

Evaluating Passive Value Strategies

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EXECUTIVE SUMMARY

- S&P Dow Jones Indices produces three families of value indices—the S&P Value Indices, the S&P Pure Value Indices, and the S&P Enhanced Value Indices. These families were developed with specific objectives in mind and have nuances of which market participants should be aware. In this paper, we use the [S&P 500[®] Value](#), the [S&P 500 Pure Value](#), and the [S&P 500 Enhanced Value Index](#) to illustrate the differences.
- The S&P 500 Value is a broad market, capitalization-weighted index with a large investment capacity for products tracking the index. This makes it a relevant benchmark for performance evaluation, as well as making it suitable for those seeking a traditional “buy-and-hold” index-linked investment implementation with a tilt toward value style. By design, this index has lower value exposure than the S&P 500 Pure Value and the S&P 500 Enhanced Value Index, as well as a lower tracking error against the S&P 500.
- The S&P 500 Pure Value is a high conviction value index. It aims for a higher exposure to the value style than the S&P 500 Value. Its style score weighting tilts aggressively toward value securities, but may limit the investment capacity of the products tracking this index relative to those tracking the S&P 500 Value and the S&P 500 Enhanced Value Index.
- The S&P 500 Enhanced Value Index balances the tradeoff between value exposure and the capacity of products tracking the index. Its modified cap weighting targets the value factor while maintaining weights tied to market capitalization.

INTRODUCTION

Value investing seeks to exploit mispricing associated with securities with prices that are trading at discount multiples rather than at their fundamental value.

Value investing is a well-known strategy that seeks to exploit perceived differences between a security's price and an assessment of its true underlying worth. As intuitive and straightforward as the strategy sounds, there are several nuances to consider when constructing a value portfolio. At S&P Dow Jones Indices, we offer several value indices for investors with different purposes. An investor should consider carefully which is the most appropriate value index to use.

The S&P 500 Value and the S&P 500 Pure Value are part of the [S&P U.S. Style Indices](#). The S&P 500 Enhanced Value Index is part of the [S&P Factor Indices](#). The style indices are derived from traditional style boxes and are broadly used to determine the investment style of a fund. Factors are the underlying primary drivers of risk and return within a portfolio. Decades of research have documented several factors that provide a premium, such as value, quality, and low volatility. Factor indices are designed to capture those premiums.

This paper aims to provide insight into index construction differences between the S&P 500 Value, the S&P 500 Pure Value, and the S&P 500 Enhanced Value Index.

The differences between the S&P 500 Value and the S&P 500 Pure Value have been well documented in research by S&P DJI.¹ This paper aims to serve as a complement to the existing research, while focusing on identifying the differences between the S&P 500 Pure Value and the S&P 500 Enhanced Value Index. We will look into the index construction differences among the S&P 500 Value, the S&P 500 Pure Value, and the S&P 500 Enhanced Value Index and then discuss how variations in index construction lead to differences in risk/return profiles, characteristics, and risk exposures.

Exhibit 1 highlights the index mechanics of our three value index families. Two important differences are the following.

1. Both the S&P 500 Value and the S&P 500 Pure Value utilize a two-dimensional sort. Each security is sorted based on both value metrics and growth metrics. Based on the relative rank between growth and value, each stock is assigned to a value, blend, or growth basket. On the other hand, the S&P 500 Enhanced Value Index uses a one-dimensional sort using only the value metric.
2. The weighting schemes are different across the three indices. The S&P 500 Value is market-capitalization weighted, the S&P 500 Pure Value is style-score weighted, and S&P 500 Enhanced Value Index is weighted by the product of style score and market capitalization.

¹ Aye Soe, Phillip Brzenk, Melody Duan. "[Distinguishing Style From Pure Style](#)." S&P Dow Jones Indices. January 2019.
Aye Soe. "[Understanding the Value Spectrum](#)." *Indexology*® Blog. July 2017.

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The S&P 500 Value is market-capitalization weighted, the S&P 500 Pure Value is style-score weighted, and S&P 500 Enhanced Value Index is weighted by the product of style score and market capitalization.

How did these value indices perform compared to the S&P 500?

Exhibit 1: S&P 500 Value Indices Construction Review

CATEGORY	S&P 500 VALUE	S&P 500 PURE VALUE	S&P 500 ENHANCED VALUE INDEX
Universe	S&P 500		
Value Factors	Book Value/Price, Earnings/Price, Sales/Price		
Growth Factors	Three-Year Change in Earnings per Share (Excluding Extra Items) over Price per Share Three-Year Sales per Share Growth Rate Momentum (12-Month % Price Change)		N/A
Relative to Growth Rank	Yes		No
Stock Coverage	About Half of the Market Cap by Value/Growth Rank	About 25% of the Market Cap by Value/Growth Rank	Top 100 Securities by Value Score
Rebalance Frequency	Annual		Semiannual
Weighting Scheme	Market-Cap Weighted	Style-Score Weighted	Weighted by Style Score * Market Cap
Security Cap	10%		MIN(5%, 20*Market Cap Weight)
Sector Cap	None		40%
Breadth	Broad Coverage	Narrow Coverage	Narrow Coverage
Number Of Constituents	Float: 395	Float: 108	Float: 100

Source: S&P Dow Jones Indices LLC. Number of constituents as of Dec. 31, 2019. Table is provided for illustrative purposes.

