

Thornburg Value Fund; A (TVAFX)

S&P Category S&P Style Domestic Equity Multi Cap Core NAV 12/9/2016 Style Index \$56.16 Russell 3000 Total Return Index OVERALL S&P RANKING









\$10,000

\$18,806

\$19,443

1/2006

Browne/MacDonald

S&P Mutual Fund Ranking Details

Performance Analytics Positive S&P STARS Neutral S&P Fair Value Negative 3-yr vs. peers 1-yr vs. peers Risk Considerations

S&P Quality Rank

S&P Credit Rating

Manager Tenure

Standard Deviation

Sharpe Ratio

Ranking Commentary

Based on an evaluation of the fund's holdings, Standard & Poor's classifies Thornburg Value; A as a Domestic Equity - Multi-Cap Core Funds. Our current ranking is 4 star.

We believe that it is important to assess a fund's underlying holdings in addition to its performance, risk and cost considerations, and S&P's proprietary ranking methodology incorporates all of these analyses in establishing the ranking. Based on S&P's Performance Analytics, we have a Positive outlook for TVAFX generally employing inputs from S&P STARS, Fair Value, 1-year and 3-year performance rankings versus its peers. In assessing risk, we believe Quality Rank, Credit Rating, and manager tenure, along with Sharpe Ratio and Standard Deviation, are important measures, and we view TVAFX's Risk Considerations as Positive compared to its peer group. Finally, our assessment for cost factors, such as expense ratio, sales load, and turnover, lead to a Negative Cost Considerations ranking. Coupling these factors together, we rank the fund as

Cost Factors

Positive



S&P Mutual Fund Rankings are derived from the market-cap weighted average ranking of all available holdings within the mutual fund (such as STARS and Quality Rank) or of the fund itself (such as Sharpe Ratio and Turnover). Note that TVAFX last disclosed its holdings on 9/30/16. For more information, please see the Disclosures section.

Key Mutual Fund Statistics (9/30/16)

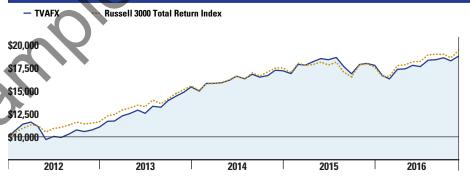
Region	U.S. Domestic
Total Net Assets (Mil)	\$350.30
Initial Minimum Investment	\$5,000
IRA Initial Minimum Investment	\$2,000
Subsequent Investment	\$100
Number of Holdings	51

Fund 24.94 Average P/E 24.91 Initial Investment at 12/31/2011 4.93 Value of Fund at 11/30/2016 Average P/B 4.77 Avg. Mkt Cap (Mil) \$75,683,95 Value of Style Index at 11/30/2016 Dividend Yield 3.11% 2.34% Manager 30-Day SEC Yield Manager Start Date 0.32 Portfolio Turnover 31.00% 61.35%

Top 5 Sectors Total % Assets (9/30/16)

GICS Sector	%
Information Technology	19.06
Health Care	16.81
Financials	16.42
Consumer Discretionary	12.64
Consumer Staples	9.25
Total	74.18%





Average Annual Total Return (%)

1 Yr 5 Yr 10 Yr

As of 9/30/2016 5.37 13.46 5.06

Performance data quoted represents past performance, which does not guarantee future results. Investment return and principal value of investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than original cost. Current performance may be lower or higher than the performance data quoted; current to the most recent month-end performance information can be obtained at www.thornburg.com or 800-847-0200. Total Return does not take into account loads or any other sales charges.

Fees & Expenses (%) Maximum Front End Sales Load

Maximum Front End Sales Load		4.50
Redemption Fee		0.00
Management Fee		0.98
Maximum 12b-1 Fee		0.25
Expense Ratio	Fund	Peer Average
Gross	1.37	1.15
Net	1.37	1.14
Gross (Current)	1.37	1.40
Net (Current)	1.37	1.17

