. This analysis helps to ensure that bottom-up security selection decisions come together in a portfolio that can be resilient in difficult environments.

Risk management at the individual security level also plays a critical role in creating a more resilient portfolio. Company-specific risks are assessed from operational, financial and valuation dimensions. Taking a longer-term view to understand the range of potential outcomes a company might experience, combined with a focus on the company's level of free cash flow generation and valuation, help to increase the likelihood that the companies owned in the portfolio exhibit a higher degree of resilience and lower downside risk over time.

Difficult market environments very often coincide with challenging economic conditions and declining earnings. Owning companies with more attractive valuations and more resilient earnings has been an important contributor to the MFS Large Cap Value strategy's management of downside risk. The result of this risk management focus during protracted bear markets can be seen in Exhibit 5. This shows how the earnings of the companies owned in the MFS Large Cap Value strategy have been resilient, declining far less than the earnings for the Russell 1000® Value Index during these protracted crisis periods.

Exhibit 5: MFS Large Cap Value Earnings Held up Better during Crisis Periods



Source: FactSet. Tech Bubble period (6/30/00–9/30/02); GFC (7/31/07–2/28/09); portfolio and benchmark characteristics are reported monthly. The monthly data was selected to most closely align with the actual dates of the peak/trough of the market during these periods. The earnings change was calculated based on the price change of the MFS Large Cap Value strategy (representative account net-of-fee performance) and the price change of the Russell 1000® Value, excluding the impact of dividends. The change in P/E multiple was calculated based on the trailing P/E of the MFS Large Cap Value portfolio and the Russell 1000® Value benchmark at the start and ending dates. The difference between the price change and the multiple change is the estimated change in earnings for the MFS Large Cap Value strategy and the Russell 1000® Value for the designated periods of time.

A Long History of Navigating Difficult Environments

Since inception, the strategy has experienced two protracted bear market environments, the Tech Bubble (2000–2002) and the Global Financial Crisis (2007–2009), plus one brief, but extreme, sell-off during the beginning of the COVID-19 Pandemic in early 2020. Exhibit 6 shows how during each of these protracted bear markets, the strategy outperformed the Russell 1000® Value Index, as the more durable stocks owned in the MFS Large Cap Value portfolio lost less of their value versus the broader indices.

Exhibit 6: MFS Large Cap Value Performance in Bear Markets

Bear Market	MFS Large Cap Value Return	MFS Large Cap Value downside capture	Russell 1000® Value Return	Russell 1000® Growth Return
Tech Bubble (3/24/00–10/09/02)	-6%	76%	-28%	-64%
Global Financial Crisis (10/9/07–3/9/09)	-53%	89%	-60%	-51%
COVID-19 (2/19/20 – 3/23/20)	-37%	96%	-38%	-31%

Source: Russell 1000® Value and Growth Index returns from SPAR, FactSet Research Systems Inc. MFS Large Cap Value returns are based on the MFS Large Cap Value representative account, net-of-fees, based on daily cumulative performance. Downside capture is measured against the Russell 1000® Value Index.

As noted earlier, strategies with lower drawdowns have typically needed more moderate future returns relative to those that suffer larger declines to get back to the same place. This means that, in most cases, strategies that protect on the downside can recoup losses more quickly.

As shown in Exhibit 7, the greater downside protection of the MFS Large Cap Value strategy during these bear market periods means that the strategy didn't have to return as much as the Russell 1000® Value Index in order to recoup its losses, shortening the overall recovery time.

Exhibit 7: MFS Large Cap Value Performance during Recovery Phase

Bear Market	MFS Large Cap Value		Russell 1000® Value		Russell 1000® Growth	
	Return	Recovery Time (months)	Return	Recovery Time (months)	Return	Recovery Time (months)
Tech Bubble	7%	<1	38%	11	175%	131
Global Financial Crisis	111%	42	150%	47	105%	23
COVID-19	58%	8	63%	8	46%	3