RISK/RETURN PROFILES AND TURNOVER ANALYSIS

How did these value indices perform in comparison to the S&P 500? Exhibit 2 shows the historical performance of the four indices from July 1995 to June 2020.

Over the 25-year horizon, the S&P 500 Value underperformed the S&P 500 by roughly 1% per year, while the S&P 500 Pure Value and the S&P 500 Enhanced Value Index outperformed the benchmark by about 1% per year. We then break the 25-year sample period into five subperiods, including the two major market drawdown events: the 2000 tech bubble and the 2008 global financial crisis. The value indices outperformed the S&P 500 during the 2000 tech bubble but underperformed during the 2008 global financial crisis. The S&P 500 Pure Value and the S&P 500 Enhanced Value Index both outperformed the S&P 500 after the recovery from the global financial crisis to June 2020.

Exhibit 2: Performance of the S&P 500 Value Indices				
CATEGORY	S&P 500	S&P 500 VALUE	S&P 500 PURE VALUE	S&P 500 ENHANCED VALUE INDEX
Annual Return (%)	10.05	8.96	11.13	11.17
Annual Volatility (%)	15.07	15.78	20.79	19.48
Sharpe Ratio	0.52	0.43	0.43	0.46
Premium versus S&P 500 (%)	-	-1.09	1.08	1.12
Annualized Tracking Error versus S&P 500 (%)	-	4.50	12.15	9.83
Information Ratio versus S&P 500	-	-0.24	0.09	0.11
ANNUAL RETURN IN HISTORICAL BULL/BEAR MARKETS (%)				
July 1995 to July 2000	21.99	17.72	12.14	17.48
August 2000 to September 2002 (2000 Tech Bubble)	-22.71	-15.37	3.13	2.94
October 2002 to September 2007	14.91	17.38	20.68	18.89
October 2007 to February 2009 (2008 Global Financial Crisis)	-46.25	-54.40	-72.74	-68.71
March 2009 to June 2020	15.84	13.89	18.48	16.48

Source: S&P Dow Jones Indices LLC. Data from July 31, 1995, to June 30, 2020. Past performance is no guarantee of future results. Table 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.

Since these are all value indices, correlations among them have been fairly high.

Since these are all value indices, correlations among their returns have been fairly high (see Exhibit 3). The S&P 500 Pure Value and the S&P 500 Enhanced Value Index had the highest relative return correlation. Compared with the S&P 500 Pure Value, the S&P 500 Enhanced Value Index had slightly higher relative return correlation to the S&P 500 Value.

Exhibit 3: Relative Return against S&P 500 Correlation among S&P 500 Value Indices			
INDEX	S&P 500 VALUE	S&P 500 PURE VALUE	S&P 500 ENHANCED VALUE INDEX
S&P 500 VALUE	1.00	-	-
S&P 500 PURE VALUE	0.70	1.00	-
S&P 500 ENHANCED VALUE INDEX	0.77	0.86	1.00

Source: S&P Dow Jones Indices LLC. Data from July 31, 1995, to June 30, 2020. Past performance is no guarantee of future results. Table 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.

Given the high correlation, market participants may want to know the degree of constituent overlap between the indices.

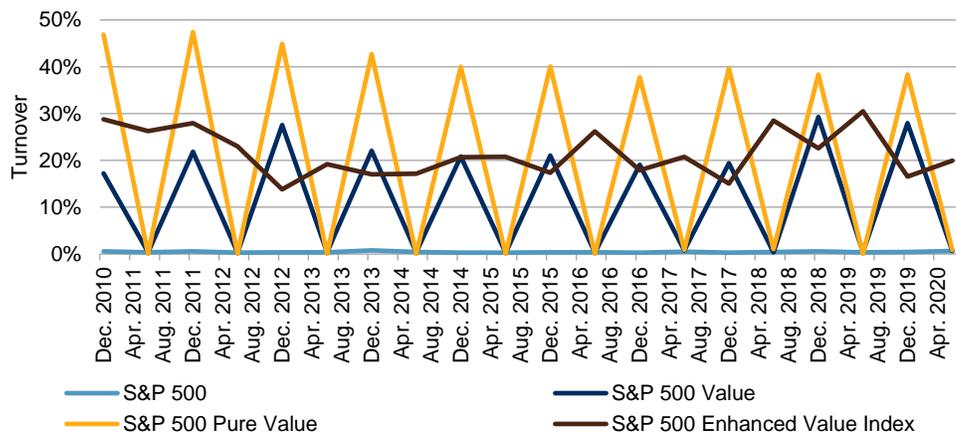
Given the high correlation, market participants may want to know the degree of constituent overlap between the indices. As of Dec. 31, 2019, the S&P 500 Value had 395 constituents, of which 108 were in the S&P 500 Pure Value and 92 were in the S&P 500 Enhanced Value Index. The overlap between the S&P 500 Pure Value and the S&P 500 Enhanced Value Index was 83 constituents.