Trailing Annualized Total Return & Tax Analysis (%) (10/31/16)						
	YTD	1 Yr	3 Yr	5 Yr	10 Yr	Since Incep.
Fund	2.79	2.26	8.21	11.60	4.93	9.41
Peer Average	3.67	1.49	5.80	11.48	5.63	7.11
Russell 3000 TR IX	10.58	8.31	8.68	14.41	7.00	
S&P 500 Daily Reinv IX	9.79	8.06	9.07	14.45	6.89	
Load Adjusted as of 10/31/2016		-2.34	6.56	10.58	4.45	9.17
Return After Taxes on Distributions	-1.97	-2.48	6.42	10.49	4.03	8.56
Return After Taxes on Distr. & Sale	-1.04	-1.33	5.01	8.37	3.43	7.66
Tax-Cost Ratio on Distributions	99.86	99.86	99.87	99.92	99.61	99.45
Tax-Cost Ratio on Distr. & Sale	100.81	101.04	98.54	98.00	99.02	98.61
						Page 1 of 6

TVAFX

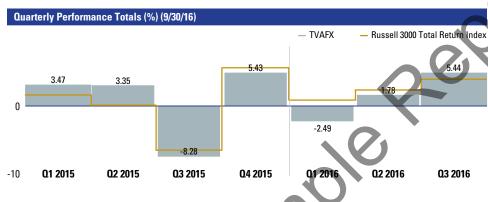
30.04

-22.07

Thornburg Value Fund; A (TVAFX)

S&P Category S&P Style	Domestic Multi Ca		NAV 12/9/2016 Style Index		ssell 3000 To		66.16 OVEF dex S&P	RALL RANKING	*	* *	* *
Calendar Year History (12/9/16)											
	YTD	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
NAV	56.16	51.84	50.13	45.16	32.42	29.30	33.85	31.07	21.73	37.53	39.29
Total Return %	8.67	3.41	11.50	39.49	10.65	-13.44	9.15	45.26	-41.56	6.14	21.97
Category Average Return %	13.69	-2.26	8.47	34.64	15.27	-2.18	19.32	33.72	-38.61	7.50	13.39
Fund Rank in Category	5,384	1,121	1,933	1,154	5,025	5,236	4,864	698	3,169	2,117	226
Total Funds in Category	7,457	6,980	6,593	6,152	5,758	5,419	5,092	4,800	4,466	4,171	3,838
Peer Average Return %	11.60	-1.80	10.36	34.03	15.58	-2.38	16.12	32.86	-38.82	6.66	13.74
Fund Rank in Peer Group	531	30	267	75	503	485	457	44	312	177	12
Total Funds in Peer Group	703	659	624	587	556	513	475	430	398	359	316
Dividend Yield %	3.11	2.76	2.52	2.51	2.23	2.00	2.30	2.74	1.88	0.06	0.83
Capital Gains										3.93	1.30
Total Net Assets (\$Mil)	350.30	395.00	405.80	436.20	401.30	687.70	1,174.00	1,259.30	922.10	1,569.80	1,307.10
Expense Ratio %	1.37	1.37	1.40	1.32	1.28	1.31	1.34	1.37	1.27	1.27	1.34
Style Name*	XCC	XCC	XCC	XCC	XCC	XCC	XCC	LCC	XCC	XCC	XCC

* LCC: Large Cap Core; XCC: Multi Cap Core



Best/Worst H	listorica	l Performanc	e During Pas	t 10 Years (%) (11/30/16)			
200					• TV	AFX • Ru	ssell 3000 Tota	l Return Index
150				0				
100				7				
50								
0 —								
-50								
	Qı	uarter	1 \	ear ear	3 Y	'ear	5 Y	'ear
	Best	Worst	Best	Worst	Best	Worst	Best	Worst
DATE	Q2 09	Q4 08	02/10	02/09	02/12	06/10	02/14	05/12
Style Index	16.82	-22.78	55.96	-43.51	102.39	-25.81	191.57	-3.71

-44.95

71.30

85.87

-25.46

158.55

-24.74

Performance data quoted represents past performance, which does not guarantee future results. Investment return and principal value of investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than original cost. Current performance may be lower or higher than the performance data quoted; current to the most recent month-end performance information can be obtained at www.thornburg.com or 800-847-0200. Total Return, Category Rank and Peer Rank do not take into account loads or any other sales charges.

