S&P Dow Jones Indices

A Division of S&P Global

Education

Value: A Practitioner's Guide

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WHAT IS VALUE?

The foundational lessons of Graham and Dodd provide a recipe for market participants to look at stocks based on a valuation framework and to understand the relative cheapness of stocks. This framework has been used throughout the years, and many have adapted or adjusted it to meet their investment styles or views.

At the most basic level, the goal of investing in value stocks is to buy stocks that are trading at a discount relative to their peers (based on company financials) but have upside potential. How someone measures the relative "cheapness" and determines how much of a portfolio to put in a "cheap" stock are key items to consider when looking at value.

Using company financial metrics, the S&P Enhanced Value Indices seek to measure stocks with attractive valuations based on three key fundamentals.

The S&P 500 Enhanced Value Index focuses on using foundational financial ratios to select and weight value stocks.

1) **Price-to-Earnings Ratio:** Calculated as a company's trailing 12-month earnings per share divided by its share price. A key metric used for company valuation, we use this ratio to identify companies with earnings that may not be reflected in their share price when compared with other companies.
2) **Price-to-Book Value Ratio:** Calculated as a company's latest book value per share divided by its share price. This metric is key in understanding what proportion of a company's assets are priced into the shares of a company.
3) **Price-to-Sales Ratio:** Calculated as a company's trailing 12-month sales per share divided by its share price. This metric is used to identify companies that might not have consistent earnings but still maintain robust sales growth relative to their share price appreciation.

These three ratios were selected to identify the stocks that could have the most potential upside value relative to their share price. For each stock in the underlying index and for each metric, a risk-adjusted z-score is calculated and a simple average of these three z-scores is taken.[1]

[1] For more information regarding the calculation of the z-scores for the S&P Enhanced Value Indices, please see the methodology.

HOW HAS VALUE PERFORMED?

As the goal of investing in value stocks is to buy low-cost stocks that have upside potential, a key point to understand is how this strategy has performed over time. To do this, we'll look at a few key metrics, starting with the relative total return for the S&P 500® Enhanced Value Index, S&P 500 Value, and S&P 500 Pure Value versus the S&P 500. Exhibit 1 gives a brief breakdown of these three indices.

Exhibit 1: Index Mechanics

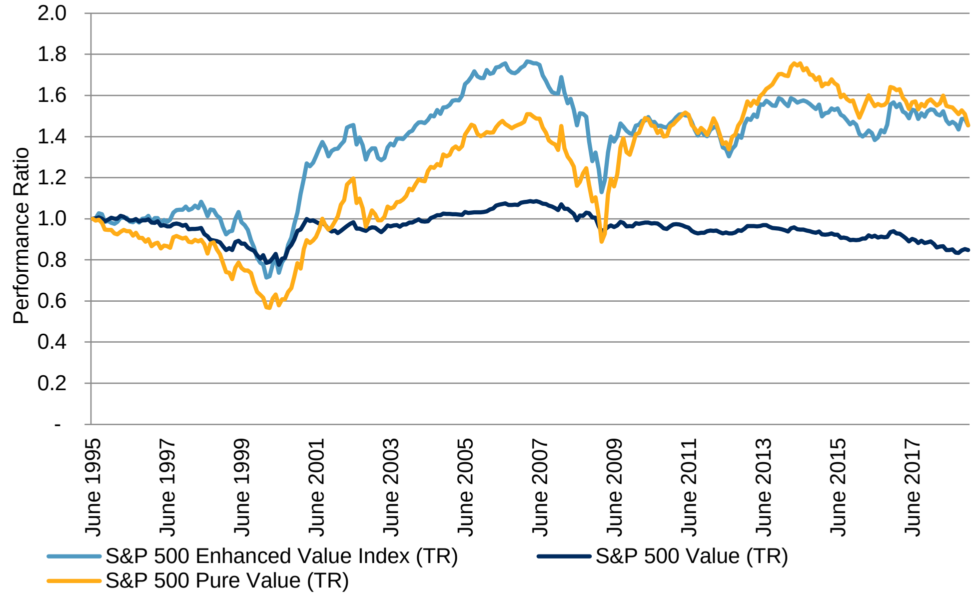
MECHANIC ELEMENT	S&P 500 ENHANCED VALUE INDEX	S&P 500 PURE VALUE	S&P 500 VALUE
Relative Value Factor Exposure	Highest	Medium	Lowest
Number of Constituents	100	Varies based on style score	Broadest—approximately 66% of the S&P 500 Market Cap
Weighting Scheme	Float Market Cap * Value Factor Z-score	Style Attractiveness Weighted	Float-Market-Cap Weighted
Rebalancing Frequency	Semiannually in June and December	Annually in December	Annually in December

Source: S&P Dow Jones Indices LLC. Table is provided for illustrative purposes.