The S&P 500 Value and the S&P 500 Pure Value rebalance annually, while the S&P 500 Enhanced Value Index rebalances on a semiannual basis. Exhibit 4 shows the one-way average annual turnover of the three value indices and the S&P 500 since December 2010. Unsurprisingly, the S&P 500 Value had the lowest turnover among the three value indices. The annual average turnovers of the S&P 500 Pure Value and the S&P 500 Enhanced Value Index were similar. However, the turnover for the S&P 500 Enhanced Index was spread over the two semiannual rebalance dates; thus, its turnover was smoother compared with the annually rebalanced value indices.

The S&P 500 Value and the S&P 500 Pure Value rebalance annually, while the S&P 500 Enhanced Value Index rebalances on a semiannual basis.

Unsurprisingly, the S&P 500 Value had the lowest turnover among the three value indices.

Exhibit 4: One-Way Turnover of the S&P 500 Value Indices



INDEX	S&P 500	S&P 500 VALUE	S&P 500 PURE VALUE	S&P 500 ENHANCED VALUE INDEX
Average Annual Turnover (%)	0.86	23.86	39.39	43.06

Source: S&P Dow Jones Indices LLC. Data from Dec. 31, 2010, to June 30, 2020. Past performance is no guarantee of future results. Chart and table are provided for illustrative purposes and reflect 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.

REGRESSION-BASED ANALYSIS

Do differences in index construction lead to differences in the degree of value exposure? To determine that, we conducted a Fama French six-factor regression analysis. The six factors are market beta, SMB (size), HML (value), RMW (profitability), CMA (investment), and MOM (momentum), which are publicly available on Ken French’s website.² Exhibit 6 shows the result. The asterisks represent the significance level.³ Our key findings include the following.

² https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html

³ * = p < 0.1; ** = p < 0.05; *** = p < 0.01

Do differences in index construction lead to differences in the degree of value exposure?

1. The S&P 500 Value is a broad market index and tilted toward large-cap stocks (as shown by the negative factor loading to size). The S&P 500 Pure Value Index had a meaningful size tilt toward smaller companies within the S&P 500 universe. Meanwhile, the S&P 500 Enhanced Value Index's size tilt was relatively neutral and statistically insignificant. The exposures were consistent with the methodology.
2. Both the S&P 500 Pure Value and the S&P 500 Enhanced Value Index had similar value tilts, which were much stronger than that of the S&P 500 Value.
3. Interestingly, the S&P 500 Pure Value had a stronger profitability and investment tilt than the S&P 500 Enhanced Value Index. Profitability and investment are often considered as proxies for the quality factor. As such, the S&P 500 Pure Value had a higher secondary exposure to quality.
4. Lastly, all three value indices had some negative exposure to momentum. The S&P 500 Pure Value and the S&P 500 Enhanced Value Index had similar momentum exposure. This finding is not surprising, given the negative correlation between the value and the momentum factors.

The exposures were consistent with the methodology design of each index.

All three value indices had some negative exposure to momentum.

Exhibit 5: Six-Factor Regression of the S&P 500 Value Indices³

FACTOR	S&P 500	S&P 500 VALUE	S&P 500 PURE VALUE	S&P 500 ENHANCED VALUE INDEX
Alpha	-0.02	-0.07	-0.03	0.13
Beta	1.00***	0.99***	1.08***	1.03***
Size	-0.15***	-0.12***	0.25***	0.04
Value	0.02**	0.26***	0.63***	0.64***
Profitability	0.07***	0.03	0.26***	0.10**
Investment	0.03***	0.13***	0.15**	-0.07
Momentum	-0.02***	-0.09***	-0.24***	-0.22***
R ²	1.00	0.97	0.91	0.94

Source: S&P Dow Jones Indices LLC, [Fama/French Data Library](#). Data from July 31, 1995, to June 30, 2020. Past performance is no guarantee of future results. Table 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.