Total Return Rank (12/9/16)					
	Rank in Category	Rank in Peer Group			
1 Yr	3rd quartile	3rd quartile			
3 Yr	Top quartile	Top quartile			
5 Yr	2nd quartile	2nd quartile			
10 Yr	Bottom quartile	Bottom quartile			

Modern Portfolio Theory Statistics (11/30/16)				
vs. the S&P 500	Fund	Peer Average		
Beta	0.94	1.01		
Alpha	-0.03	-0.22		
R^2	0.90	0.88		
Standard Deviation	10.46	11.44		
Sharpe Ratio	0.78	0.59		

Performance Commentary

For the three-year period ending 12/09/2016, TVAFX had an average annualized total return of 9.1% versus 7.4% for the Multi-Cap Core Funds; the fund ranked 136th within the entire universe of 619 funds in Multi-Cap Core Funds. On a one-year total return basis, this fund ranked 426th within the entire universe of 701 funds in Multi-Cap Core Funds group. The fund outperformed the Russell 3000 Total Return Index in 2 of the last 5 years.

Capital IQ

Thornburg Value Fund; A (TVAFX)

S&P Category S&P Style

Domestic Equity Multi Cap Core

NAV 12/9/2016 Style Index

\$56.16 Russell 3000 Total Return Index

OVERALL S&P RANKING









Portfolio Composition (9/30/16) Current Previous **GICS Sectors Current %** 10 20 **Consumer Discretionary** 12.64 Consumer Staples 9.25 3.77 Energy **Financials** 16.42 **Health Care** 16.81 Industrials 4.23 Information Technology 19.06 Materials 3.42 Real Estate 0.48 **Telecom Services** 2.46 Utilities 3.28 Unknown 8.19

Sector Overview

TVAFX's top 10 holdings accounted for 40.3% of assets and the fund's largest sector weightings were in Information Technology, Health Care, and Financials. As of November 30, 2016 the fund had total assets under management of \$350.3 million.

Regional Holdings (9/30/16) Asia Dev Mkts Asia Emrg Mkts Eur Dev Mkts Not Available US Domestic **US** Domestic 76.58% Europe Developed Markets 9.35% Asia Emerging Markets 1.90% Asia Developed Markets 1.36% Middle East & Africa Emerging Markets 0.87% Not Available 9.94%

Change From Quality **S&P STARS** Name **Current % Previous %** Rank Value THORNBURG CAPITAL MANAGEM.. 8.18 NR NR NR Thermo Fisher Scientific Inc ORD 4.64 0.20 5 **** 2 Wal Mart Stores Inc ORD 4.00 0.04 JPMorgan Chase & Co ORD 4.00 -0.05 B+ 4 5 Facebook Inc ORD 3.49 NR 0.07 International Flavors & Fragrances .. 3.42

Top 10 Holdings (Holdings last reported on 9/30/16; S&P rankings as of 12/10/16)

3.27

3 22

3.13

2.93

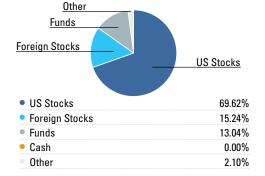
40.28





YTD

Return %



Fund Contact Information

ITC Holdings Corp ORD

Activision Blizzard Inc ORD

Top 10 Total % of Assets

Medtronic PLC ORD

Alphabet Inc ORD

Thornburg Investment Fund Mgmt Co.:

Management Inc

Telephone: 800-847-0200

10/02/1995

Website: www.thornburg.com Address:

Inception:

2300 North Ridgetop Road

Manager: Browne/MacDonald (Since 1/2006)

Santa Fe, NM 87506

Mutual Fund Report Disclosure

Required Disclosures

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Throughout this report, total return performance shown is historical, and assumes reinvestment of all dividends and capital gain distributions. Total Return, Peer Rank and Category Rank do not take into account loads or any other sales charges. An investment in a fund is not a bank deposit. It is not insured or guaranteed by the Federal Deposit Insurance Corporation (FDIC) or any other government agency. Past performance is no guarantee of future results, and investment return and principal value will fluctuate so that, when redeemed, an investor's shares may be worth more or less than their original cost. Current performance may be lower or higher than the performance data quoted; performance current to the most recent month-end or calendar quarter-end is included in the report and can also be obtained from the fund company's website.

The data and information shown in this report is intended for use by financial professionals and/or sophisticated investors who should verify that all data, assumptions, and results are accurate before making any investment decision or recommendation. Before acting on any information in this document, an investor should consider whether the fund is suitable for their particular circumstances and, if necessary, seek professional advice.