Outside of the financial crisis, the S&P 500 Enhanced Value Index has historically shown broader and sustained outperformance relative to the S&P 500.

Exhibit 2 shows the ratio of total return of the S&P 500 Enhanced Value Index, S&P 500 Value, and S&P 500 Pure Value versus the S&P 500 (TR). When looking at the three different value indices, you can see that the S&P 500 Value, which has the broadest set of names and a float-market-cap weighting, has performed relatively in line with the S&P 500. However, as the names are concentrated and the constituents are weighted based on the exposure to the value factor, the past performance becomes much more differentiated. Historically, the two indices that have a more targeted approach to capturing the value factor, the S&P 500 Enhanced Value Index and the S&P 500 Pure Value, maintained ratios above 1 for most of the 23-year period. When looking at the S&P 500 Enhanced Value Index, the chart primarily shows an upward trend, which implies broader and sustained outperformance relative to the S&P 500. Exhibit 3 shows the historical total return of the indices starting in June 1995 and further reinforces the seemingly sustained outperformance over time.

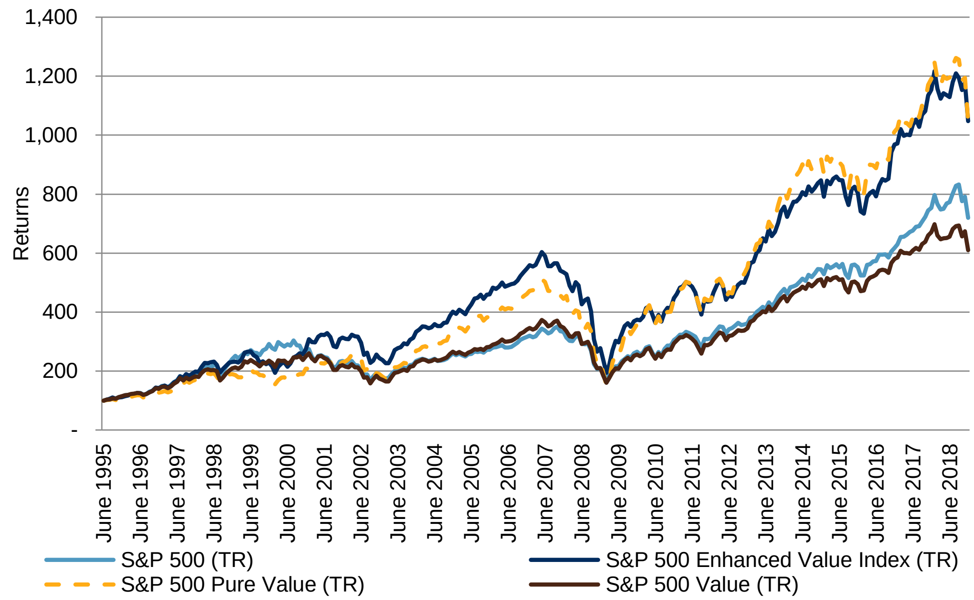
Exhibit 2: Relative Performance of the S&P 500 Value Indices Versus the S&P 500



Source: S&P Dow Jones Indices LLC. Data from June 1995 to December 2018. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 3: Performance of the S&P 500 Value Indices and the S&P 500

When looking at the three different value indices, you can see that the S&P 500 Value, which has the broadest set of names and a float-market-cap weighting, performs relatively in line with the S&P 500.



Source: S&P Dow Jones Indices LLC. Data from June 1995 to December 2018. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Looking at relative performance gives a good indication of the performance of the indices over time, but if we take a deeper dive into performance statistics, it can be seen that over the period studied (23 years), on a risk-adjusted basis, the S&P 500 Enhanced Value Index performed better than the other value strategies and had a higher annualized return (non risk adjusted) than the S&P 500 (see Exhibit 4). From a risk standpoint, all of the value strategies had a higher annualized volatility than the S&P 500, with a noticeable uptick for the 10-year period, which spans the financial crisis.

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Exhibit 4: Risk/Return Comparison

PERIOD	S&P 500 (TR)	S&P 500 ENHANCED VALUE INDEX (TR)	S&P 500 PURE VALUE (TR)	S&P 500 VALUE (TR)
ANNUALIZED RETURN (%)				
1-Year	-4.38	-9.20	-12.00	-8.95
3-Year	9.26	9.21	7.41	7.23
5-Year	8.49	6.71	5.11	6.06
7-Year	12.70	13.30	13.23	11.06
10-Year	13.12	14.21	16.28	11.21
15-Year	7.77	7.93	9.49	6.72
20-Year	5.62	7.84	8.93	5.51
Cumulative	8.76	10.51	10.51	8.00
ANNUALIZED RISK (%)				
3-Year	10.95	14.17	14.04	11.18
5-Year	10.94	13.36	13.54	10.98
7-Year	10.65	13.85	14.13	10.93
10-Year	13.60	19.11	21.92	14.77
15-Year	13.47	18.70	20.77	14.41
20-Year	14.47	19.07	20.60	15.24
Cumulative	14.70	18.49	19.67	15.30
RISK-ADJUSTED RETURN				
3-Year	0.85	0.65	0.53	0.65
5-Year	0.78	0.50	0.38	0.55
7-Year	1.19	0.96	0.94	1.01
10-Year	0.96	0.74	0.74	0.76
15-Year	0.58	0.42	0.46	0.47
20-Year	0.39	0.41	0.43	0.36
Cumulative	0.60	0.57	0.53	0.52

