

Investment Review

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Dallas Park and Recreation Department
Investment Review
Period Ended 12/31/2018

Investment Insights

2018 – A Tough Year to Find Positive Returns

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Foreign Bonds 5.75%	Emerging Markets 78.51%	Real Estate 28.48%	Real Estate 8.69%	Emerging Markets 18.22%	Small Cap Blend 38.82%	Real Estate 30.38%	Large Cap Growth 5.67%	Small Cap Blend 21.31%	Emerging Markets 37.28%	Foreign Bonds 3.17%
Bonds 5.24%	High Yield 58.21%	Small Cap Blend 26.85%	Bonds 7.84%	Real Estate 17.77%	Mid Cap Blend 34.76%	S&P 500 13.69%	Real Estate 2.52%	Large Cap Value 17.34%	Large Cap Growth 30.21%	Bonds 0.01%
Alternative -21.39%	Mid Cap Blend 40.48%	Mid Cap Blend 25.48%	High Yield 4.98%	Large Cap Value 17.51%	Large Cap Growth 33.48%	Large Cap Value 13.45%	S&P 500 1.38%	High Yield 17.13%	Foreign Stocks 25.03%	Large Cap Growth -1.51%
High Yield -26.16%	Large Cap Growth 37.21%	Emerging Markets 18.88%	Foreign Bonds 3.94%	Foreign Stocks 17.32%	Large Cap Value 32.53%	Mid Cap Blend 13.22%	Foreign Bonds 1.36%	Mid Cap Blend 13.80%	S&P 500 21.83%	High Yield -2.08%
Small Cap Blend -33.79%	Foreign Stocks 31.78%	Comm. 16.83%	Large Cap Growth 2.64%	Mid Cap Blend 17.28%	S&P 500 32.39%	Large Cap Growth 13.05%	Bonds 0.55%	S&P 500 11.96%	Mid Cap Blend 18.52%	Alternative -3.48%
Comm. -35.65%	Real Estate 28.61%	Large Cap Growth 16.71%	S&P 500 2.11%	Small Cap Blend 16.35%	Foreign Stocks 22.78%	Foreign Bonds 8.79%	Alternative -0.39%	Comm. 11.77%	Small Cap Blend 14.65%	S&P 500 -4.38%
Large Cap Value -36.85%	Small Cap Blend 27.17%	Large Cap Value 15.51%	Large Cap Value 0.39%	S&P 500 16.00%	Alternative 8.96%	Bonds 5.97%	Foreign Stocks -0.81%	Emerging Markets 11.19%	Large Cap Value 13.66%	Real Estate -4.57%
S&P 500 -37.00%	S&P 500 26.46%	High Yield 15.12%	Mid Cap Blend -1.55%	High Yield 15.81%	High Yield 7.44%	Small Cap Blend 4.89%	Mid Cap Blend -2.44%	Real Estate 8.60%	Alternative 7.74%	Large Cap Value -8.27%
Real Estate -37.97%	Large Cap Value 19.69%	S&P 500 15.06%	Small Cap Blend -4.18%	Large Cap Growth 15.26%	Real Estate 2.47%	Alternative 3.46%	Large Cap Value -3.83%	Large Cap Growth 7.08%	High Yield 7.50%	Mid Cap Blend -9.06%
Large Cap Growth -38.44%	Comm. 18.91%	Foreign Stocks 7.75%	Alternative -5.72%	Foreign Bonds 6.46%	Foreign Bonds 1.18%	High Yield 2.45%	Small Cap Blend -4.41%	Foreign Bonds 4.90%	Real Estate 5.07%	Small Cap Blend -11.01%
Mid Cap Blend -41.46%	Alternative 11.47%	Bonds 6.54%	Foreign Stocks -12.14%	Alternative 4.79%	Bonds -2.02%	Emerging Markets -2.19%	High Yield -4.47%	Bonds 2.65%	Bonds 3.54%	Comm. -11.25%
Foreign Stocks -43.38%	Bonds 5.93%	Alternative 5.69%	Comm. -13.32%	Bonds 4.21%	Emerging Markets -2.60%	Foreign Stocks -4.90%	Emerging Markets -14.92%	Foreign Stocks 100%	Foreign Bonds 2.48%	Foreign Stocks -13.79%
Emerging Markets -53.33%	Foreign Bonds 4.43%	Foreign Bonds 3.28%	Emerging Markets -18.42%	Comm. -10.6%	Comm. -9.52%	Comm. -17.01%	Comm. -24.66%	Alternative 0.41%	Comm. 1.70%	Emerging Markets -14.58%

Best Performing



Worst Performing

2018 was shaping up to be another good year for domestic equity markets – that is, until the fourth quarter. Strong U.S. economic growth and corporate profits led the S&P 500 Index up over 10% through the first nine months of the year. However, concerns surrounding trade, Fed policy and decelerating growth weighed heavily on stocks in the fourth quarter. Only cash, foreign bonds, and domestic bonds ended the year in positive territory.

- Large Cap Blend:** S&P 500 Index
- Large Cap Growth:** Russell 1000 Growth Index
- Large Cap Value:** Russell 1000 Value Index
- Mid Cap Blend:** Russell Mid Cap Index
- Small Cap Blend:** Russell 2000 Index
- Foreign Stocks:** MSCI EAFE Index
- Emerging Markets:** MSCI Emerging Markets Index
- Foreign Bonds:** Blmbrg Barc Gbl Aggr ex USD Hdgd Index
- High Yield:** Bloomberg Barclays Corporate High Yield Index
- Bonds:** Bloomberg Barclays Capital U.S. Aggr Bond Index
- Alternatives:** HFRI Fund of Fund Composite Index
- Commodities:** Bloomberg Commodity Index
- Real Estate:** MSCI US REIT Index

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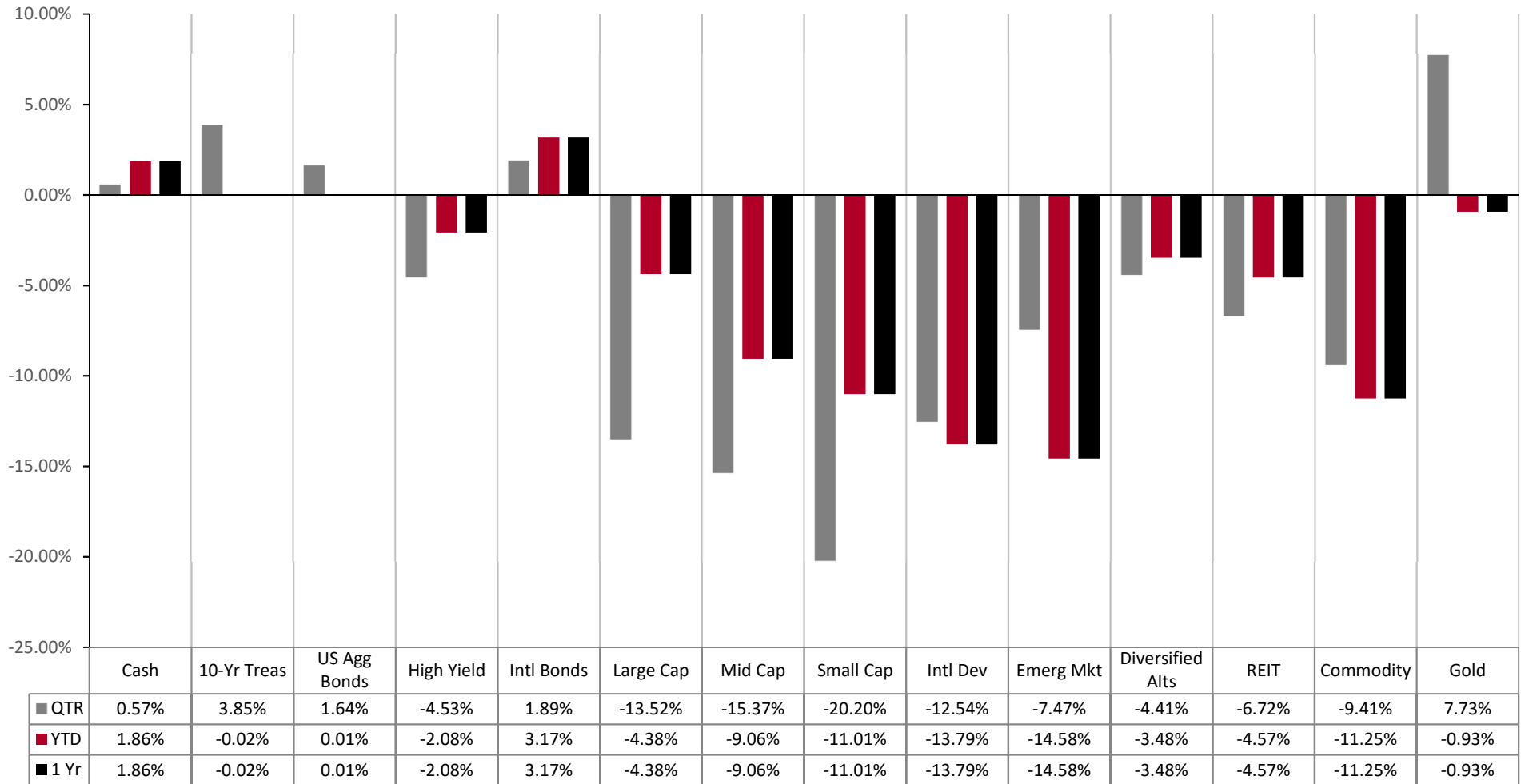
Broad Market Barometer