S&P Capital IQ's Mutual Fund Rankings provide S &P Capital IQ's quantitative and holistic assessment of the performance, risk profile, and relative costs of a given fund compared to other mutual funds in its category. Rankings range from ***** (highest) to * (lowest) and follow a normalized distribution curve.

Fund Rank in	Category	S&P Capital IQ Ranking
Top	10%	****
Next	20%	****
Middle	40%	***
Next	20%	**
Bottom	10%	*

Risks disclaimers

Investors should read the fund's prospectus and consider the fund's investment goals, risks, charges and expenses before investing. The Fund may be subject, but not limited, to the following investment risks:

Equity Investing Risk

While stocks have historically outperformed other asset classes over the long term, they tend to fluctuate more dramatically over the short term. There are special risks associated with significant exposure to a particular sector, including the possibility of increased economic, business or other developments affecting the sector, which may result in increased volatility to the fund's share price.

Small and midsize company risk. Small and midsize companies carry additional risks because the operating histories of these companies tend to be more limited, their earnings and revenues less predictable, and their share prices more volatile than those of larger, more established companies. The shares of smaller companies tend to trade less frequently than those of larger, more established

companies, which can adversely affect the pricing of these securities and the Fund's ability to sell these securities.

Large cap stock risk. Stocks of large cap companies may underperform the stocks of lower quality, or smaller capitalization companies during periods when the stocks of such companies are in favor.

Growth securities risk. Growth companies generally seek to achieve high earning growth regardless of market conditions. Growth stocks usually have high price-to-earnings and price-to-book ratios, which means that these stocks are relatively high-priced in comparison with the companies' Net Asset Values (NAVs). Stocks of growth companies or "growth securities" have market values that may be more volatile than those of other types of investments. Growth securities typically do not pay a dividend, which can help cushion stock prices in market downturns and reduce potential losses.

Value securities risk. Value stocks are those that generally have fallen out of favor in the marketplace and are considered bargain-priced compared with book value, replacement value, or liquidation value. Typically, value stocks are priced much lower than stocks of similar companies in the same industry. The prices of value stocks may lag the stock market for long periods of time if the market fails to recognize the company's intrinsic worth.

International Equity Risk.

Foreign investment risk. Fund's investments in foreign securities may be subject to political, social and economic factors affecting investments in foreign issuers. Special risks associated with investments in foreign issuers include exposure to currency fluctuations, less liquidity, less developed or less efficient trading markets, lack of comprehensive company information, political and economic instability and differing auditing and legal standards.

Foreign currency risk. Investments in foreign currencies are subject to the risk that those currencies will decline in value relative to the U.S. dollar or, in the case of hedged positions, that the U.S. dollar will decline relative to the currency being hedged. Currency exchange rates may fluctuate significantly over short periods of time. Foreign currencies are also subject to risks caused by inflation, interest rates, budget deficits and low savings rates, political factors and government intervention and controls.

Emerging market risk. The securities of issuers located in emerging markets tend to be more volatile and less liquid than securities of issuers located in more developed economies, and emerging markets generally have less diverse and less developed economic structures and less stable political systems than those of developed countries. The securities of issuers located or doing substantial business in emerging markets are often subject to rapid and large changes in price.

S&P Capital IQ Mutual Fund Ranking Methodology and Inputs

The overall Mutual Fund ranking is based on a weighted average computation of three components — performance analytics, risk considerations and cost factors that evaluate, relative to its peers, a fund's underlying holdings, its historical performance, and characteristics of the fund. For blended funds investing in individual securities S &P Capital IQ incorporates the following inputs:

Performance Analytics. The component score is a weighted average of up to four inputs:

Holdings-Based Inputs: S&P Capital IQ STARS, and 12 Month Yield (weighted average value of holdings)

Fund Inputs: trailing 1-year and 3-year performance vs. peers

Risk Considerations. This component score is a weighted average of up to four inputs:

Holdings-Based Inputs: Weighted Average Credit Rating

Fund Inputs: Manager Tenure, Standard Deviation, and Debt Exposure.

Cost Factors. This component score is a weighted average of up to three inputs: Expense Ratio (Net), Sales Load and Portfolio Turnover of the fund.