Source: Russell 1000® Value and Growth Index returns from SPAR, FactSet Research Systems Inc. Recovery time calculated based on the recovery in value for the MFS Large Cap Value representative account (net-of-fees), the Russell 1000® Value Index, and the Russell 1000® Growth Index measured at the peak in U.S. equity markets (proxied by the S&P 500® Index) for three time periods: the Technology Bubble (March 24, 2000), the peak before the Global Financial Crisis (October 9, 2007) and the COVID-19 Pandemic (February 19, 2020) until the full value was recovered. Tech Bubble recovery (MFS Large Cap Value Equity – 10/11/2002, Russell 1000® Value– 9/8/2003, Russell 1000® Growth–9/16/2013); Global Financial Crisis recovery (MFS Large Cap Value Equity – 9/12/2012, Russell 1000® Value–1/24/2013, Russell 1000® Growth–2/7/2011); COVID-19 recovery (MFS Large Cap Value Equity – 11/24/2020, Russell 1000® Value– 12/4/2020, Russell 1000® Growth–6/8/2020).

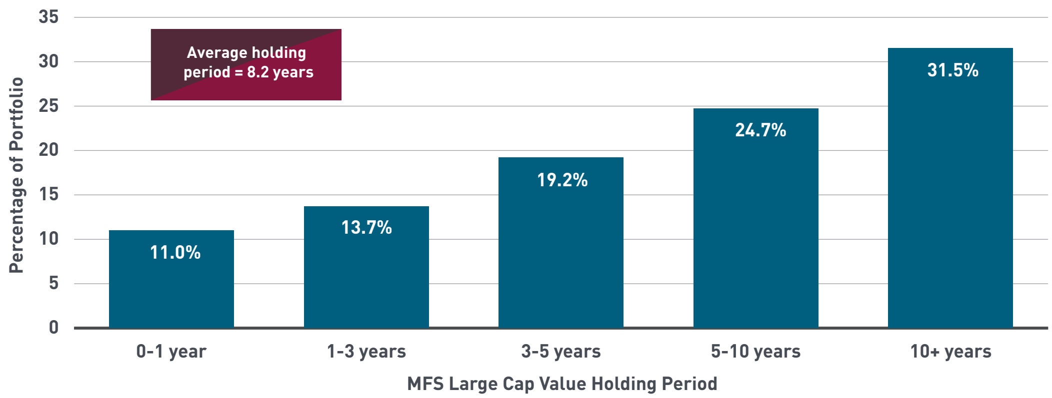
For perspective, it took the Russell 1000® Growth Index eleven years from the bottom of the Technology Bubble, to fully return to the value of its prior peak in September 2000. In contrast, it only took the MFS Large Cap Value strategy less than one month to recover. As Albert Einstein once said, "The most powerful force in the universe is compound interest," or, in the world of investing, compounding returns. Starting from a higher base can be incredible advantage for investors to help generate value over long periods of time.

In addition, experiencing less of a capital loss than the market can help keep investors invested in the market: They may feel less compelled to limit further losses after a significant sell-off by exiting the market at what could be the bottom. Behavioral finance studies have shown that investors often feel the pain from the loss of capital to a greater degree than they receive joy from capital appreciation, which may cause them to make poor decisions, such as re-allocating to cash at or near a market bottom, and subsequently missing out on the market recovery.[2] This can potentially lock in losses that otherwise may have been recouped over time. We believe providing downside risk management can help investors avoid some of these behaviors, which may lead to better outcomes.

Staying Actively Invested for the Long Term

The MFS Large Cap Value strategy has always had a long-term focus, as evidenced by the strategy's average holding period of 8.2 years as compared to the average holding period of a US stock of eight months.

Exhibit 8: Investing for the Long Term



Source: Based on MFS Large Cap Value representative account for period September 1999 through December 2023. Average holding period is calculated by first defining holding duration as the time between oldest purchase of a security, which is then continuously held in the portfolio, through period end. The holding duration of each security held at the period end is then used to calculate the simple average. The individual security's history is based on the individual security's current identifier (CUSIP/SEDOL), therefore, any history prior to a change in identifier would not be accounted for in the calculation.