	US Stock Market	International Developed Stocks	Emerging Markets Stocks	US Bond Market	Global Bond Market ex US
Q4 2018	STOCKS			BONDS	
	-14.30%	-12.54%	-7.47%	1.64%	1.89%
Since Jan. 2001					
Avg. Quarterly Return	1.8%	1.3%	2.8%	1.1%	1.1%
Best Quarter	16.8%	25.4%	34.7%	4.6%	4.6%
	Q2 2009	Q2 2009	Q2 2009	Q3 2001	Q4 2008
Worst Quarter	-22.8%	-20.6%	-27.6%	-3.0%	-2.7%
	Q4 2008	Q3 2008	Q4 2008	Q4 2016	Q2 2015

Market segment (index representation) as follows: US Stock Market (Russell 3000 Index), International Developed Stocks (MSCI EAFE NR USD Index, Emerging Markets (MSCI Emerging Markets NR USD Index, US Bond Market (Bloomberg Barclays US Aggregate Bond Index), and Global Bond ex US Market (Bloomberg Barclays Global Agg ex USD Hdg Index).

- Well, that escalated quickly. 2018 was shaping up to be another good year for domestic equity markets, but it had a terrible ending. Strong US economic growth and corporate profits led the S&P 500 Index up over 10% through the first nine months of the year. However, concerns surrounding trade, Fed policy and decelerating growth weighed heavily on stocks in the fourth quarter. The -9.03% decline for the S&P 500 Index in December was the worst December-return since 1946. It seems we had more of a “Jack Frost” sell-off than a “Santa Claus” rally.
- Looking at broad market indexes, cash, international fixed income and domestic fixed income were among the best performing areas of the market for the fourth quarter; mid cap, large cap growth and small cap domestic equities were among the worst performing areas.
- The domestic equity market trailed the domestic fixed income market in 4q18, as the S&P 500 Index declined -13.52% versus the Bloomberg Barclays Aggregate Bond Index return of 1.64%. With stronger returns from 2q and 3q helping to partially offset the decline in 4q, the S&P 500 Index finished down -4.38% for 2018. Domestic fixed income finished the year basically flat with a return of 0.01%. The S&P 500 Index was leading the Bloomberg Barclays Aggregate Bond Index by over 12% through the end of September.
- Both developed international and emerging market equities fared better than the S&P 500 Index in 4q18. This helped narrow the performance gap between domestic large cap equities and developed international equities to about 9.5% for the 1-year period ending 12/31/18.
- The Federal Reserve raised rates in December, bringing the Fed Funds rate to 2.25%-2.50%. Fed Chair Jerome Powell suggested rates may be near their neutral level, hinting the Fed may take a more cautious approach in 2019. The Fed reduced the number of expected rate hikes for next year from three hikes down to two hikes.

Quarterly Market Summary*



*Market segment (index representation) information on Important Information and Disclosures page.