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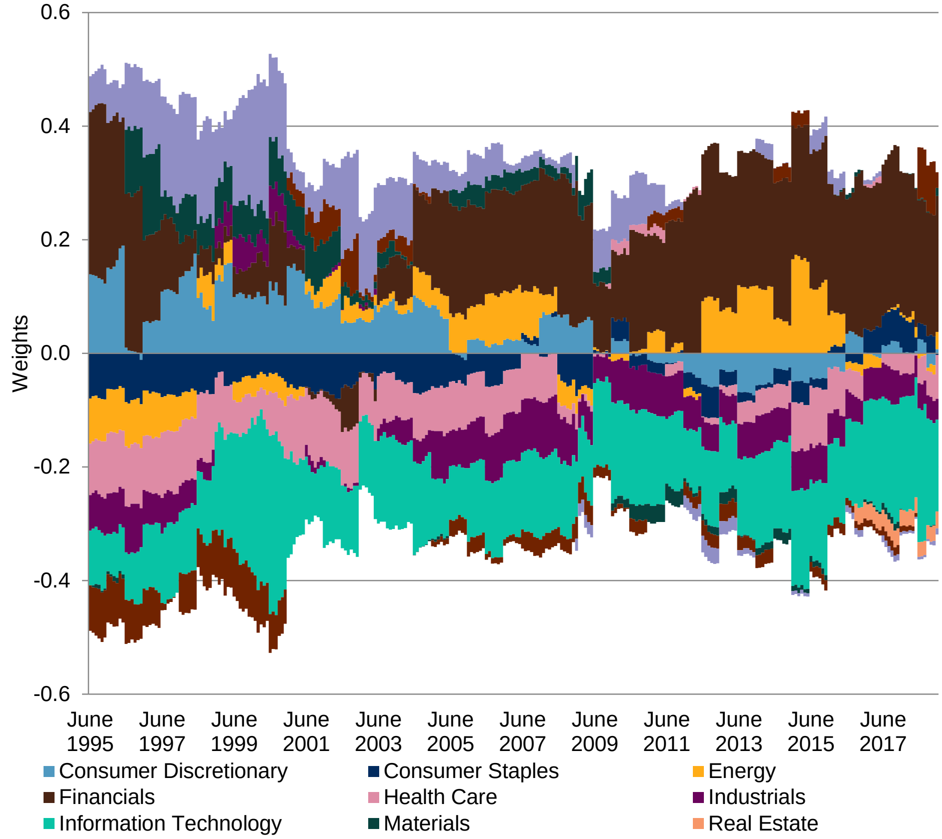
To uncover what may have driven the difference in the risk and performance statistics for the S&P 500 Enhanced Value Index at the 10-year point, we started by looking at its sector allocations relative to the S&P 500, focusing on the period from January 2007 to December 2009. Exhibit 5 shows the overweight and underweight sector allocations in the S&P 500 Enhanced Value Index relative to the S&P 500 for the 23-year period. It's easy to see that, historically, the S&P 500 Enhanced Value Index had a large active allocation to the financials sector.

Exhibit 5: S&P 500 Enhanced Value Index Sector Over/Underweights Relative to the S&P 500