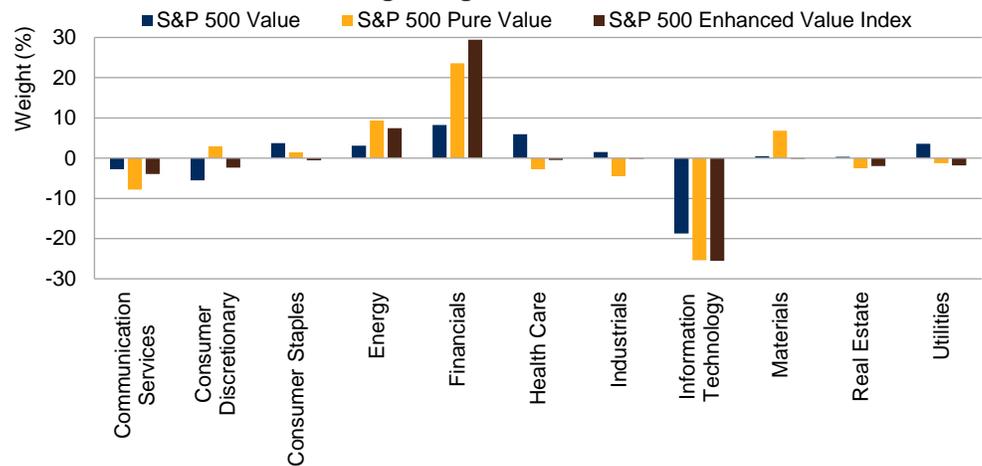
SECTOR COMPOSITION

Exhibit 6 shows the relative sector weights against the S&P 500 of the three S&P 500 Value Indices as of June 2020. We can see that the S&P 500 Enhanced Value Index was overweight in Financials compared with the S&P 500 Pure Value. The biggest underweight sector among the value indices was Information Technology. Moving from the S&P 500 Value to the S&P 500 Pure Value and then to the S&P 500 Enhanced Value index, the Financials weight increases monotonically. This trend has been stable and consistent since 2010 (see Exhibit 7). The Appendix also includes the time series of the sector weights among the S&P 500 Value Indices.

The holdings-based analysis reveals more details around the characteristics of each strategy.

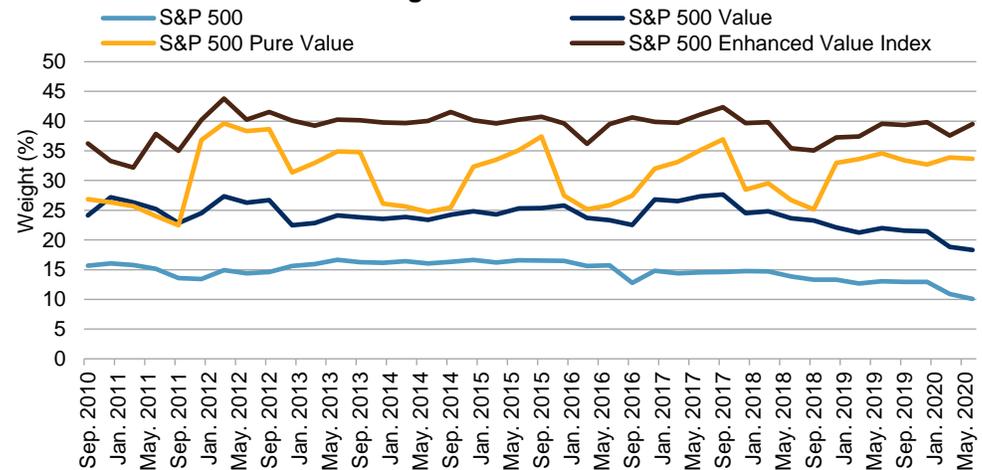
The Financials weight increases monotonically as we move across value, pure value, and enhanced value.

Exhibit 6: Relative Sector Weights against the S&P 500



Source: S&P Dow Jones Indices LLC. Data as of June 30, 2020. 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 7: Financials Sector Weight Since 2010