Over the past decade, the average turnover for the strategy has been roughly one-third that of the US Large Cap Equity peer group, while generating higher excess returns and taking less risk than peers. We believe this long-term view has given investors in the strategy an opportunity to compound value through time.

Exhibit 9: Average Turnover for the MFS Large Cap Value Strategy versus Peers

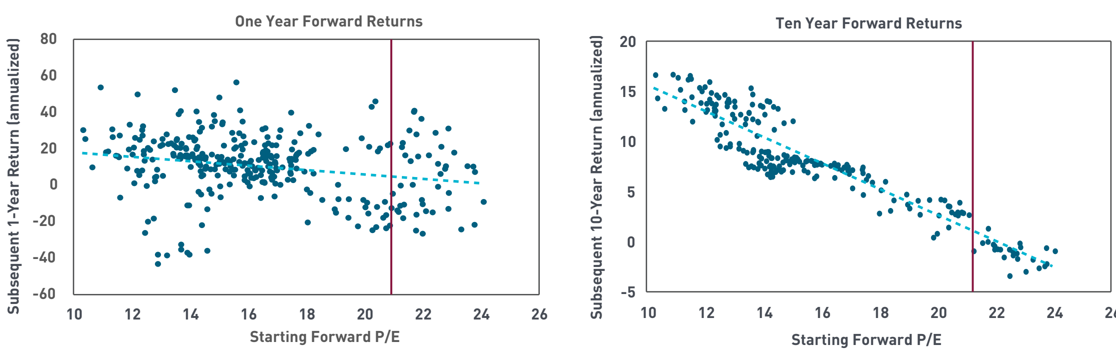
	Average Turnover (10-yr)	Turnover Quartile	Average 10-yr Rolling Excess Return	Average 10-yr Rolling Standard deviation of returns
MFS Large Cap Value	12%	1	0.80%	14.22%
U.S. Large Cap Value Equity Universe	43%	3	0.35%	15.04%

Source: eVestment Alliance database. US Large Cap Value Equity universe includes managers with a primary benchmark of the Russell 1000® Value Index. To be included, managers must have a return for the most recent quarter. Some managers do not have data points reported for all periods. Excess return and standard deviation are based on monthly returns, net of fees over 120 rolling10-year monthly observations from 3/31/2004 to 3/31/2024. Average turnover is the average of the rolling 12-month turnover, reported quarterly for the period 3/31/2014 to 3/31/2024.

Valuation is a Key Consideration for Long-term Investors

While there is limited correlation between valuation and short-term performance, over time, valuation is one of the most important drivers of stock price performance across market cycles. Our analysis has shown the higher the starting level of valuation, the lower the level of future returns that should be expected, with the opposite being true as well.

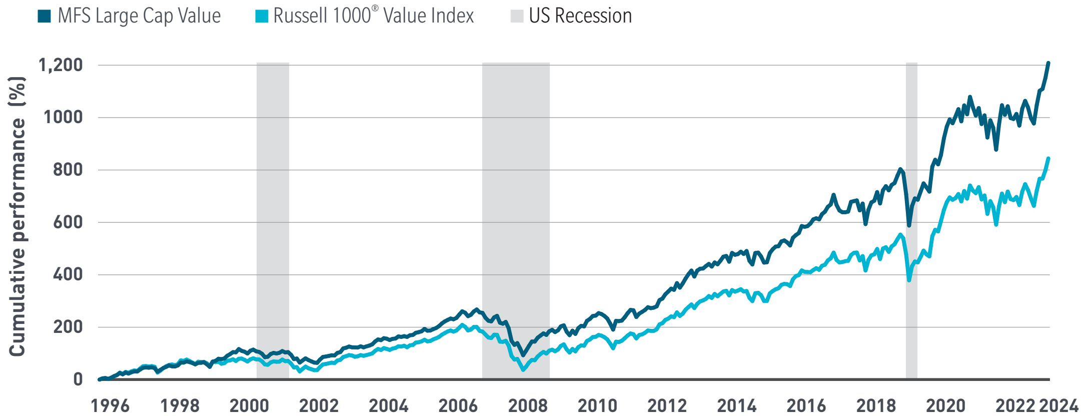
Exhibit 10: Starting Points Matter



Source: FactSet. Monthly data as of 30 September 1995 to 29 December 2023 for the S&P 500 Total Return Index. Total returns are gross and in US dollars. Red bar represents where the P/E of 21.0x as of March 31, 2024 would approximately fall on the chart. No forecasts can be guaranteed.