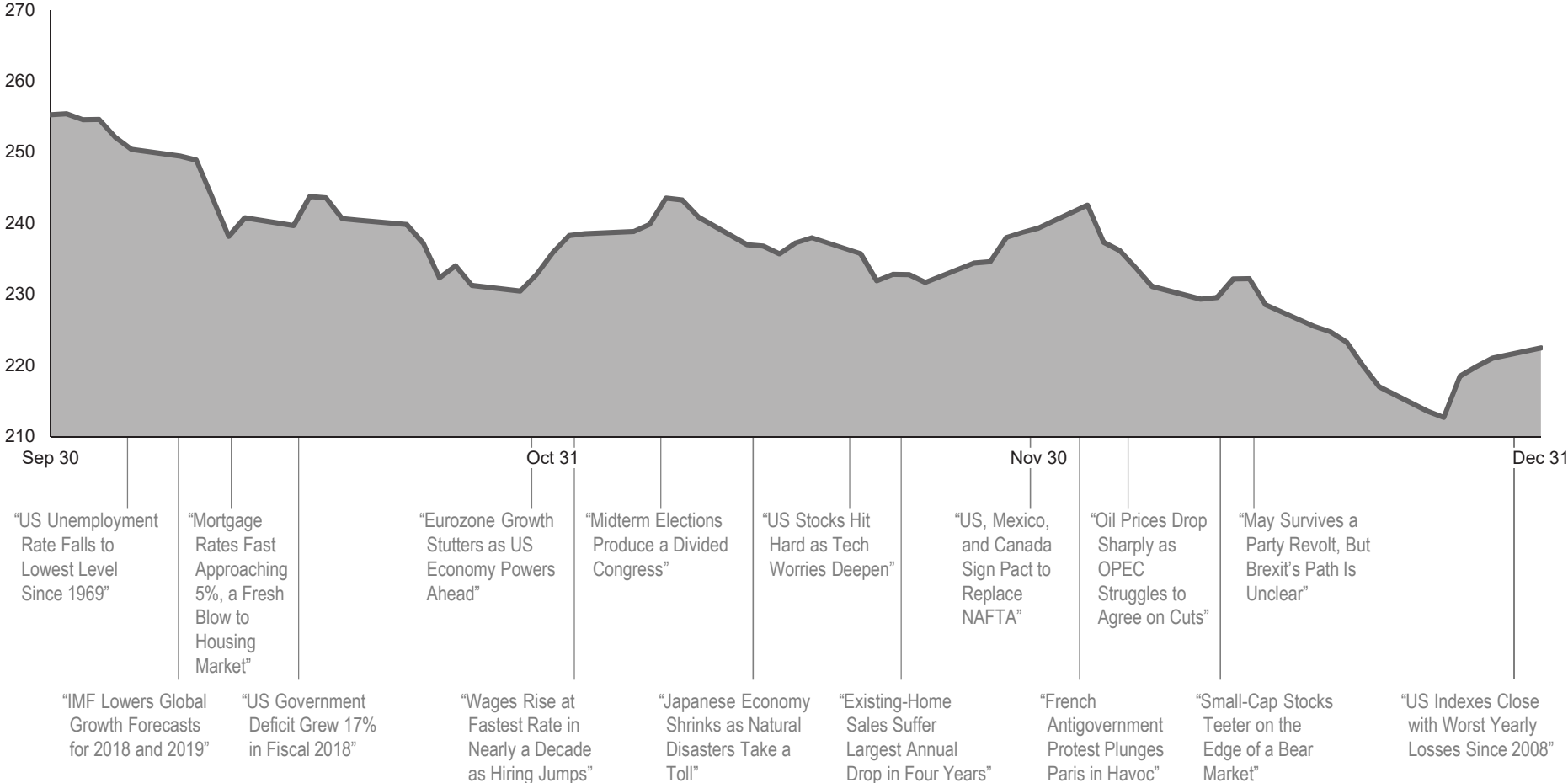
Broad Market Overview

Returns	1 Mo.	3 Mo.	YTD	1 Yr.	3 Yrs.	5 Yrs.	10 Yrs.
Capital Markets							
Dow Jones Industrial Avg	-8.59%	-11.31%	-3.48%	-3.48%	12.94%	9.70%	13.16%
NASDAQ 100 Index	-8.83%	-16.76%	0.04%	0.04%	12.59%	13.34%	19.29%
Russell 3000 Index	-9.31%	-14.30%	-5.24%	-5.24%	8.97%	7.91%	13.18%
S&P 500 Index	-9.03%	-13.52%	-4.38%	-4.38%	9.26%	8.49%	13.12%
Domestic Large Cap Equities							
Russell 1000® Index	-9.11%	-13.82%	-4.78%	-4.78%	9.09%	8.21%	13.28%
<i>Russell 1000® Value Index</i>	-9.60%	-11.72%	-8.27%	-8.27%	6.95%	5.95%	11.18%
<i>Russell 1000® Growth Index</i>	-8.60%	-15.89%	-1.51%	-1.51%	11.15%	10.40%	15.29%
Domestic Mid Cap Equities							
Russell Midcap® Index	-9.92%	-15.37%	-9.06%	-9.06%	7.04%	6.26%	14.03%
<i>Russell Midcap® Value Index</i>	-10.50%	-14.95%	-12.29%	-12.29%	6.06%	5.44%	13.03%
<i>Russell Midcap® Growth Index</i>	-9.07%	-15.99%	-4.75%	-4.75%	8.59%	7.42%	15.12%
Domestic Small Cap Equities							
Russell 2000® Index	-11.88%	-20.20%	-11.01%	-11.01%	7.36%	4.41%	11.97%
<i>Russell 2000® Value Index</i>	-12.09%	-18.67%	-12.86%	-12.86%	7.37%	3.61%	10.40%
<i>Russell 2000® Growth Index</i>	-11.68%	-21.65%	-9.31%	-9.31%	7.24%	5.13%	13.52%
International Equities							
MSCI EAFE Index	-4.85%	-12.54%	-13.79%	-13.79%	2.87%	0.53%	6.32%
<i>MSCI EAFE Value Index</i>	-4.89%	-11.70%	-14.78%	-14.78%	2.82%	-0.61%	5.50%
<i>MSCI EAFE Growth Index</i>	-4.82%	-13.33%	-12.83%	-12.83%	2.89%	1.62%	7.07%
MSCI ACWI ex USA	-4.53%	-11.46%	-14.20%	-14.20%	4.48%	0.68%	6.57%
MSCI Emerging Markets	-2.66%	-7.47%	-14.58%	-14.58%	9.25%	1.65%	8.02%
Cash & Fixed Income							
3-Month T-Bill	0.20%	0.57%	1.86%	1.86%	0.99%	0.60%	0.35%
BBg Barclays Agg Bond Index	1.84%	1.64%	0.01%	0.01%	2.06%	2.52%	3.48%
BBg Barclays Gbl Agg ex USD Hdgd Index	1.16%	1.89%	3.17%	3.17%	3.51%	4.11%	3.98%
BBg Barclays Corp HY Index	-2.14%	-4.53%	-2.08%	-2.08%	7.23%	3.83%	11.12%
Alternatives							
HFRI Fund of Funds Index*	-1.16%	-4.41%	-3.48%	-3.48%	1.50%	1.51%	3.18%
MSCI US REIT Index	-8.18%	-6.72%	-4.57%	-4.57%	2.88%	7.80%	12.17%
Bloomberg Commodity Index	-6.89%	-9.41%	-11.25%	-11.25%	0.30%	-8.80%	-3.78%

World Stock Market Performance

MSCI All Country World Index with Selected Headlines for Q4 2018

Fourth Quarter
(9/30/2018 – 12/31/2018)



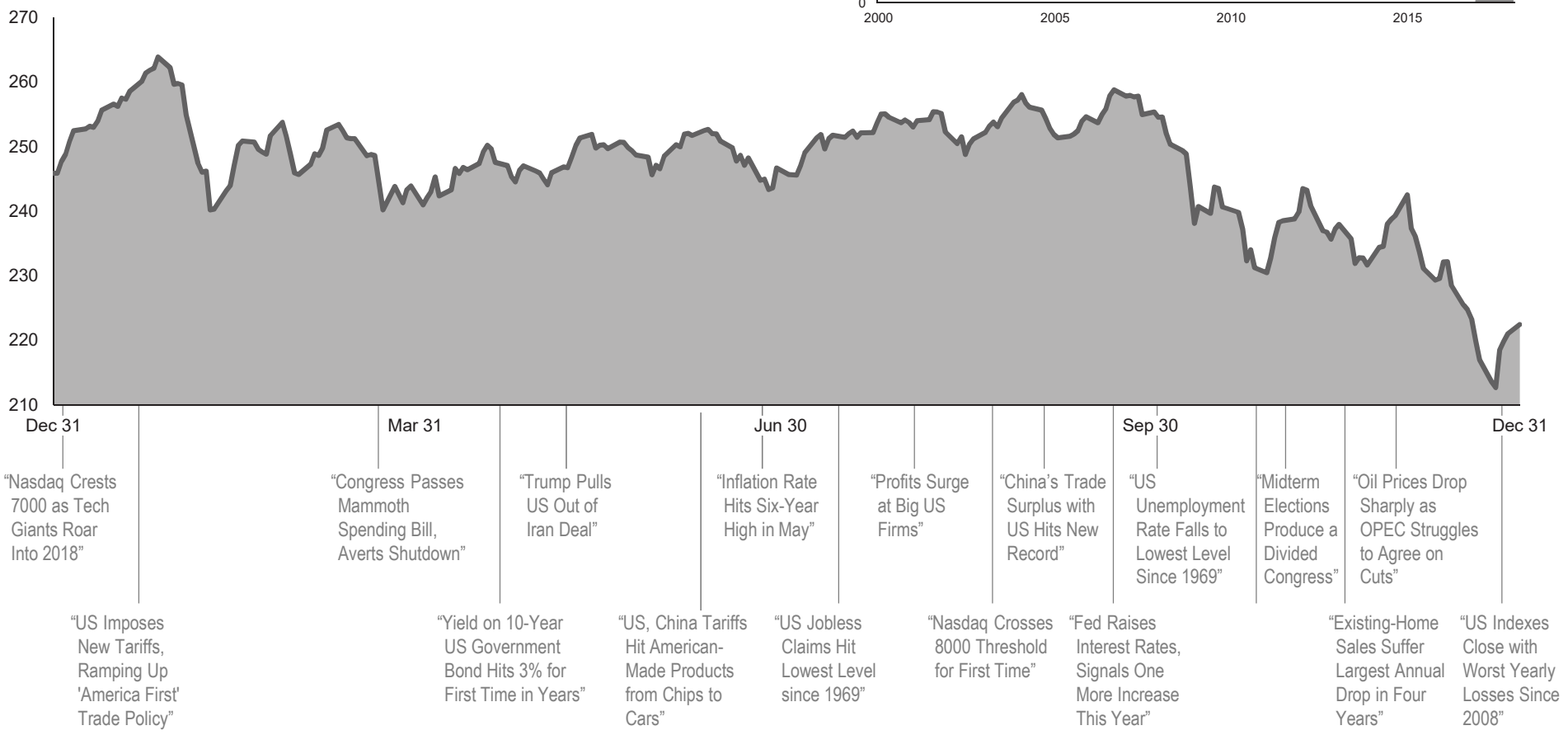
These headlines are not offered to explain market returns. Instead, they serve as a reminder that investors should view daily events from a long-term perspective and avoid making investment decisions based solely on the news. Graph Source: MSCI ACWI Index [net div.]. MSCI data © MSCI 2019, all rights reserved.

World Stock Market Performance

MSCI All Country World Index with Selected Headlines from Past 12 Months

1-Year
(12/31/2017 –12/31/2018)

LONG TERM (2000-Q4 2018)



These headlines are not offered to explain market returns. Instead, they serve as a reminder that investors should view daily events from a long-term perspective and avoid making investment decisions based solely on the news.
Graph Source: MSCI ACWI Index [net div.]. MSCI data © MSCI 2019, all rights reserved.

Annual Total Returns of Key Assets Classes

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
		Real Estate 28.48%								
Foreign Bonds 5.75%	Emg Markets 78.51%	Small Blend 26.85%								
Bonds 5.24%	High Yield 58.21%	Mid Blend 25.48%		Emg Markets 18.22%						
Alternative -21.39%	Mid Blend 40.48%	Emg Markets 18.88%	Real Estate 8.69%	Real Estate 17.77%						Foreign Bonds 3.17%
High Yield -26.16%	Large Growth 37.21%	Comm. 16.83%	Bonds 7.84%	Large Value 17.51%	Small Blend 38.82%			Small Blend 21.31%		Bonds 0.01%
Small Blend -33.79%	Foreign Stocks 31.78%	Large Growth 16.71%	High Yield 4.98%	Foreign Stocks 17.32%	Mid Blend 34.76%			Large Value 17.34%	Emg Markets 37.28%	Large Growth -15.1%
Comm. -35.65%	Real Estate 28.61%	Large Value 15.51%	Foreign Bonds 3.94%	Mid Blend 17.28%	Large Growth 33.48%		Large Growth 5.67%	High Yield 17.13%	Large Growth 30.21%	High Yield -2.08%
Large Value -36.85%	Small Blend 27.17%	High Yield 15.12%	Large Growth 2.64%	Small Blend 16.35%	Large Value 32.53%	Real Estate 30.38%	Real Estate 2.52%	Mid Blend 13.80%	Foreign Stocks 25.03%	Alternative -3.48%
S&P 500 -37.00%	S&P 500 26.46%	S&P 500 15.06%	S&P 500 2.11%	S&P 500 16.00%	S&P 500 32.39%	S&P 500 13.69%	S&P 500 1.38%	S&P 500 11.96%	S&P 500 21.83%	S&P 500 -4.38%
Real Estate -37.97%	Large Value 19.69%	Foreign Stocks 7.75%	Large Value 0.39%	High Yield 15.81%	Foreign Stocks 22.78%	Large Value 13.45%	Foreign Bonds 13.6%	Comm. 11.77%	Mid Blend 13.52%	Real Estate -4.57%
Large Growth -38.44%	Comm. 18.91%	Bonds 6.54%	Mid Blend -1.55%	Large Growth 15.26%	Alternative 8.96%	Mid Blend 13.22%	Bonds 0.55%	Emg Markets 11.9%	Small Blend 14.65%	Large Value -8.27%
Mid Blend -41.66%	Alternative 11.47%	Alternative 5.69%	Small Blend -4.13%	Foreign Bonds 6.46%	High Yield 7.44%	Large Growth 13.05%	Alternative -0.39%	Real Estate 8.60%	Large Value 13.66%	Mid Blend -9.06%
Foreign Stocks -43.38%	Bonds 5.93%	Foreign Bonds 3.28%	Alternative -5.72%	Alternative 4.79%	Real Estate 2.47%	Foreign Bonds 8.79%	Foreign Stocks -0.81%	Large Growth 7.08%	Alternative 7.74%	Small Blend -11.01%
Emg Markets -53.33%	Foreign Bonds 4.43%		Foreign Stocks -12.14%	Bonds 4.21%	Foreign Bonds 1.18%	Bonds 5.97%	Mid Blend -2.44%	Foreign Bonds 4.90%	High Yield 7.50%	Comm. -11.25%
			Comm. -13.32%	Comm. -1.06%	Bonds -2.02%	Small Blend 4.89%	Large Value -3.83%	Bonds 2.65%	Real Estate 5.07%	Foreign Stocks -13.79%
			Emg Markets -18.42%			Emg Markets -2.60%	Alternative 3.46%	Small Blend -4.41%	Foreign Stocks 100%	Bonds 3.54%
						Comm. -9.52%	High Yield 2.45%	High Yield -4.47%	Alternative 0.4%	Foreign Bonds 2.48%
							Emg Markets -2.19%	Emg Markets -11.92%		Comm. 1.70%
							Foreign Stocks -4.90%	Comm. -24.66%		
							Comm. -17.01%			