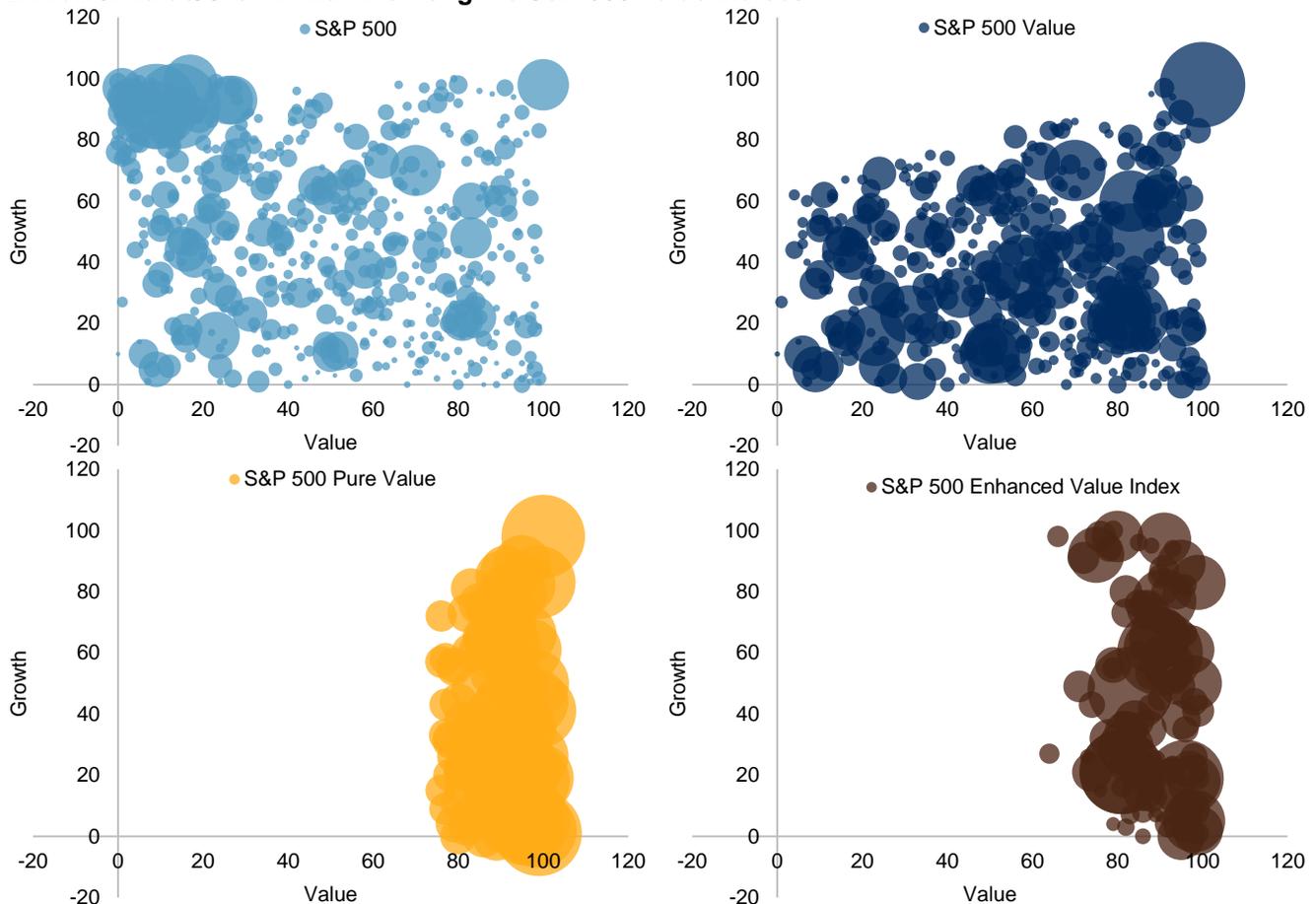


Source: S&P Dow Jones Indices LLC. Data from Sept. 30, 2010, to June 30, 2020. Chart is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

VALUE/GROWTH SPECTRUM

To identify the differences between the S&P 500 Pure Value and the S&P 500 Enhanced Value Index, we must look deeper into constituent-level data. Exhibit 8 shows four plots, and each represent a security distribution map from the value/growth matrix. The top-left chart shows the value spectrum on the x-axis and the growth spectrum on the y-axis. The value/growth spectrum is the company's percentile rank by value/growth score. The growth score for each company is computed as the average of the standardized values of the three growth factors. The value score for each company is computed as the average of the standardized values of the three value factors.⁴ The higher the number is, the stronger the style is. Each dot in the plot represents a constituent in the index, and the size of the dot shows the weight of the constituent. Moving from the top left (S&P 500) to the top right (S&P 500 Value), we can see that the index moved toward higher value while maintaining a broad diversification in the growth spectrum. Looking at the two plots in the bottom, we can see both the S&P 500 Pure Value and the S&P 500 Enhanced Value Index offered a concentrated value exposure, with most of the constituents in the 80 to 100 value spectrum.

Exhibit 8: Value/Growth Matrix among the S&P 500 Value Indices



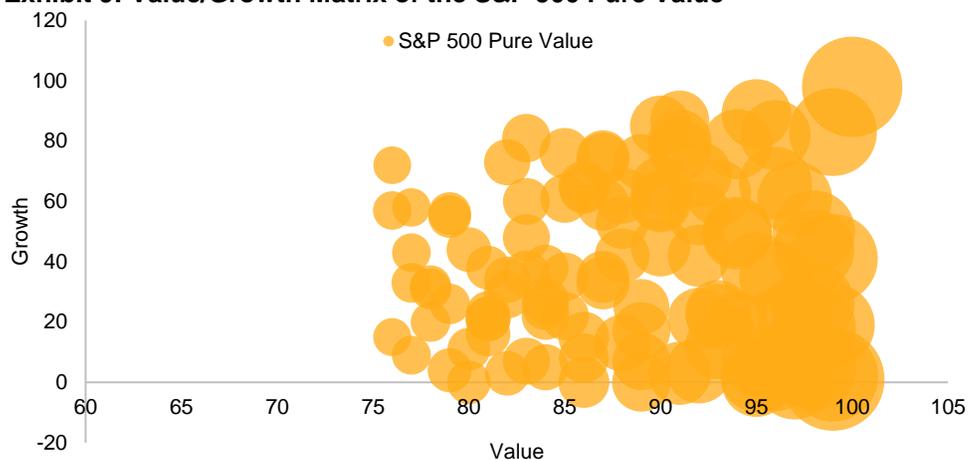
Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. Charts are provided for illustrative purposes and reflect hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

⁴ For more information, please refer to the S&P U.S. Style Indices Methodology: <https://www.spglobal.com/spdji/en/documents/methodologies/methodology-sp-us-style.pdf>.