The MFS Large Cap Value strategy applies a disciplined framework to assess valuation and the potential downside risks of paying too much to own a company. We believe taking a long-term approach that focuses on durable businesses with strong returns bought at attractive valuations helps avoid against owning value traps — companies that look cheap based on earnings estimates, but whose businesses are fundamentally challenged and are not good investments. We believe our focus on owning higher-quality, reasonably valued companies that can compound earnings through the market cycle should ultimately deliver positive results for clients. This is evidenced in Exhibit 11, which demonstrates that the MFS Large Cap Value strategy has significantly outperformed the Russell 1000® Value Index since inception.

Exhibit 11: MFS Large Cap Value has Outperformed over the Long-Term

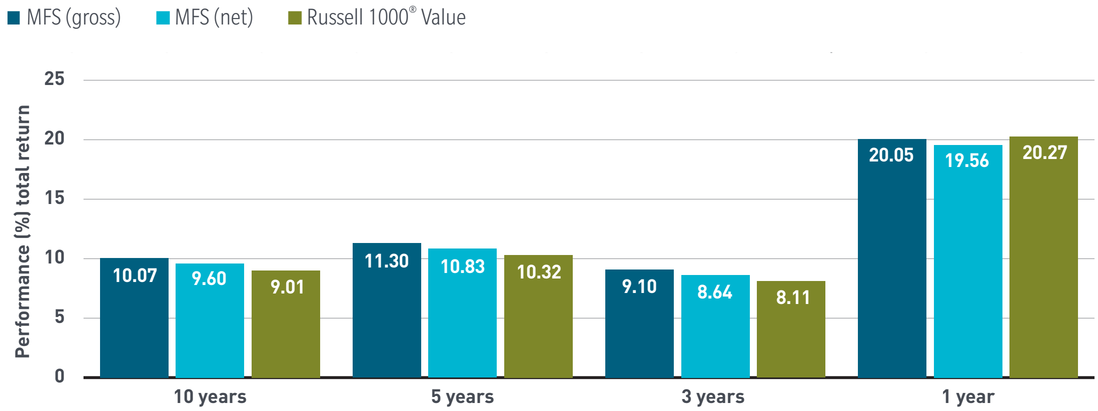


Source: SPAR, FactSet Research Systems Inc using MFS Large Cap Value composite (net-of-fee) for period 31 December 1996 through 31 March 2024. Gray bars represent recessions as defined by the National Bureau of Economic Research.

Conclusion

With the last protracted downturn occurring over 15 years ago, we believe many investors may have lost sight of the importance of downside risk management in generating long-term returns. While we don't know what the next equity market downturn will look like, we believe that the MFS Large Cap Value strategy's disciplined focus on valuation, long-term business durability of the companies it owns and strong focus on downside risk management will serve our clients well in the future as it has for the last three decades.

Performance (%) total return as of 31-March 2024



	10 years	5 years	3 years	1 year
Gross vs. Russell 1000® Value	1.06	0.99	0.99	-0.22
Net vs. Russell 1000® Value	0.59	0.52	0.53	-0.70

Annual performance (%)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
MFS gross	11.27	0.10	14.87	18.43	-9.37	30.76	4.43	26.09	-5.42	8.71
MFS net	10.76	-0.35	14.37	17.93	-9.76	30.22	3.98	25.56	-5.82	8.27
Russell 1000® Value	13.45	-3.83	17.34	13.66	-8.27	26.54	2.80	25.16	-7.54	11.46

Source: SPAR, FactSet Research Systems, Inc. using MFS Large Cap Value composite for periods shown. Past performance is not a reliable indicator for future results. All financial investments involve an element of risk. The value of investments may rise and fall so you may get back less than originally invested. Investors should consider the risks, including lower returns, related to currency movements between their investing currency and the portfolio's base currency, if different. See the GIPS Composite Report at the end of this presentation for performance methodology and other information. It is not possible to invest directly in an index. Index performance will differ from our actively managed strategies, which may involve a higher degree of risk. Total gross of fee returns include both capital appreciation and reinvestment of income but exclude custody fees.