	Large Cap Blend: S&P 500 Index
	Large Cap Growth: Russell 1000® Growth Index
	Large Cap Value: Russell 1000® Value Index
	Mid Cap Blend: Russell Mid Cap Index
	Small Cap Blend: Russell 2000® Index
	Foreign Stocks: MSCI EAFE Index
	Emerging Markets: MSCI Emerging Mkts

	Foreign Bonds: Bloomberg Barclays Gbl Agg ex USD Hdg Index
	High Yield: Bloomberg Barclays Corporate High Yield Index
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	Alternatives: HFRI Fund of Fund Composite Index
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	Real Estate: MSCI US REIT Index

Quarterly Total Returns of Key Assets Classes

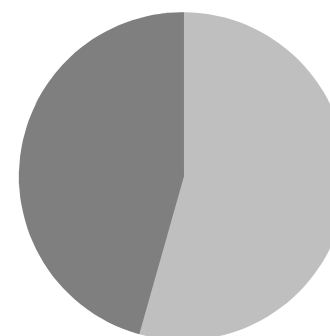
	1q16	2q16	3q16	4q16	1q17	2q17	3q17	4q17	1q18	2q18	3q18	4q18	
Real Estate	6.3%	Comm. 12.78%	Small Cap Blend 9.05%	Small Cap Blend 8.83%	Emerging Markets 11.45%	Emerging Markets 6.27%	Emerging Markets 7.89%	Large Cap Growth 7.86%	Emerging Markets 1.42%	Real Estate 10.10%	Large Cap Growth 9.17%	Foreign Bonds 189%	Best Performing
Emerging Markets	5.7%	Real Estate 6.8%	Emerging Markets 9.03%	Large Cap Value 6.68%	Large Cap Growth 8.9%	Foreign Stocks 6.2%	Large Cap Growth 5.90%	Emerging Markets 7.44%	Large Cap Growth 142%	Small Cap Blend 7.75%	S&P 500 7.7%	Bonds 164%	
Foreign Bonds	3.5%	High Yield 5.52%	Foreign Stocks 6.43%	S&P 500 3.82%	Foreign Stocks 7.25%	Large Cap Growth 4.67%	Small Cap Blend 5.67%	S&P 500 6.64%	Foreign Bonds 0.94%	Large Cap Growth 5.76%	Large Cap Value 5.70%	Alternative -4.4%	
High Yield	3.35%	Large Cap Value 4.58%	High Yield 5.55%	Mid Cap Blend 3.2%	S&P 500 6.07%	S&P 500 3.09%	Foreign Stocks 5.40%	Mid Cap Blend 6.07%	Alternative 0.9%	S&P 500 3.43%	Mid Cap Blend 5.00%	High Yield -4.53%	
Bonds	3.03%	Small Cap Blend 3.79%	Large Cap Blend 4.58%	Comm. 2.66%	Mid Cap Blend 5.1%	Mid Cap Blend 2.70%	S&P 500 4.48%	Large Cap Value 5.33%	Small Cap Blend -0.08%	Mid Cap Blend 2.82%	Small Cap Blend 3.58%	Real Estate -6.72%	
Mid Cap Blend	2.24%	Mid Cap Blend 3.18%	Mid Cap Blend 4.52%	High Yield 175%	Large Cap Value 3.27%	Small Cap Blend 2.46%	Mid Cap Blend 3.47%	Comm. 4.7%	Comm. -0.40%	Large Cap Value 1.8%	High Yield 2.40%	Emerging Markets -7.47%	
Large Cap Value	164%	Foreign Bonds 2.72%	S&P 500 3.85%	Large Cap Growth 10.1%	High Yield 2.70%	High Yield 2.7%	Large Cap Value 3.1%	Foreign Stocks 4.23%	Mid Cap Blend -0.46%	High Yield 103%	Foreign Stocks 135%	Comm. -9.4%	
S&P 500	135%	S&P 500 2.46%	Large Cap Value 3.48%	Alternative 0.86%	Small Cap Blend 2.47%	Real Estate 165%	Comm. 2.52%	Small Cap Blend 3.34%	S&P 500 -0.76%	Alternative 0.88%	Real Estate 109%	Large Cap Value -11.72%	
Large Cap Growth	0.74%	Bonds 2.2%	Alternative 2.29%	Foreign Stocks -0.7%	Alternative 2.38%	Bonds 145%	Alternative 2.24%	Alternative 2.03%	High Yield -0.86%	Foreign Bonds 0.48%	Alternative 0.44%	Foreign Stocks -12.54%	
Comm.	0.42%	Emerging Markets 0.66%	Foreign Bonds 0.53%	Foreign Bonds -186%	Real Estate 0.99%	Large Cap Value 134%	High Yield 198%	Real Estate 14%	Bonds -146%	Comm. 0.40%	Bonds 0.02%	S&P 500 -13.52%	
Small Cap Blend	-152%	Large Cap Growth 0.6%	Bonds 0.46%	Real Estate -2.96%	Bonds 0.82%	Alternative 0.80%	Real Estate 0.93%	Foreign Bonds 1.13%	Foreign Stocks -153%	Bonds -0.16%	Foreign Bonds -0.17%	Mid Cap Blend -5.37%	
Foreign Stocks	-3.0%	Alternative 0.56%	Real Estate -145%	Bonds -2.98%	Foreign Bonds 0.06%	Foreign Bonds 0.59%	Bonds 0.85%	High Yield 0.47%	Large Cap Value -2.83%	Foreign Stocks -124%	Emerging Markets -109%	Large Cap Growth -5.89%	
Alternative	-3.12%	Foreign Stocks -146%	Comm. -3.86%	Emerging Markets -4.1%	Comm. -2.33%	Comm. -3.00%	Foreign Bonds 0.68%	Bonds 0.39%	Real Estate -8.09%	Emerging Markets -7.96%	Comm. -2.02%	Small Cap Blend -20.20%	Worst Performing

	Large Cap Blend: S&P 500 Index		Foreign Bonds: Bloomberg Barclays Gbl Agg ex USD Hdg Index
	Large Cap Growth: Russell 1000® Growth Index		High Yield: Bloomberg Barclays Corporate High Yield Index
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	Emerging Markets: MSCI Emerging Mkts		

US Equities

- In US dollar terms, developed market indices generally outperformed the US but underperformed emerging markets indices during the fourth quarter.
- Value indices outperformed growth indices across large and small cap stocks in developed international markets and emerging markets.
- Overall, small caps underperformed large caps in developed international markets and were roughly in-line within emerging markets indices.