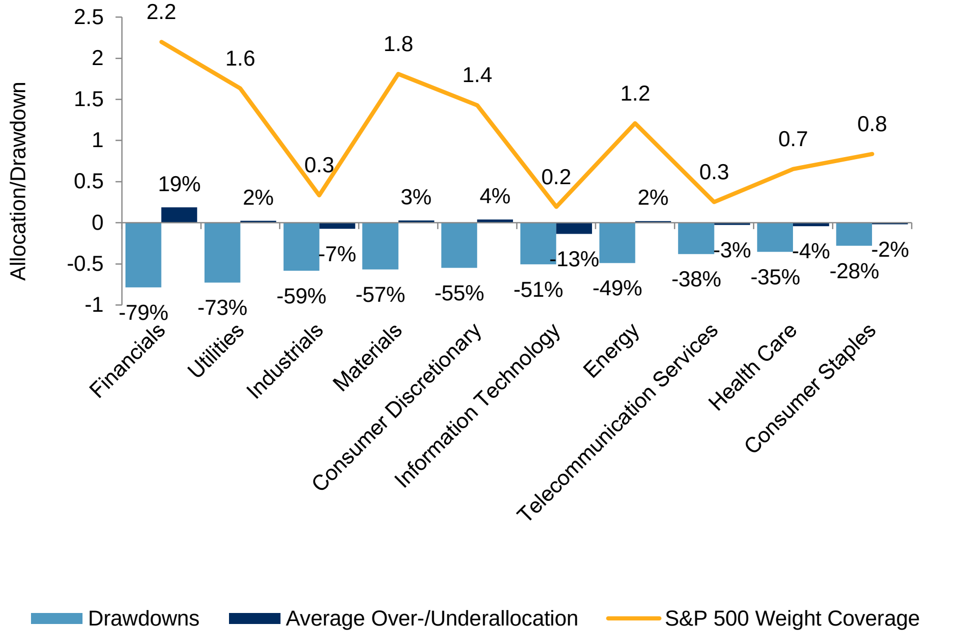


Source: S&P Dow Jones Indices LLC. Data from June 1995 to December 2018. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Between January 2007 and December 2009, as expected due to the financial crisis, the financials sector had the largest drawdown.

If we dig a little deeper and look at the total returns for the S&P 500 sectors, we can see that between January 2007 and December 2009, as expected due to the financial crisis, the financials sector had the largest drawdown (see Exhibit 6). One interesting thing to note is that during this period, the S&P 500 Enhanced Value Index had an average active allocation of about 19% in financials, the largest of any sector (over the 23 years, the average was 16%). Similarly, the index allocated an average of 2.2 times the weight of financials than the S&P 500 did during this period (over the 23 years, the average was 2.0 times).

Exhibit 6: S&P 500 Enhanced Value Index Sector Allocations Versus the S&P 500 and Sector Drawdowns



Source: S&P Dow Jones Indices LLC. Data from January 2007 to December 2009. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

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EXPOSURE TO THE VALUE FACTOR

While understanding what happened during the financial crisis provides insight into that period, a key point to understand in order to gain insight into how the performance could be affected during future market cycles is the construction of the index. As the index uses financial ratios for stock selection and weighting, the financial fundamentals and how the S&P 500 Enhanced Value Index measures up against the S&P 500 are foundational. Exhibits 7 and 8 show the price-to-earnings (P/E) and price-to-sales ratios for the past four quarters, and Exhibit 9 shows the price-to-book value ratio for the prior quarter. There has been a stark difference between the two indices when it comes to all three of the ratios. Historically, the S&P 500 Enhanced Value Index has shown a relative "cheapness" for each of the fundamentals, regardless of the time period they are covering.

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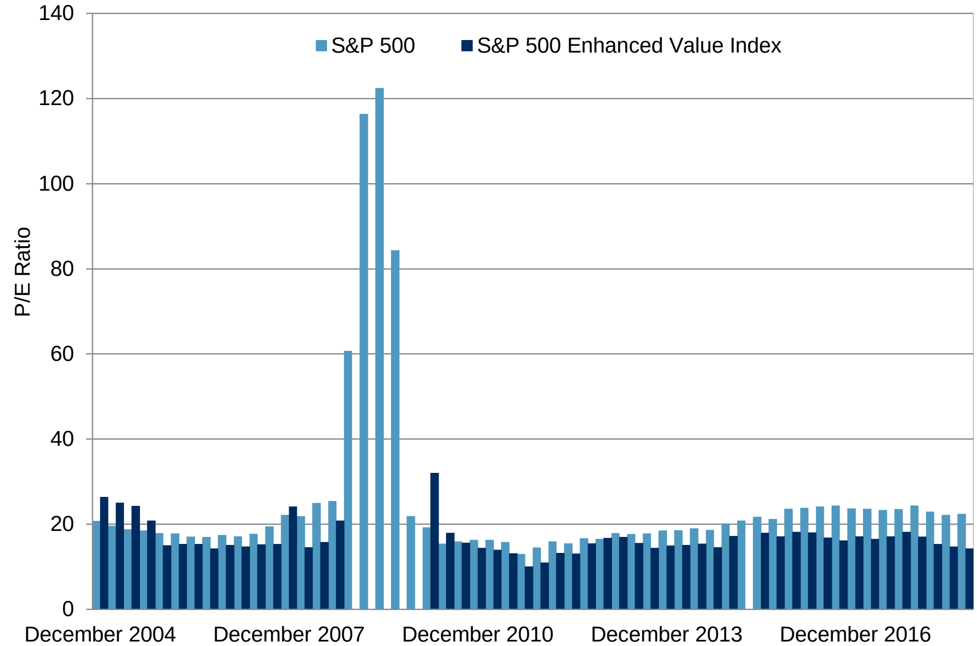
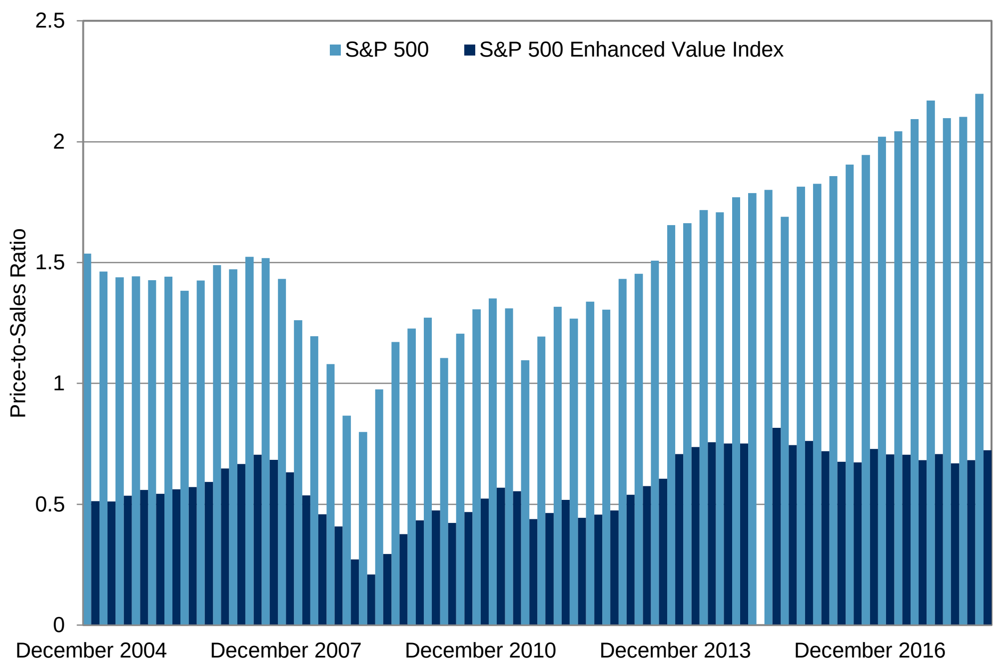
Exhibit 7: P/E Ratio (Prior 4 Quarters) for the S&P 500 Enhanced Value Index and S&P 500