End notes

[1] Source: SPAR FactSet Research Systems Inc. Performance for the S&P 500 Total Return Index for the period 3/31/2009 through 3/31/2024.

[2] Source: Kahneman, D., & Tversky, A. (1984). Choices, values, and frames. American Psychologist, 39 (4), 341–350.

Important Risk Considerations

Stock markets and investments in individual stocks are volatile and can decline significantly in response to or investor perception of, issuer, market, economic, industry, political, regulatory, geopolitical, and other conditions. n The portfolio's investments can continue to be undervalued for long periods of time, not realize their expected value, and be more volatile than the stock market in general.

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Composite: MFS Large Cap Value Equity Composite

Benchmark: Russell 1000® Value - Total Return

Creation Date: 20-Feb-2001

Inception Date: 01-Feb-1989

Composite Description: The MFS Large Cap Value Equity Composite includes all discretionary portfolios managed to the MFS Large Cap Value strategy that do not have extensive guideline restrictions. The strategy seeks capital appreciation and reasonable income by investing principally in a diversified portfolio of large-cap, high-quality, attractively valued stocks. The strategy focuses on investing in the stocks of companies it believes are undervalued compared to their perceived worth (value companies). The strategy focuses on investing in securities of U.S. companies but may also invest in non-U.S. securities. Stock markets and investments in individual stocks are volatile and can decline significantly in response to or investor perception of, issuer, market, economic, industry, political, regulatory, geopolitical, and other conditions. The portfolio's investments can continue to be undervalued for long periods of time, not realize their expected value, and be more volatile than the stock market in general.

Institutional Separate Accounts Fee Schedule

Asset Breakpoints (USD)	Fee
For Assets Up To 50 MM	55 bp
For Assets From 50 MM To 100 MM	45 bp
For Assets Over 100 MM	40 bp

Accounts are eligible for inclusion in the composite if they have assets greater than 1 MM USD. Accounts are included as of their first full month of performance.

Derivative Exposure Disclosure

Certain accounts in this composite utilize derivatives for hedging, investment exposure, implementation efficiency, and transaction cost mitigation purposes. Derivative exposures can be volatile, used to take long or short positions, involve leverage (which can magnify gains or losses), and involve counterparty and liquidity risk. The table below displays the high, median, and low month-end derivative exposures over the last three years, when available or since inception if the composite is less than three years old. Derivative exposure of the account is calculated as the gross equivalent exposure of total net assets. The derivative exposures, displayed below, are the average exposures of the accounts that held derivatives.

LONG EXPOSURE	SHORT EXPOSURE

	Composite and Benchmark Return %			Composite	Accounts in Composite at	Annualized 3-Year Standard Deviation		Assets (USD million)	
Period	Gross of fees	Net of fees^	Benchmark	Dispersion	End of Period	Composite	Benchmark	Composite	Firm
2023	8.71	8.27	11.46	0.12	24	15.82	16.74	$79,080.4	$575,589.7
2022	-5.42	-5.82	-7.54	0.19	26	20.09	21.55	$80,858.8	$527,229.5
2021	26.09	25.56	25.16	0.13	25	17.72	19.33	$93,205.5	$674,375.8
2020	4.43	3.98	2.80	0.19	25	18.67	19.90	$77,847.7	$599,076.3
2019	30.76	30.22	26.54	0.10	27	12.11	12.02	$74,716.6	$518,568.9
2018	-9.37	-9.76	-8.27	0.09	26	11.06	10.98	$59,209.4	$426,543.5
2017	18.43	17.93	13.66	0.09	25	10.22	10.34	$68,911.0	$491,012.9
2016	14.87	14.37	17.34	0.10	25	10.91	10.93	$58,711.0	$425,539.8
2015	0.10	-0.35	-3.83	0.15	28	11.32	10.83	$51,264.1	$412,412.4
2014	11.27	10.76	13.45	0.10	30	9.83	9.33	$54,551.4	$430,214.0