World Market Capitalization—US



54%

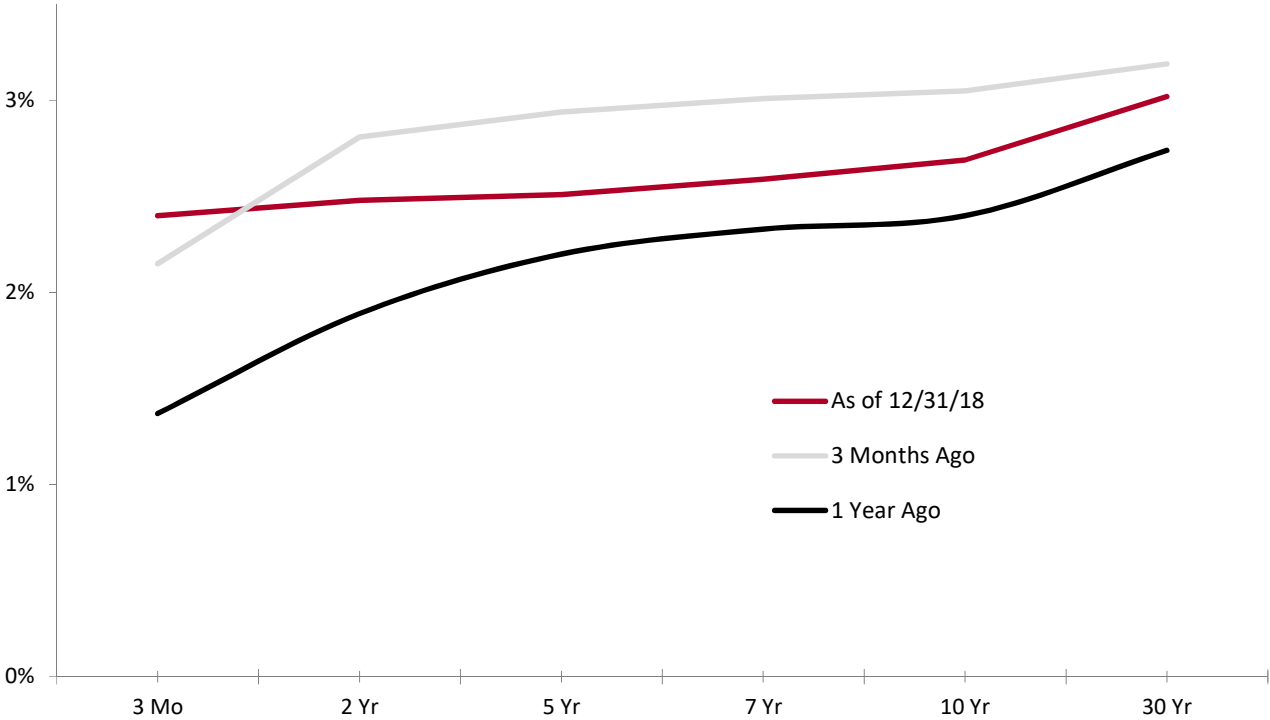
US Market
\$25.1 trillion

	3-MONTHS			YTD			1-YEAR			3-YEARS			5-YEARS		
	Value	Core	Growth	Value	Core	Growth	Value	Core	Growth	Value	Core	Growth	Value	Core	Growth
Large	-11.7	-13.8	-15.9	-8.3	-4.8	-1.5	-8.3	-4.8	-1.5	7.0	9.1	11.1	5.9	8.2	10.4
Mid	-15.0	-15.4	-16.0	-12.3	-9.1	-4.8	-12.3	-9.1	-4.8	6.1	7.0	8.6	5.4	6.3	7.4
Small	-18.7	-20.2	-21.7	-12.9	-11.0	-9.3	-12.9	-11.0	-9.3	7.4	7.4	7.2	3.6	4.4	5.1

World Market Cap represented by Russell 3000 Index, MSCI World ex USA IMI Index, and MSCI Emerging Markets IMI Index. Russell 3000 Index is used as the proxy for the US market. Returns in the style boxes are represented by the Russell indexes. Boxes shown in red represent returns below 0%. Light gray boxes represent returns between 0% and 10%. Returns above 10% are shown in dark gray

Fixed Income

Treasury Yield Curves



Yields	Last Yield	Prior Mo.	3 Mo. Ago	Year-End	1 Yr. Ago	3 Yrs. Ago	5 Yrs. Ago
Fed Funds Target	2.25-2.50%	2.00-2.25%	2.00-2.25%	1.25-1.50%	1.25-1.50%	0-0.25%	0-0.25%
2-Year Treasury	2.49%	2.79%	2.82%	1.88%	1.88%	1.05%	0.38%
10-Year Treasury	2.68%	2.99%	3.06%	2.41%	2.41%	2.27%	3.03%

Fixed Income

Historical Fed Funds Rate vs 10-Year Treasury Yield



Investment Policy Summary

Investment Objective

The assets of the Account are to be managed with fiduciary care in all investment decisions and the Manager is expected to minimize all costs and expenses involved with managing these assets. The assets of the Account are to be invested with the primary objective of producing maximum long-term returns consistent with the Account's asset allocation. Full discretion in investment decisions is given to the Manager subject to the guidelines reflected in this Statement.

Benchmark(s)

Policy Benchmark	Not Available
Primary Benchmark	5.6% 3 MO US TBILL / 32.8% [92% BC AGG, 8% BC GL AGG EX USD HED] / 61.6% [73% RUS 3000, 27% MSCI ACWI EX US NET]

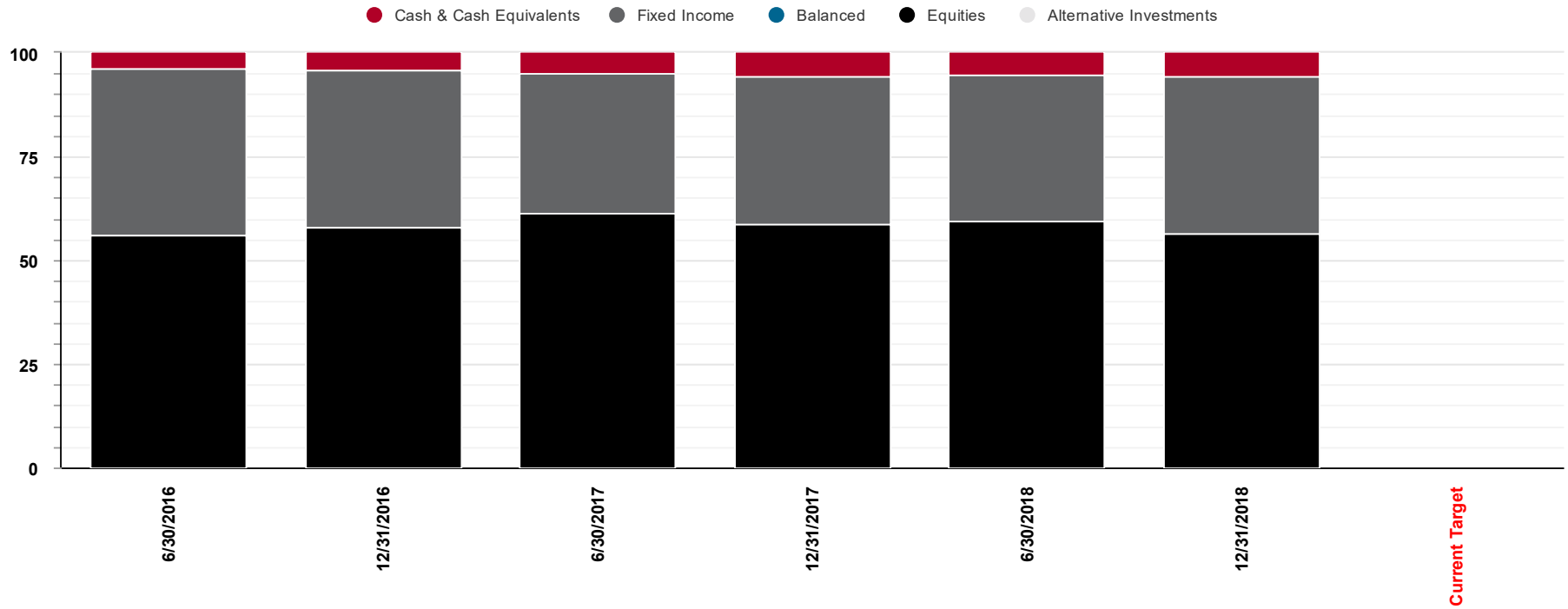
Additional Information

Liquidity Needs	No known short or long-term needs
Tax Exempt Status/Tax Information	-
Fiscal Year-End	12/31
Account Inception	12/15/2015
Investment Policy Statement (IPS) Effective Date	06/21/2016
Performance Inception Date	02/29/2016