Source: S&P Dow Jones Indices LLC. Data from December 2004 to December 2018. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

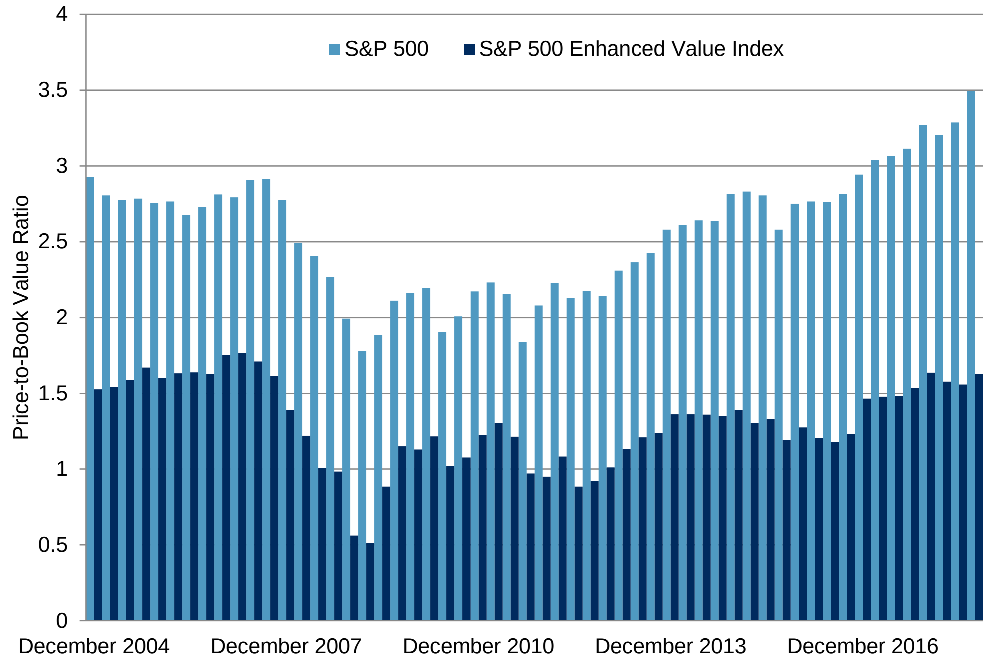
Exhibit 8: Price-to-Sales Ratio (Prior 4 Quarters) for the S&P 500 Enhanced Value Index and S&P 500



Source: S&P Dow Jones Indices LLC. Data from December 2004 to December 2018. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

When looking at the historically lower fundamental ratios in markets where fundamentals are driving a stock's performance, there is potential for the S&P 500 Enhanced Value Index to perform well, based on the favorable valuations of the companies within it.