The S&R Capital IQ component rankings are represented as Positive, Neutral or Negative indications, following the same methodology of a normalized distribution curve:

- Positive component rankings are assigned to funds whose weighted-average score is in the top quartile of its asset category's universe, applying a normalized distribution curve.
- Neutral component rankings are assigned to funds whose weighted-average score is in the second or third quartiles of its asset category's universe, applying a normalized distribution
- Negative component rankings are assigned to funds whose weighted-average score is the bottom quartile of its asset category's universe, applying a normalized distribution curve.

In cases where sufficient analytical measures are not available on underlying assets, the component ranking will not be displayed.

For more details, including definitions, of the individual inputs to the S&P Capital IQ Mutual Fund Ranking, see the Glossary section of this report. **S&P Capital IQ does not receive fees from funds for their inclusion in this report.**

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Mutual Fund Report Disclosure

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Mutual Fund Report Glossary

Russell 3000 Total Return Index: This index measures the performance of the largest 3000 U.S. companies representing approximately 98% of the investable U.S. equity market.

S&P 500 Daily Reinvested Index: This index is based on the S&P 500 index of large-cap stocks. When any component in the S&P 500 pays a dividend, this index calculates it as reinvested into the index as a whole.

Overall Report Definitions

Peer: A fund's peer group consists of all the funds within the same Lipper classification, which uses a combination of holdings-based and prospectus language-based models. Lipper will initiate a fund classification change twice per year based on the funds fiscal and semiannual portfolio holdings. Alternatively, the fund can also place an ad-hoc request for a classification re-evaluation

S&P Category: The general category of the fund as determined by S&P. There are a total of nine different broad categories that a fund can fit into: Domestic Equity, Global Equity, International Equity, Taxable Fixed Income, Tax-Exempt Fixed Income, Blended - Individual Securities, Blended - Fund of Funds, Money Market, and Specialty/Other. Note that at this time, S&P does not maintain Mutual Fund Rankings for Money Market or Specialty/Other funds.

S&P Style: The general investment style of the fund as determined by S&P. Each fund is classified into one of 23 investment styles based on the fund's fiscal and semiannual portfolio holdings.

Style Index: The benchmark index (as defined by Standard & Poor's) that most closely matches the fund's peer group and historical performance, based on risk (volatility) and return.

Ranking Inputs

30-Day SEC Yield: The SEC yield, reported by the fund, is based on a 30-day period ending on the last day of the previous month. As an input to the Fixed Income S&P Mutual Fund Ranking, S&P evaluates the SEC yield compared with its category.

Manager Tenure: S&P gives a stronger ranking to funds whose manager has an established tenure with the mutual fund; a manager with at least three full rolling years at the helm would be ranked positively for this Risk Considerations factor. For team-managed funds. individual changes in team composition are not captured. All share classes of a fund are evaluated consistently.

S&P Fair Value Rank: Using S&P's exclusive proprietary quantitative model, stocks are ranked in one of five groups, ranging from Group 5, listing the most undervalued stocks, to Group 1, the most overvalued issues. Group 5 stocks are expected to generally outperform all others. The Fair Value rankings imply the following: 5-Stock is significantly undervalued; 4-Stock is moderately undervalued; 3-Stock is fairly valued; 2-Stock is modestly overvalued; 1-Stock is significantly overvalued. As an input to the S&P Mutual Fund Ranking, S&P evaluates the weighted average Fair Value Rank of the underlying holdings of the mutual fund compared with its category

S&P Issuer Credit Rating: Credit Ratings are issued by S&P Ratings Services, a nationally recognized securities rating organization, which is separate from S&P Equity Research. An Issuer Credit Rating (ICR) is a current opinion of an obligor's overall financial capacity (its creditworthiness) to pay its financial obligations. This opinion focuses on the obligor's capacity and willingness to meet its financial commitments as they come due, with AAA as the highest and D as the lowest rating.

Credit ratings are issued based on criteria published by S&P Rating Services, and are subject to the terms and conditions stated in the Ratings Services publications. Visit www.sandp.com for definitions, criteria documents and additional details. In particular, the ICR is not a recommendation to purchase, sell, or hold a financial obligation issued by an obligor, as it does not comment on market price or suitability for a particular investor. As an input to the S&P Mutual Fund Ranking, S&P evaluates the weighted average Credit Rating of the underlying holdings of the mutual fund compared with its peers.