IPS Strategic Asset Allocation And Targets

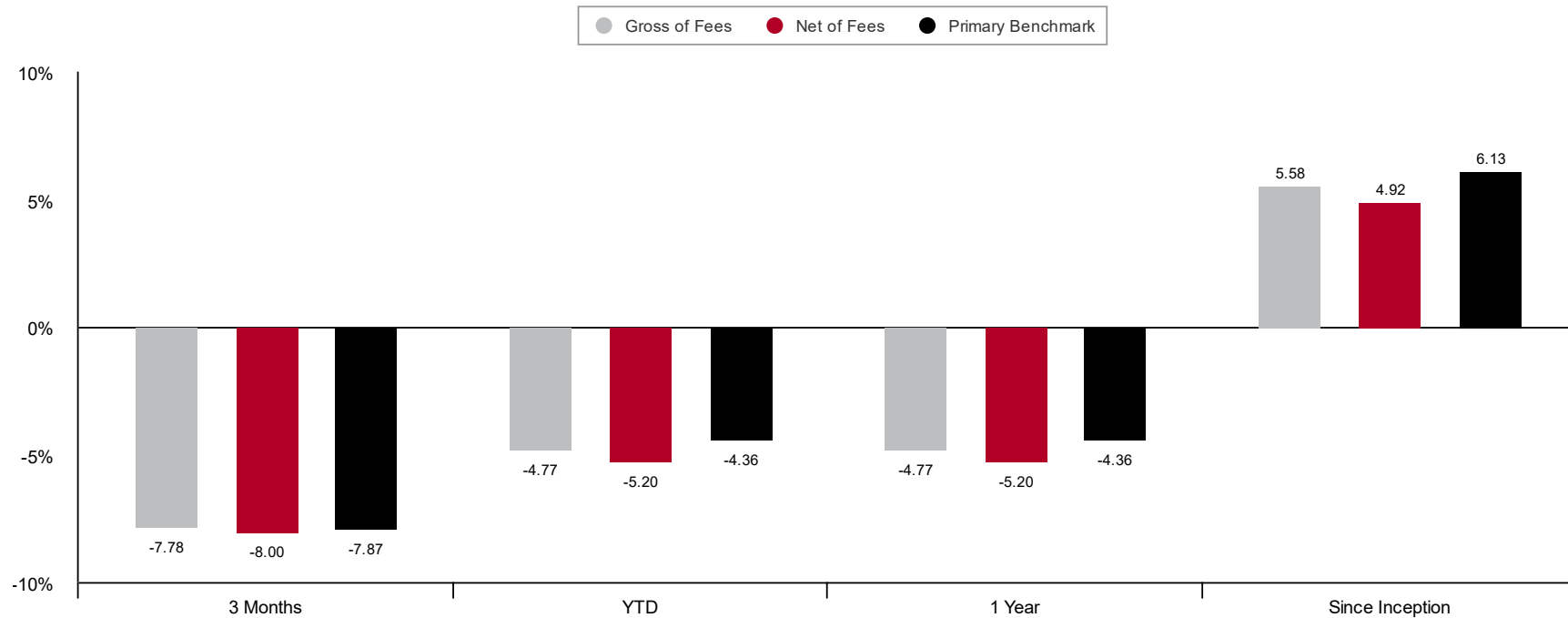
Asset Class	Minimum	Maximum	Target
Cash and Cash Equivalents	0.0%	0.0%	-
Fixed Income	25.0%	55.0%	-
Equities	30.0%	60.0%	-
Alternatives	0.0%	0.0%	-

Allocation Summary



Class	Ending Market Value	Current Portfolio Allocation	Target Allocation	Difference (%)	Difference (\$)
Cash & Cash Equivalents	66,610	5.5%	-	5.5%	66,610
Fixed Income	459,813	38.2%	-	38.2%	459,813
Equities	676,039	56.2%	-	56.2%	676,039
TOTAL PORTFOLIO	1,202,462	100%	0%	-	-

Portfolio Performance Summary



Account inception was December 15, 2015. Performance calculation began on February 29, 2016.
Returns for time periods greater than 1 year are annualized.

Portfolio Summary	3 Months	YTD	1 Year	Since Inception
Beginning Value (\$)	1,306,952	1,272,739	1,272,739	0
Net Contributions and Withdrawals (\$)	-2,806	-10,576	-10,576	1,026,685
Investment Gain/Loss (\$)	-101,684	-59,700	-59,700	175,778
Ending Value (\$)	1,202,462	1,202,462	1,202,462	1,202,462
Total Portfolio (Gross of Fees) (%)	-7.78%	-4.77%	-4.77%	5.58%
Total Portfolio (Net of Fees) (%)	-8.00%	-5.20%	-5.20%	4.92%
Growth with Income Strategy (ex Alts) Class Blend (Primary %)	-7.87%	-4.36%	-4.36%	6.13%

Performance by Asset Class

Asset Class / Benchmark	Alloc %	Market Value	3 Months	YTD	1 Year	Inception
Cash Equivalent	5.54%	66,610	0.51%	1.64%	1.64%	0.87%
<i>3-Month Treasury Bill</i>	5.60%	-	0.57%	1.86%	1.86%	0.92%
Fixed Income	38.24%	459,813	1.08%	0.37%	0.37%	1.72%
<i>92% BC AGG, 8% BC GL AGG EX USD HED</i>	32.80%	-	1.66%	0.26%	0.26%	0.97%
Equities	56.22%	676,039	-13.46%	-8.41%	-8.41%	8.47%
<i>73% RUS 3000, 27% MSCI ACWI EX US NET</i>	61.60%	-	-13.52%	-7.66%	-7.66%	10.47%
Alternatives	-	-	-	-	-	1.58%
<i>N/A</i>	-	-	-	-	-	-
Total Portfolio (Gross of fees)	100.00%	1,202,462	-7.78%	-4.77%	-4.77%	5.58%
Total Portfolio (Net of fees)	-	-	-8.00%	-5.20%	-5.20%	4.92%
<i>Growth with Income Strategy (ex Alts) Class Blend</i>	100.00%	-	-7.87%	-4.36%	-4.36%	6.13%

Returns for time periods greater than 1 year are annualized.

As of: 12/31/2018

Performance by Portfolio

Portfolio / Benchmark	Market Value	3 Months	CYD	1 Year	3 Years	5 Years	10 Years	Inception
DALLAS PARK AND REC - CONS (GROSS)	1,202,462	-7.78%	-4.77%	-4.77%	-	-	-	5.58%
DALLAS PARK AND REC - CONS (NET)	1,202,462	-8.00%	-5.20%	-5.20%	-	-	-	4.92%
<i>Growth with Income Strategy (ex Alts) Class Blend</i>	-	<i>-7.87%</i>	<i>-4.36%</i>	<i>-4.36%</i>	-	-	-	<i>6.13%</i>
DALLAS PARK AND RECREATION DEPT (GROSS)	0	0.00%	0.00%	0.00%	-0.70%	-	-	-0.21%
DALLAS PARK AND RECREATION DEPT (NET)	0	0.00%	0.00%	0.00%	-	-	-	-
<i>Growth with Income Strategy (ex Alts) Class Blend</i>	-	<i>-7.87%</i>	<i>-4.36%</i>	<i>-4.36%</i>	<i>5.70%</i>	-	-	<i>4.04%</i>
DALLAS PARK AND REC - GRAUWYLER PRIN (GROSS)	105,216	-8.27%	-5.18%	-5.18%	-	-	-	5.41%
DALLAS PARK AND REC - GRAUWYLER PRIN (NET)	105,216	-8.50%	-6.03%	-6.03%	-	-	-	4.64%
<i>Growth with Income Strategy (ex Alts) Class Blend</i>	-	<i>-7.87%</i>	<i>-4.36%</i>	<i>-4.36%</i>	-	-	-	<i>6.80%</i>
DALLAS PARK AND REC - GRAUWYLER GRTH (GROSS)	2,206	-8.49%	-5.38%	-5.38%	-	-	-	4.71%
DALLAS PARK AND REC - GRAUWYLER GRTH (NET)	2,206	-10.66%	-13.50%	-13.50%	-	-	-	-3.18%
<i>Growth with Income Strategy (ex Alts) Class Blend</i>	-	<i>-7.87%</i>	<i>-4.36%</i>	<i>-4.36%</i>	-	-	-	<i>5.48%</i>
DALLAS PARK AND REC - WEISS PRIN (GROSS)	93,568	-7.66%	-4.59%	-4.59%	-	-	-	5.64%
DALLAS PARK AND REC - WEISS PRIN (NET)	93,568	-7.90%	-5.54%	-5.54%	-	-	-	4.70%
<i>Growth with Income Strategy (ex Alts) Class Blend</i>	-	<i>-7.87%</i>	<i>-4.36%</i>	<i>-4.36%</i>	-	-	-	<i>6.79%</i>
DALLAS PARK AND REC - WEISS GRTH (GROSS)	1,914	-7.78%	-4.67%	-4.67%	-	-	-	4.91%
DALLAS PARK AND REC - WEISS GRTH (NET)	1,914	-10.28%	-13.95%	-13.95%	-	-	-	-3.99%
<i>Growth with Income Strategy (ex Alts) Class Blend</i>	-	<i>-7.87%</i>	<i>-4.36%</i>	<i>-4.36%</i>	-	-	-	<i>5.37%</i>
DALLAS PARK AND REC - CRADDOCK PRIN (GROSS)	919,663	-7.80%	-4.78%	-4.78%	-	-	-	5.61%
DALLAS PARK AND REC - CRADDOCK PRIN (NET)	919,663	-7.99%	-5.56%	-5.56%	-	-	-	4.84%
<i>Growth with Income Strategy (ex Alts) Class Blend</i>	-	<i>-7.87%</i>	<i>-4.36%</i>	<i>-4.36%</i>	-	-	-	<i>6.84%</i>

Returns for time periods greater than 1 year are annualized.