Exhibit 9: Price-to-Book Value Ratio (Prior Quarter) for the S&P 500 Enhanced Value Index and S&P 500



Source: S&P Dow Jones Indices LLC. Data from December 2004 to December 2018. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

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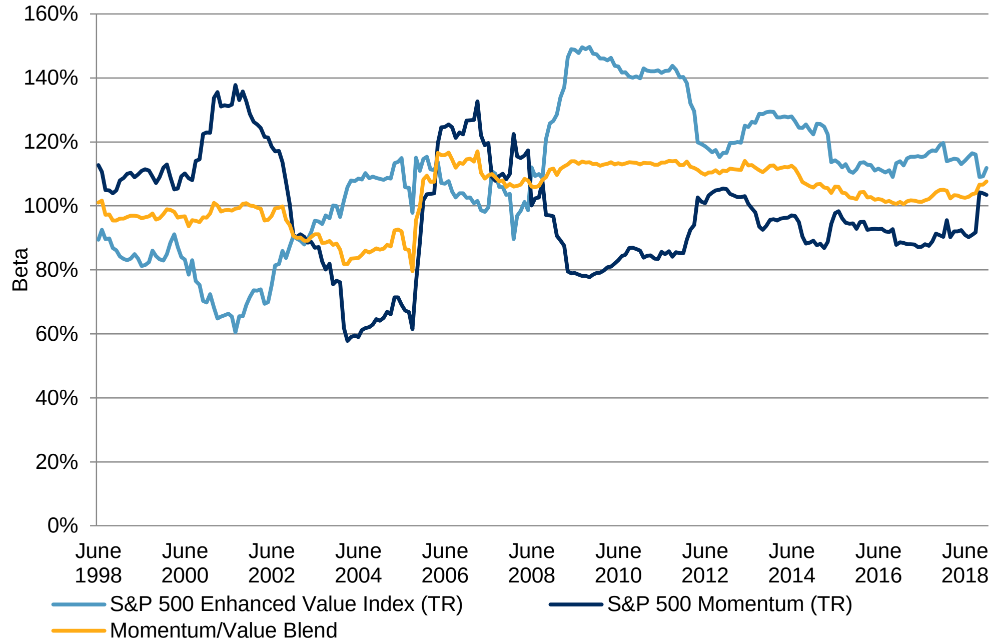
POSSIBLE USES OF VALUE

Now that we've taken a look at the construction of the index, the fundamentals that the index captures, and the relative risk/return profile, the next step is to look at how to incorporate the index into a portfolio. When we look at Exhibit 10, which shows the rolling three-year betas of the S&P 500 Momentum and S&P 500 Enhanced Value Index, the two indices look like they complement each other well. When we look at a 50/50 blend of the two indices, this becomes even more apparent, as the beta of the blend to the S&P 500 gains stability.

Exhibit 10: Rolling 36-Month Betas Relative to the S&P 500

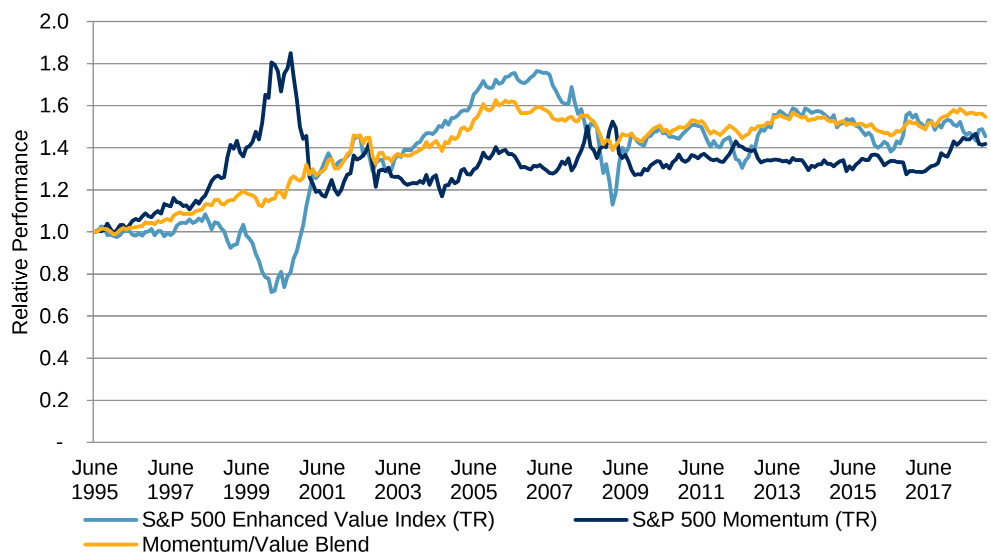


Source: S&P Dow Jones Indices LLC. Data from June 1998 to December 2018. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

We can see that the historical relative performance of the blend was more stable than the S&P 500 Enhanced Value Index and S&P 500 Momentum.