S&P Quality Rank: Growth and stability of earnings and dividends are deemed key elements in establishing S&P's Quality Rankings for common stocks, which are designed to encapsulate the nature of this record in a single symbol. It should be noted, however, that the process also takes into consideration certain adjustments and modifications deemed desirable in establishing such rankings. The final score for each stock is measured against a scoring matrix determined by analysis of the scores of a large and representative sample of stocks. The range of scores in the array of this sample has been aligned with the following ladder of rankings; A+ Highest, A High, A-Above Average, B+ Average, B Below Average, B-Lower, C Lowest, D In Reorganization, NR Not Ranked. As an input to the S&P Mutual Fund Ranking, S&P evaluates the weighted average S&P Quality Rank of the underlying holdings of the mutual fund compared with its peers.

S&P STARS: Since January 1, 1987, Standard and Poor's Equity Research Services has ranked a universe of common stocks based on a given stock's potential for future performance. Under proprietary STARS (STock Appreciation Ranking System), S&P equity analysts rank

stocks according to their individual forecast of a stock's future total return potential versus the expected total return of a relevant benchmark (e.g., a regional index (S&P Asia 50 Index, S&P Europe 350 Index or S&P 500 Index)), based on a 12-month time horizon.

5-STARS (Strong Buy): Total return is expected to outperform the total return of a relevant benchmark by a wide margin over the coming 12 months, with shares rising in price on an absolute basis. 4-STARS (Buy): Total return is expected to outperform the total return of

a relevant bench mark over the coming 12 months, with shares rising in price on an absolute basis. 3-STARS (Hold): Total return is expected to closely approximate the

total return of a relevant benchmark over the coming 12 months, with shares generally rising in price on an absolute basis. 2-STARS (Sell); Total return is expected to underperform the total return

of a relevant benchmark over the coming 12 months, and the share price is not anticipated to show a gain. 1-STARS (Strong Sell): Total return is expected to underperform the

total return of a relevant benchmark by a wide margin over the coming 12 months, with shares falling in price on an absolute basis. As an input to the S&P Mutual Fund Ranking, S&P evaluates the weighted average STARS of the underlying holdings of the mutual fund compared with funds in its category.

Sales Load: As an input to the S&P ranking, funds are ranked positively for not charging a sales load.

Key Statistics

Average P/B: P/B is a ratio of a stock's price to its book value per share. Current market price per share of common stock is divided by the calculated book value per individual equity security. Average P/B is the market cap weighted average.

Average P/E: P/E is the price of a stock divided by its earnings po share. Average P/E is the market cap weighted average of all the P/E ratios for all the stocks in the fund.

Avg. Mkt Cap (Mil): Avg. Market Cap is the weighted average market capitalization of all market capitalization values for equity securities in

Dividend Yield: A calculation representing the average dividend yield of the fund's underlying holdings. Calculated by taking a weighted average of each holding's annual dividend divided by its current market price.

Mgr Change: In the event that the only manager of a fund changes, it will be depicted by a black diamond in the "Performance of \$10,000 Investment" chart.

No. of Holdings: The number of individual securities in the portfolio.

Partial Mgr Change: In the event that one (or more) out of a group of 2-3 managers of a fund changes, it will be depicted by a white diamond in the "Performance of \$10,000 investment" chart. Please note that if the fund is managed by more than three managers, it is considered as "Team Managed," and individual changes in a team will not be tracked.

Portfolio Turnover: The frequency at which the portfolio is changed during a year, as reported by the fund. As an input to the S&P ranking, funds are ranked versus their peer group; funds with below-average turnover are ranked positively. All share classes of a fund are evaluated consistently.

Fees and Expenses

Current Expense Ratio (Gross), Current Expense Ratio (Net): The projected operating expense of a mutual fund, as reported in the Annual Operating Expenses table of the latest prospectus, for the current fiscal year. The current expense ratio (gross) includes management fees, distribution (12b-1) fees, and other expenses, gross of any fee waivers or expense reimbursements. The current expense ratio (net) includes the effect of any fee waivers or expense reimbursements. For funds of funds, the current expense ratio also includes the projected underlying fund expense. The current expense ratio is expressed as a percentage of the fund's average net assets. Funds with lower expense ratios are able to distribute a higher percentage of their total returns to their shareholders. The expense ratio does not include brokerage costs for trading the portfolio.