Performance by Portfolio

Portfolio / Benchmark	Market Value	3 Months	CYD	1 Year	3 Years	5 Years	10 Years	Inception
DALLAS PARK AND REC - CRADDOCK GRTH (GROSS)	79,895	-7.05%	-4.25%	-4.25%	-	-	-	4.75%
DALLAS PARK AND REC - CRADDOCK GRTH (NET)	79,895	-7.29%	-5.25%	-5.25%	-	-	-	3.70%
<i>Growth with Income Strategy (ex Alts) Class Blend</i>	-	-7.87%	-4.36%	-4.36%	-	-	-	5.07%

Returns for time periods greater than 1 year are annualized.

Asset Detail Report

Asset Class	Security ID	Ticker	Security Name	Shares	\$ Market Value	% Current Yield	% Class	% Total
Cash & Cash Equivalents								
			Cash & Cash Equivalents	66,484	66,484	0.00	99.8	5.53
TOTAL Cash & Cash Equivalents					\$66,484	0.00%	100.0%	5.54%
Fixed Income								
Core Short								
	912796PX1	912796PX1	United States Treasury Bills 0.000 03/28/2019	10,000	9,944	0.00	2.2	0.83
TOTAL Core Short					\$9,944	0.00%	2.2%	0.83%
Core Intermediate								
	14956P851	AIBNX	CAVANAL HILL FDS US BD INSTL SHS 0.000	760	6,997	2.64	1.5	0.58
	592905509	MWTIX	METROPOLITAN WEST TOTAL RET CL I 0.000	13,787	143,246	3.49	31.2	11.94
	921937603	VBTLX	VANGUARD BD IDX FD TTL BDINDX ADM	13,694	143,106	2.91	31.2	11.93
TOTAL Core Intermediate					\$293,349	3.19%	64.0%	24.46%
US Fixed Income Other								
	72201F490	PIMIX	PIMCO FDS INCOM FD INSTL	5,804	68,549	5.72	15.0	5.73
TOTAL US Fixed Income Other					\$68,549	5.74%	15.0%	5.73%
International Fixed Income Other								
	92203J308	VTABX	VANGUARD CHARLOTTE FUNDS TTINT IX ADM C	2,731	59,244	3.00	12.9	4.93
TOTAL International Fixed Income Other					\$59,244	3.00%	12.9%	4.93%
High Yield Fixed Income								
	31420B847	FIHLX	FEDERATED INVESTORS HIGH YLD BD R6	3,001	27,519	6.37	6.0	2.30
TOTAL High Yield Fixed Income					\$27,519	6.40%	6.0%	2.3%
TOTAL Fixed Income					\$458,605	1.40%	100.0%	38.24%
Equities								
Large Cap Value								
	55273H353	MEIKX	MFS SERIES TST I VALUE FD CL R6	1,824	64,400	2.23	9.5	5.36
TOTAL Large Cap Value					\$64,400	2.23%	9.5%	5.36%
Large Cap Core								
	922040100	VINIX	VANGUARD INSTL IDX SH BEN INT	751	170,836	2.13	25.3	14.21
TOTAL Large Cap Core					\$170,836	2.13%	25.3%	14.21%
Large Cap Growth								
	741479406	PRUFX	PRICE T ROWE GRWTH FD CL I	1,404	80,263	0.37	11.9	6.67
TOTAL Large Cap Growth					\$80,263	0.37%	11.9%	6.67%
Mid Cap Value								

As of: 12/31/2018

Asset Detail Report

Asset Class	Security ID	Ticker	Security Name	Shares	\$ Market Value	% Current Yield	% Class	% Total
	47803W703	JVMRX	JOHN HANCOCK FDS DISP VLMDCP R6	1,564	27,404	1.19	4.1	2.28
			TOTAL Mid Cap Value		\$27,404	1.19%	4.1%	2.28%
Mid Cap Core								
	922908835	VMCIX	VANGUARD INDEX FDS MD CP STK INST	1,832	69,228	1.83	10.2	5.76
			TOTAL Mid Cap Core		\$69,228	1.83%	10.2%	5.76%
Mid Cap Growth								
	57630A592	MEFZX	MASSMUTUAL SELECT SEL MC GREII Z	2,005	37,876	0.05	5.6	3.15
	74441C881	PJGQX	PRUDENTIAL JENNISON CL Q	70	1,810	0.00	0.3	0.15
			TOTAL Mid Cap Growth		\$39,686	0.05%	5.9%	3.3%
Small Cap Value								
	233203819	DFSVX	DFA INVT DIMENSION US SML CAP VAL	349	10,474	1.05	1.5	0.87
			TOTAL Small Cap Value		\$10,474	1.05%	1.5%	0.87%
Small Cap Core								
	922908876	VSCIX	VANGUARD INDEX FDS S CP STK INST	342	21,616	1.68	3.2	1.80
			TOTAL Small Cap Core		\$21,616	1.68%	3.2%	1.8%
Small Cap Growth								
	779562206	PRJIX	ROWE PRICE N/HORIZ FD CL I	218	10,538	0.00	1.6	0.88
			TOTAL Small Cap Growth		\$10,538	0.00%	1.6%	0.88%
International Developed Value Equity								
	256206103	DODFX	DODGE & COX INTL STK FD	1,149	42,402	2.93	6.3	3.53
			TOTAL International Developed Value Equity		\$42,402	2.93%	6.3%	3.53%
International Developed Core Equity								
	411512445	HNINX	HARBOR FUND INTL FD RTRMT	117	3,919	2.88	0.6	0.33
	921943809	VTMGX	VANGUARD TAX MANAG DEV MKTS ADMR	3,605	43,113	3.33	6.4	3.59
			TOTAL International Developed Core Equity		\$47,032	3.29%	7.0%	3.91%
International Developed Growth Equity								
	552981383	MIDLX	MFS SERIES TST V INTL NEWDIS R6	1,618	48,549	1.11	7.2	4.04
			TOTAL International Developed Growth Equity		\$48,549	1.11%	7.2%	4.04%
International Emerging Equity								
	683974604	ODVIX	OPPENHEIMER DEVELO CL I	1,161	43,612	0.80	6.5	3.63
			TOTAL International Emerging Equity		\$43,612	0.80%	6.5%	3.63%
			TOTAL Equities		\$676,039	0.92%	100.0%	56.22%
			TOTAL		\$1,201,128	2.33%	100.0%	100.00%
			TOTAL ACCRUED		\$1,334			
			TOTAL ASSETS		\$1,202,462			

Reconciliation

Year	Time Period	Beginning Market Value ¹	Net Contributions & Withdrawals	Gain / Loss	Ending Market Value ¹
2018		1,272,739	-10,576	-59,700	1,202,462
	December	1,260,600	-2,806	-55,331	1,202,462
	November	1,243,428	0	17,171	1,260,600
	October	1,306,952	0	-63,524	1,243,428
	September	1,308,550	633	-2,231	1,306,952
	August	1,298,134	-2,841	13,257	1,308,550
	July	1,275,437	0	22,698	1,298,134
	June	1,275,518	0	-82	1,275,437
	May	1,267,528	-2,806	10,796	1,275,518
	April	1,268,121	0	-593	1,267,528
	March	1,278,030	-2,756	-7,152	1,268,121
	February	1,311,701	0	-33,671	1,278,030
	January	1,272,739	0	38,963	1,311,701
2017		1,119,902	-13,043	165,880	1,272,739
	Quarter 4	1,233,796	-2,698	41,640	1,272,739
	Quarter 3	1,198,107	-2,652	38,342	1,233,796
	Quarter 2	1,164,614	-2,596	36,089	1,198,107
	Quarter 1	1,119,902	-5,097	49,809	1,164,614
2016		-	1,050,304	69,597	1,119,902
	Quarter 4	1,119,373	0	529	1,119,902
	Quarter 3	1,085,301	-2,300	36,372	1,119,373
	Quarter 2	1,076,152	-1,168	10,317	1,085,301
	Quarter 1	-	1,053,773	22,379	1,076,152

¹Market values include accrued income.

Important Information

Allocation Effect: Allocation Effect measures the influence that an over- or underweight allocation to a particular sector has on a portfolio's performance.

Alpha: Alpha is a measure of performance on a risk-adjusted basis, taking the volatility of a portfolio into consideration and comparing the risk-adjusted performance to a benchmark index. The excess return of the strategy relative to the return of the benchmark index is alpha. A positive alpha of 1.0 means the strategy has outperformed its benchmark by 1%, while a similar negative alpha would indicate an underperformance of 1%.

Beta: Beta is a measure of the volatility, or systematic risk, of a portfolio in comparison to that of the market as a whole. Beta values can be positive or negative. An index has a beta of 1.0.