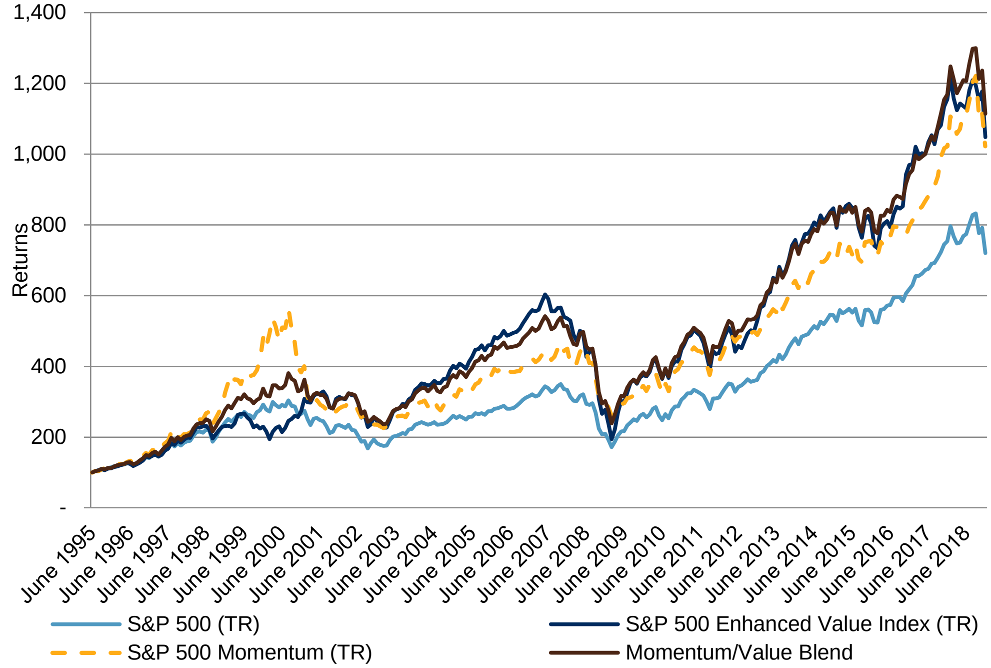
If we were to blend the indices with just a simple 50/50 allocation, we can see in Exhibits 11 and 12 that the historical relative performance of the blend was more stable than the S&P 500 Enhanced Value Index and S&P 500 Momentum and that the blend had a healthy cumulative outperformance relative to the S&P 500 over the period studied.

Exhibit 11: Relative Performance Versus the S&P 500



Source: S&P Dow Jones Indices LLC. Data from June 1995 to December 2018. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

Exhibit 12: Index and Portfolio Blend Performance Versus the S&P 500



Source: S&P Dow Jones Indices LLC. Data from June 1995 to December 2018. Past performance is no guarantee of future results. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

The blend also provides diversification benefits, which afford it a lower historical maximum drawdown than the other three indices, as well as a lower tracking error and better information ratio than at least one of the strategy indices.

Looking a bit deeper at the relative risk characteristics, the blend has historically outperformed one or both of the factor indices on a risk-adjusted basis (see Exhibits 13 and 14). The blend also provides diversification benefits, which afford it a lower historical maximum drawdown than the other three strategies in Exhibit 13, as well as a lower tracking error and better information ratio than at least one of the strategy indices over the period covered in Exhibit 14. Overall, using the S&P 500 Enhanced Value Index in combination with other complimentary indices can potentially provide better risk/return characteristics and enhance the stability of the portfolio over time.

Overall, using the S&P 500 Enhanced Value Index in combination with other complimentary indices can potentially provide better risk/return characteristics and enhance the stability of the portfolio over time.

Exhibit 13: Risk/Return Comparison

PERIOD	S&P 500 (TR)	S&P 500 ENHANCED VALUE INDEX (TR)	S&P 500 MOMENTUM (TR)	MOMENTUM/ VALUE BLEND
ANNUALIZED RETURN (%)				
1-Year	-4.38	-9.20	-0.04	-4.60
3-Year	9.26	9.21	10.66	10.09
5-Year	8.49	6.71	9.74	8.34
7-Year	12.70	13.30	13.68	13.63
10-Year	13.12	14.21	13.25	13.95
15-Year	7.77	7.93	8.80	8.59
20-Year	5.62	7.84	5.87	7.21
Cumulative	8.76	10.51	10.40	10.80
ANNUALIZED RISK (%)				
3-Year	10.95	14.17	12.42	12.15
5-Year	10.94	13.36	11.92	11.67
7-Year	10.65	13.85	11.28	11.61
10-Year	13.60	19.11	13.48	15.22
15-Year	13.47	18.70	14.17	15.34
20-Year	14.47	19.07	16.49	15.87
Cumulative	14.70	18.49	16.89	15.87
RISK-ADJUSTED RETURN				
3-Year	0.85	0.65	0.86	0.83
5-Year	0.78	0.50	0.82	0.71
7-Year	1.19	0.96	1.21	1.17
10-Year	0.96	0.74	0.98	0.92
15-Year	0.58	0.42	0.62	0.56
20-Year	0.39	0.41	0.36	0.45
Cumulative	0.60	0.57	0.62	0.68
MAXIMUM 12-MONTH DRAWDOWNS (%)				
3-Year	-13.52	-14.65	-16.34	-14.26
5-Year	-13.52	-14.65	-16.34	-14.26
10-Year	-50.95	-67.86	-53.43	-55.95
15-Year	-50.95	-67.86	-53.43	-55.95
20-Year	-50.95	-67.86	-59.94	-55.95