MFS Investment Management® claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. MFS Investment Management has been independently verified for the periods 1-Jan-1988 through 31-Dec-2022. The verification report is available upon request. A firm that claims compliance with the GIPS standards must establish policies and procedures for complying with all the applicable requirements of the GIPS standards. Verification provides assurance on whether the firm´s policies and procedures related to composite and pooled fund maintenance, as well as the calculation, presentation, and distribution of performance, have been designed in compliance with the GIPS standards and have been implemented on a firm-wide basis. Verification does not provide assurance on the accuracy of any specific performance report. GIPS® is a registered trademark of CFA Institute. CFA Institute does not endorse or promote this organization, nor does it warrant the accuracy or quality of the content contained herein.
Past performance is no guarantee of future results.
Performance for periods less than one year are not annualized.

Total Gross of fee returns in USD (includes both capital appreciation and reinvestment of income) are net of transaction costs, withholding taxes and direct expenses, but before management fees, custody and other indirect expenses. Typical separate accounts utilize 4:00 PM (London Time) foreign exchange rates; retail products will use rates deemed most appropriate for daily NAV per share calculations. The possibility exists for performance dispersion between otherwise similarly managed accounts and also with the benchmark.
Net of fee returns presented in this table are gross of fee returns reduced by management fees and performance fees if applicable (actual fees). For certain accounts where the actual fees are unavailable, the maximum applicable annual institutional separate account fees were applied.
Total returns of the benchmark are provided for each period depicted, expressed in USD. Source of Benchmark Performance: FACTSET ®.

Russell 1000® Value - Total Return - constructed to provide a comprehensive barometer for the value securities in the large-cap segment of the U.S. equity universe. Companies in this index generally have lower price-to-book ratios and lower forecasted growth values.
Composite Dispersion is measured by the asset-weighted standard deviation of gross of fees account returns for all accounts in the composite for the full period. For composites containing less than six accounts for the full period, dispersion is deemed not meaningful and is not presented. The three-year annualized ex post standard deviation measures the variability of the gross of fees composite returns and the benchmark returns over the preceding 36-month period.
The composite asset minimum changed from 2MM USD to 1MM USD effective 1-Nov-2022.

For purposes of GIPS compliance, the firm is defined as MFS Investment Management (MFS), which is comprised of Massachusetts Financial Services Company and MFS Institutional Advisors, Inc. (MFSI), each of which is a registered investment advisor, MFS Heritage Trust Company, a New Hampshire Trust company, and MFS Investment Management Canada Limited. Total firm assets include assets managed by Massachusetts Financial Services Company, MFSI, MFS Heritage Trust Company and MFS Investment Management Canada Limited as well as assets managed by Massachusetts Financial Services Company and MFSI in a sub-advisory capacity on behalf of affiliated investment advisors that may or may not be registered under the United States Investment Advisers Act of 1940, such as MFS International (U.K.), Ltd. (MIL UK) and MFS Investment Management K.K. (MIMKK), MFS International Singapore Pte. Ltd, MFS International Australia Pty Ltd, and MFS Investment Management Company (Lux) S.à r.l as well as assets managed by Massachusetts Financial Services Company and MFSI on behalf of unaffiliated investment advisors that are not registered under the United States Investment Advisers Act of 1940.
The firm's list of composite descriptions, list of pooled fund descriptions for limited distribution pooled funds, and list of broad distribution pooled funds are available upon request. Additionally, policies for valuing investment, calculating performance, and preparing GIPS Reports are available upon request.

High	10.72%	**High**	-10.70%
Median	3.59%	**Median**	-3.55%
Low	2.05%	**Low**	-2.06%

Limited Distribution Pooled Fund Fees and Expenses

Fund Name	Vehicle	Max Management Fee	Other Expense	Total Expenses
MFS Heritage Trust Company Collective Investment Trust - MFS Large Cap Value Fund	Collective Investment Trust	47	5	52