Expense Ratio (Gross), Expense Ratio (Net): The actual operating expenses of a mutual fund, as reported in the Annual Report or prospectus 'Financial Highlights'. The expense ratio (gross) includes management fees, distribution (12b-1) fees, and other expenses, gross of any fee waivers or expense reimbursements. The expense ratio (net) includes the effect of any fee waivers or expense reimbursements. For funds of funds, only the expenses directly incurred by the fund are reported due to inconsistencies in the reporting of the underlying fund expenses. It is expressed as a percentage of its average net assets as of the latest fiscal year end. Funds with lower expense ratios are able to distribute a higher percentage of their total returns to their shareholders. The expense ratio does not include brokerage costs for trading the portfolio. As an input to the S&P Mutual Fund Ranking, S&P evaluates the fund's current net expense ratio versus its peers.

GICS: An industry classification standard, developed by Standard and Poor's in collaboration with Morgan Stanley Capital International

(MSCI). Under the GICS structure, companies are classified in one of 154 sub-industries, which are grouped into 68 industries, 24 industry groups, and 10 economic sectors (consumer discretionary, consumer staples, energy, financials, health care, industrials, information technology, materials, telecom services, and utilities). This four-tier structure accommodates companies across the world and facilitates sector analysis and investing.

Performance and Tax Analysis

Average Annual Total Return: In accordance with regulatory guidelines. calculated as the average annual compounded rate of return as of the end of the last calendar quarter. The calculation assumes maximum sales and redemption loads, reinvestment of distributions and inclusion of all recurring fees.

Best/Worst Historical Performance During Past 10 Years: Shows fund performance relative to its Style Index during the Style Index's best and worst-performing historical periods.

Return After Taxes on Distributions: An annualized total return that takes into account the effect of taxes upon the reinvestment of distributions and dividends into a fund. All fees and loads are dedu The highest tax rate applicable at the time and for the type of distribution is used. This return assumes the investor does not liquidate at the end of the measurement period.

Tax-Cost Ratio on Distributions: This measure depicts the amount of value the investor is able to keep after paying taxes compared to his or her pre-tax value in the presence of positive and negative returns.

Calculated as:

Modified Capture Ratio =
$$\frac{1 + R_{AT}}{1 + R} \times 100$$

Where:

R. = Return After Tax (expressed in decimals)

R_ = Return Before Tax (expressed in decimals)

Tax-Cost Ratio on Distributions and Sale: This measure depicts the amount of value the investor is able to keep after paying taxes and selling the shares compared to his or her pre-tax value in the presence of positive and negative returns. Calculated as:

$$\label{eq:modified Capture Ratio} \begin{aligned} & 1 + R_{_{AT}} \\ & - \cdots \\ & 1 + R_{_{BT}} \end{aligned} \ x \ 100$$

 $R_{AT} = Return After Tax$ (expressed in decimals)

R_{RT} = Return Before Tax (expressed in decimals)

Modern Portfolio Theory Statistics

Alpha: An annualized return measure of how much better or worse a fund's performance is relative to the S&P 500, after allowing for differences in risk. It is calculated using a linear regression over the most recent 36 months of data.

Beta: Measurement of a fund's sensitivity to changes in the market. For example, a beta of 2.00 means the fund has moved twice as much in the same direction as the market.

R-Squared: Measures the degree to which a fund's behavior is related to the S&P 500. Consider an equity fund with an R2 of .86 relative to the S&P 500 Index. One could infer from the R2 statistic that 86% of the fund's historical behavior was attributable to movements in the S&P

Sharpe Ratio: A measure of a fund's historical returns adjusted for risk, or volatility. Calculated as:

(Fund Return - Return on 3-Month Treasury Bills) **Fund Standard Deviation**

When the fund is a municipal bond fund, the 3-Month Treasury bill return is adjusted to reflect the tax treatment of the municipal bond fund. As an input to the S&P ranking for equity funds, a fund is rewarded for having a high Sharpe Ratio versus its peers, as this indicates better performance on a risk-adjusted basis.

Standard Deviation: A historical measure of the variability of a fund's returns. If a fund has a high standard deviation, its returns have been volatile; a low standard deviation indicates returns have been less volatile. As an input to the S&P Mutual Fund Ranking, S&P evaluates the fund's standard deviation versus its peers.

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