Looking closely at the x-axis for the S&P 500 Pure Value and the S&P 500 Enhanced Value Index (see Exhibits 9 and 10). The size of the dots, which is the constituent's weight, looks more similar in Exhibit 9 than in Exhibit 10, which means that the dispersion of the constituents' weights in the S&P 500 Enhanced Value Index was higher than in the S&P 500 Pure Value. In addition, most of the high weight constituents in the S&P 500 Pure Value were stacked between the value spectrum of 90 to 100, while some of the high weight constituents in the S&P 500 Enhanced Value Index were in the below-90 value spectrum, meaning that the S&P 500 Pure Value had a more aggressive tilt in the deep value space compared with the S&P 500 Enhanced Value Index.

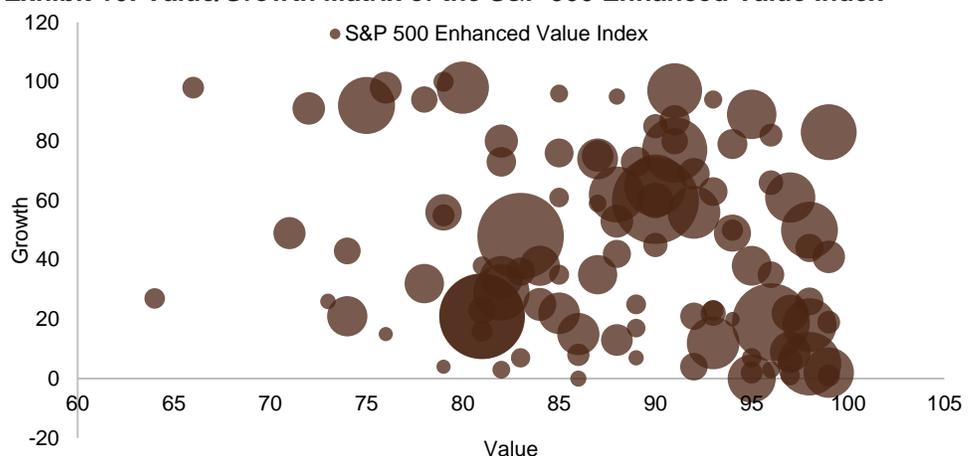
Looking closely at the x-axis, it becomes clear that the constituent weights of the S&P 500 Pure Value were more balanced.

Exhibit 9: Value/Growth Matrix of the S&P 500 Pure Value



Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. 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 10: Value/Growth Matrix of the S&P 500 Enhanced Value Index



Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. 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 S&P 500 Pure Value had a more aggressive tilt in the deep value space compared with the S&P 500 Enhanced Value Index.

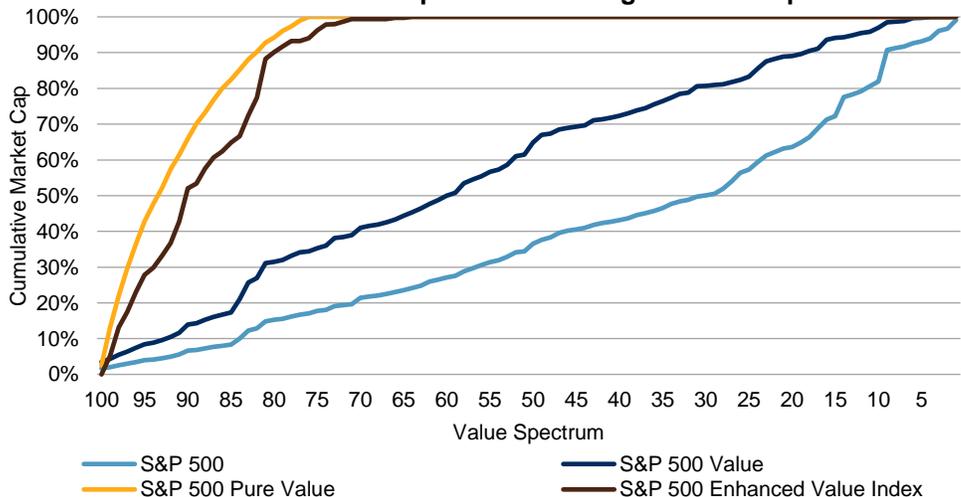
The S&P 500 Pure Value's cumulative market capitalization rose more aggressively and was more concentrated in the value space.

The S&P Enhanced Value Indices seek to balance the tradeoff between deep value exposure and the investment capacity of products tracking the index.

The S&P 500 Pure Value had a much lower weighted average market capitalization than the S&P 500 Enhanced Value Index.