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Exhibit 14: Additional Returns Analysis

PERIOD	S&P 500 ENHANCED VALUE INDEX (TR)	S&P 500 MOMENTUM (TR)	MOMENTUM/VALUE BLEND
TRACKING ERROR (%)			
3-Year	7.23	5.09	3.03
5-Year	6.24	4.97	2.75
10-Year	8.44	5.83	3.30
15-Year	8.13	6.56	3.81
20-Year	9.90	9.06	4.92
INFORMATION RATIO			
3-Year	-0.01	0.28	0.27
5-Year	-0.29	0.25	-0.06
10-Year	0.13	0.02	0.25
15-Year	0.02	0.16	0.21
20-Year	0.22	0.03	0.32

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CONCLUSION

Investing in value stocks may be an easy concept to understand, but the actual methods used to capture value stocks is critical.

Investing in value stocks may be an easy concept to understand, but the actual methods used to capture value stocks is critical. During the 23-year period ending December 2018, the S&P 500 Enhanced Value Index had a strong annual performance versus the S&P 500 over numerous periods. However, when observed on a risk-adjusted basis, the S&P 500 actually outperformed the S&P 500 Enhanced Value Index over most periods. Much of this outperformance on a risk-adjusted basis can be attributed to the financial crisis, when the annualized volatility spread widened significantly between the S&P 500 and the S&P 500 Enhanced Value Index, going from 3.2 points at three years to 5.5 points at 10 years.

Additionally, as can be seen from the 50/50 blend of the S&P Enhanced Value Index and S&P 500 Momentum, incorporating the S&P Enhanced Value Index as a part of a broader portfolio could potentially increase diversification benefits and improve the overall risk statistics.

PERFORMANCE DISCLOSURE

The S&P 500 Enhanced Value Index was launched on April 27, 2015. The S&P 500 Pure Value Index was launched on December 16, 2005. The S&P 500 Momentum was launched on November 14, 2014. All information presented prior to an index's Launch Date is hypothetical (back-tested), not actual performance. The back-test calculations are based on the same methodology that was in effect on the index Launch Date. Complete index methodology details are available at www.spdji.com.

S&P Dow Jones Indices defines various dates to assist our clients in providing transparency. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the Index is set at a fixed value for calculation purposes. The Launch Date designates the date upon which the values of an index are first considered live: index values provided for any date or time period prior to the index's Launch Date are considered back-tested. S&P Dow Jones Indices defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company's public website or its datafeed to external parties. For Dow Jones-branded indices introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed "Date of introduction") is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the Index's public release date.

Past performance of the Index is not an indication of future results. Prospective application of the methodology used to construct the Index may not result in performance commensurate with the back-test returns shown. The back-test period does not necessarily correspond to the entire available history of the Index. Please refer to the methodology paper for the Index, available at www.spdji.com for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

Another limitation of using back-tested information is that the back-tested calculation is generally prepared with the benefit of hindsight. Back-tested information reflects the application of the index methodology and selection of index constituents in hindsight. No hypothetical record can completely account for the impact of financial risk in actual trading. For example, there are numerous factors related to the equities, fixed income, or commodities markets in general which cannot be, and have not been accounted for in the preparation of the index information set forth, all of which can affect actual performance.

The Index returns shown do not represent the results of actual trading of investable assets/securities. S&P Dow Jones Indices LLC maintains the Index and calculates the Index levels and performance shown or discussed, but does not manage actual assets. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the Index or investment funds that are intended to track the performance of the Index. The imposition of these fees and charges would cause actual and back-tested performance of the securities/fund to be lower than the Index performance shown. As a simple example, if an index returned 10% on a US $100,000 investment for a 12-month period (or US $10,000) and an actual asset-based fee of 1.5% was imposed at the end of the period on the investment plus accrued interest (or US $1,650), the net return would be 8.35% (or US $8,350) for the year. Over a three year period, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.10%, a total fee of US $5,375, and a cumulative net return of 27.2% (or US $27,200).

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