Exhibit 11 also supports this conclusion. It shows the cumulative market capitalization plot order along the value spectrum (x-axis), where 100 means the most value. The S&P 500 Pure Value's cumulative market capitalization rose more aggressively (i.e., it had a steeper slope) and was more concentrated in the value space compared with the S&P 500 Enhanced Value Index. This is consistent with the weighting scheme in the index construction. The S&P 500 Pure Value is weighted by style score, and the S&P 500 Enhanced Value Index is weighted by the product of style score and market capitalization. The S&P Enhanced Value Indices seek to balance the tradeoff between value exposure and the investment capacity of products tracking the index. It is less of a concern in the S&P 500 universe, but for indices that allocate to the mid- to small-cap value universe, such as the [S&P MidCap 400 Enhanced Value Index](#) and the [S&P SmallCap 600 Enhanced Value Index](#), the fact that the security weight is tied to its market capitalization means larger investment capacity for products tracking the S&P Enhanced Value Indices than those tracking the S&P Pure Value Indices.

Exhibit 11: Cumulative Market Capitalization along the Value Spectrum



Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2019. 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.

CHARACTERISTICS AND FACTOR EXPOSURE

As shown in the regression analysis in the prior section, the S&P 500 Pure Value had a higher exposure to smaller companies within the S&P 500 universe than the S&P 500 Enhanced Value Index. Exhibit 12 shows that the S&P 500 Pure Value had a much lower weighted average market capitalization than the S&P 500 Enhanced Value Index. The S&P 500 Pure Value and the S&P 500 Enhanced Value Index both had lower valuation ratios (price to book [P/B], price to earnings [P/E], price to sales [P/S], and price to cash flows [P/CF]) than the S&P 500 and the S&P 500 Value. The weighted average dividend yield was similar among the three value indices.

Exhibit 12: Average Historical Characteristics among the S&P 500 Value Indices

CHARACTERISTIC	S&P 500	S&P 500 VALUE	S&P 500 PURE VALUE	S&P 500 ENHANCED VALUE INDEX
Weighted Average Market Cap	141,934	104,647	27,389	79,272
Weighted Average P/B	2.47	1.77	1.14	1.26
Weighted Average P/E	17.62	14.94	11.54	11.73
Weighted Average P/S	1.66	1.21	0.54	0.65
Weighted Average P/CF	9.32	7.35	5.22	6.21
Weighted Average Dividend Yield	1.94	2.33	2.16	2.18

Source: S&P Dow Jones Indices LLC, FactSet. Data from Dec. 31, 2010, to Dec. 31, 2019. Past performance is no guarantee of future results. Table 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 weighted average dividend yield was similar among the three value indices.

We can further verify our findings from historical characteristics with factor exposure under the Axioma risk model.

We can further verify our findings from historical characteristics with factor exposure under the Axioma risk model. As shown in Exhibit 13, the S&P 500 Pure Value had a stronger value exposure than the S&P 500 Enhanced Value Index. The S&P 500 Pure Value also had a more negative size exposure, which is consistent with our previous finding that it had a stronger tilt toward smaller companies within the S&P 500 universe.

Exhibit 13: Average Factor Exposure under the Axioma Risk Model among S&P Value Indices

S&P 500 VALUE		S&P 500 PURE VALUE		S&P 500 ENHANCED VALUE INDEX	
FACTOR	AVERAGE EXPOSURE	FACTOR	AVERAGE EXPOSURE	FACTOR	AVERAGE EXPOSURE
Dividend Yield	0.29	Value	0.90	Value	0.75
Value	0.25	Liquidity	0.40	Earnings Yield	0.41
Exchange Rate Sensitivity	0.11	Mid Cap	0.30	Exchange Rate Sensitivity	0.18
Earnings Yield	0.13	Earnings Yield	0.23	Market Sensitivity	0.13
Leverage	0.01	Market Sensitivity	0.20	Liquidity	0.11
Size	0.01	Volatility	0.19	Dividend Yield	0.09
Mid Cap	0.01	Exchange Rate Sensitivity	0.12	Mid Cap	0.05
Volatility	-0.06	Dividend Yield	0.16	Volatility	0.04
Profitability	-0.10	Leverage	-0.12	Leverage	-0.07
Market Sensitivity	-0.11	Profitability	-0.17	Profitability	-0.13
Medium-Term Momentum	-0.14	Growth	-0.30	Size	-0.11
Liquidity	-0.16	Medium-Term Momentum	-0.33	Medium-Term Momentum	-0.15
Growth	-0.25	Size	-0.37	Growth	-0.19

Source: S&P Dow Jones Indices LLC, FactSet. Data from Dec. 31, 2010, to Dec. 31, 2019. Past performance is no guarantee of future results. Table 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 constituent weights of the S&P 500 Pure Value were more balanced.

The dispersion of weights was higher in the S&P 500 Enhanced Value Index.

To summarize, the S&P 500 Pure Value and the S&P 500 Enhanced Value Index are different in three main ways.

1. The dispersion of weights was higher in the S&P 500 Enhanced Value Index than in the S&P 500 Pure Value.
2. The S&P 500 Pure Value tilted more aggressively to value securities than the S&P 500 Enhanced Value Index.
3. The S&P 500 Pure Value had a higher tilt toward smaller companies within the S&P 500 universe than the S&P 500 Enhanced Value Index. This also means that the S&P 500 Enhanced Value Index has a larger investment capacity for products tracking the index than the S&P 500 Pure Value.

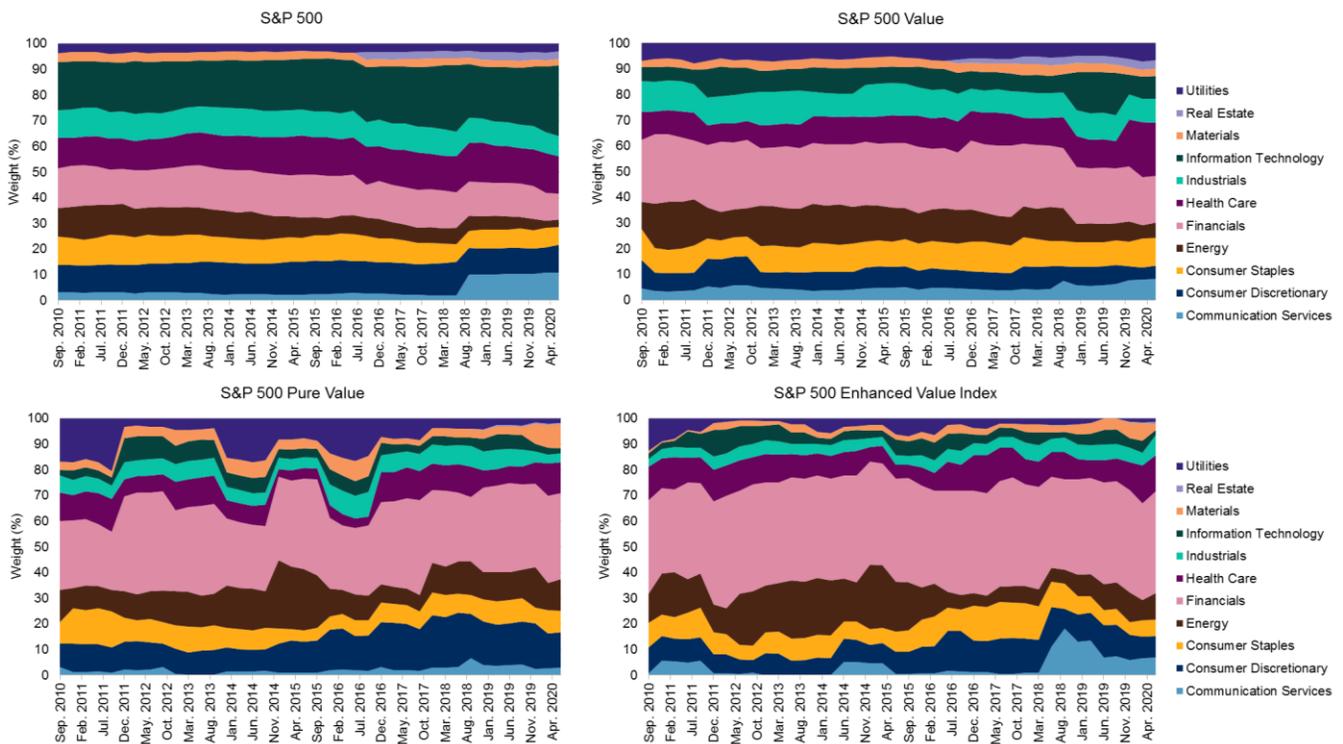
Market participants should carefully consider what is the true “value” of what they are allocating to.

CONCLUSION

Not all value strategies are created equal, and the devil is in the details. Market participants should carefully consider what is the true “value” of what they are allocating to. The three value index series offered by S&P Dow Jones Indices provide a comprehensive toolkit that addresses varying investment goals. The S&P 500 Value is a market-capitalization-weighted index designed to be used as a broad benchmark and as a passive buy and hold strategy. Both the S&P 500 Pure Value and the S&P 500 Enhanced Value Index are designed for a high conviction, active value strategy. For an investor with a large pool of assets that would like to pursue the value premium, the S&P 500 Enhanced Value Index might be a better choice than the S&P 500 Pure Value, while an investor who follows traditional style boxes and would like to pursue a high conviction value strategy may prefer the S&P 500 Pure Value.

APPENDIX

Exhibit 14: Sector Breakdown of the S&P 500 Value Indices



Source: S&P Dow Jones Indices LLC. Data from Sept. 30, 2010, to June 30, 2020. Charts are provided for illustrative purposes and reflect 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.

PERFORMANCE DISCLOSURE

The S&P 500 Pure Value was launched December 16, 2005. The S&P 500 Enhanced Value Index was launched April 27, 2015. 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. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. Complete index methodology details are available at www.spdji.com. 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.

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.

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.

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