Batting Average: Batting average is a statistical metric used to measure a manager's ability to meet or beat an index. It is calculated by dividing the number of months in which the manager beats or matches the index return by the total number of months in the comparison period and multiplying that factor by 100. A higher batting average reflects greater skill of the manager.

Capture Ratio: The capture ratio is a statistical measure that compares the strategy's overall performance in up-markets versus its overall performance in down-markets, and is used to evaluate how much a manager participates on the upside compared to how well it protects on the downside.

Days of Non-Compliance: When monitoring compliance to investment guidelines over a period of time, the days of non-compliance are the total number of days during the time period when the portfolio was not in compliance with those guidelines.

Investment Gain/Loss: Investment Gain/Loss is defined as interest and dividend income, accrued income, foreign tax withholding refunds, realized gain/loss, and market appreciation and depreciation.

Information Ratio: Information Ratio is a risk-adjusted ratio of portfolio returns exceeding the returns of a benchmark index to the volatility of those excess returns. The information Ratio measures a portfolio manager's ability to generate excess returns relative to a benchmark, but also attempts to identify the consistency of the manager. The higher the ratio, the more consistent the manager's historical returns.

Interaction Effect: Interaction Effect is the portion of a portfolio's return that can be attributed to the interaction between the manager's selection decisions and allocation decisions.

Issuer Concentration: Issuer Concentration is monitored based on counterparties and industries by consolidating securities by issuer using the first six digits of the security's cusip. This information is then sorted by percentage of total market value.

Market Value: The market values shown in this report and used in calculating the returns in this report are calculated independently from our trust accounting system. Valuations are based on trade date full accrual methodologies which may differ from your chosen statement reporting method. Please refer to your BOKF Financial statement for your official account record. Discrepancies should be discussed with your advisor.

Net of Fee Returns: Net of fee returns reflect investment management fees that have either been calculated by BOKF or deducted from the market value of the portfolio.

Parallel Shift Effect: The Parallel Shift Effect is the portion of a portfolio's return that is attributable to a movement of the yield curve over the time period being evaluated.

Performance Inception Date: Performance inception date is the date that the all funds designated are fully invested in the chosen investment strategy.

Policy Benchmark: A Policy Benchmark is assigned to a portfolio if the client's Investment Policy Statement indicates the market index used to evaluate achievement of the investment objective. The blended benchmark represents the weighted average of the asset allocation targets defined in the investment policy statement. If no targets are defined, the midpoints of each asset class's minimum and maximum ranges will be used, with the total of the weights equaling 100%. Changes to benchmarks are made prospectively.

Primary Benchmark: The primary benchmark is made up of the target weightings assigned to asset class benchmarks of the investment policy statement, reflecting the investment strategy for the total portfolio. The primary benchmark reflects indices deemed by the investment manager to be most appropriate for the management strategy.

R-Squared: R-squared is a statistical measure that represents the percentage of a security's movements that can be explained by movements in a benchmark index. R-squared values range from 0 to 100, and a value of 100 means that all movements of a portfolio are completely explained by movements in the index.

Reshaping Effect: The Reshaping Effect is the portion of a portfolio's return that is attributable to the change in the shape of the yield curve over the time period being evaluated.

Rolldown Effect: The Rolldown Effect is the portion of a portfolio's return that is attributable to the bonds' movement along the yield curve as the term-to-maturity decreases over time.

Secondary Benchmark: In some instances, a secondary benchmark may be assigned as an additional measurement using different indices.

Security Level Returns: Beginning date of security level historical performance is as-of the implementation of enhanced performance reporting.

Important Information

Security/Sector Selection Effect: The Security/Sector Selection Effect is the portion of a portfolio's return that can be attributed to the manager's sector allocation and security selection decisions.

Selection Effect: The Selection Effect is the portion of a portfolio's return that can be attributed to the manager's security selection decisions within a particular sector.

Standard Deviation: Standard deviation is a measure of dispersion of returns. It is calculated by using the positive square root of the variance. The higher the standard deviation, the more risky the data set being measured.

Sortino Ratio: Sortino Ratio is a risk-adjusted ratio. It is a modification of the Sharpe ratio that differentiates harmful downside volatility from general volatility by taking into account the standard deviation of negative asset returns. The Sortino Ratio subtracts the risk-free rate of return from the portfolio's return and then divides that by the downside deviation. A large Sortino Ratio indicates the portfolio has historically had lower probability of large loss.

Tracking Error: Tracking error is a divergence between the price behavior of a portfolio and the price behavior of a benchmark. Tracking errors are reported as a positive number representing the standard deviation percentage difference. Tracking error for passive strategies should be minimal.

Turnover Ratio: Turnover Ratio is the percentage of an investment or mutual fund's holdings that have been replaced in a given year to measure the level of the fund's trading activity. The Turnover Ratio can vary depending on the type of investment style, objective, or strategy.

Yield Effect: The Yield Effect is the portion of a portfolio's return that is attributable to interest income and to price changes resulting from a decrease in term-to-maturity over the time period being evaluated.

Due Diligence Process**Manager Search, Selection and Ongoing Monitoring Process**

The Process applies a disciplined framework for identifying investment managers that make their investment strategies available through various investment vehicles, including mutual funds, separately managed accounts and collective investment trusts (CITs).

Selection Process

The selection process relies heavily on objective measures but also takes into consideration subjective elements. Our approach recognizes that past performance is primarily useful as a tool for identifying managers that may be worthy of further in-depth qualitative research. As such, we use filters and screens as a starting point in our research process. We look for investment managers that have outperformed peers and benchmarks over a reasonably long period of time. In addition to absolute performance, we take into account such things as assets under management, performance consistency, volatility and downside risk. We attempt to identify factors that have impacted performance, positively or negatively, and decipher which factors may or may not be repeatable. We prefer managers that are available at a competitive fee or fund expense ratio.

The steps outlined below represent a general outline of how a list of possible candidates is narrowed to those with characteristics strongly aligned with the identified objective. Each of the applicable Due Diligence Metrics set forth below are also considered. The weight given to any of the elements outlined below or the Due Diligence Metrics, as well as any preferences specified may vary from search to search, as the characteristics associated with the objective vary.

1. Create a universe of potential candidates utilizing information from a data service provider (such as Morningstar, Lipper, PSN, Zephyr, etc.). Passive options or specialty funds may be researched through additional resources to determine a list of investment options available to cover the stated objective. Filter candidates through initial search criteria. Examples of possible criteria include:
 - a. Asset category and style (ex. Large Growth, Intermediate-term Bond)
 - b. Minimum asset base necessary to provide confidence regarding such issues as liquidity or going concern status of a fund structure
 - c. Manager tenure - Display level of experience necessary to manage the strategy with a preference given to managers with 5 years or more history
 - d. Performance history available, with preference given to strategies with 5 years or more history
 - e. Performance relative to peers over historical periods
2. Narrow candidates further by reviewing additional performance characteristics and specific criteria appropriate to the search objective. Examples of possible criteria include:
 - a. Calendar year performance versus peer group and benchmark
 - b. Risk-adjusted performance over historical periods
 - c. Reasonable expense ratio for the objective
 - d. Access constraints and appropriateness (i.e. investment vehicle, minimum investment, share class, fee structure, open/closed status, etc.)
3. Research and analyze the remaining candidates and any other options identified outside of data service providers. Examples of possible analysis include:
 - a. Over various time periods, analyze the following characteristics and narrow the list of managers utilizing both objective and subjective judgment.
 - i. Style purity
 1. Evaluate market capitalization and style in relation to search objective
 2. Utilizing quantitative and/or qualitative measures to ensure the manager is being compared with the appropriate peer group and benchmark
 3. Check for style drift and determine if it can be explained
 - ii. Excess returns relative to benchmark
 1. Excess returns at appropriate level for the investment strategy
 2. Appropriate level of tracking error (standard deviation of excess returns)
 3. Analyze performance relative to the peer group and benchmark over historical time periods and calendar years. Evaluate if success was due to an anomaly or the result of the manager consistently adding value.
 - iii. Risk-return trade-off compared to peer group and benchmark
 - iv. Performance in bull and bear markets as denoted by:
 1. Up capture ratio
 2. Down capture ratio
 - b. Each of the Due Diligence Metrics that are identified in this document may also be considered for possible analysis.
4. Further investigation of remaining candidates and parent companies, including interviews. Gather data and review qualitative factors and consider if candidate would be a suitable option to meet the objective. Items to bear in mind when interviewing the firm/manager may include investment team and culture, depth of management, level of research support, management tenure/experience, investment strategy and constraints, decision making process (individual or committee), company solvency, regulatory issues, etc. The analysis typically focuses on the areas where an investment manager is able to add value in meeting the objective, given the state of its existing organization and its ability and resources available to consistently perform. The evaluation considers the people, process, philosophy and process, portfolio, performance and progress:

Due Diligence Process

- a. People – strong leadership, experienced and talented investors, appropriate compensation structure, reputation, succession planning, regulatory record. Important to this element is training, workload and how roles and responsibilities are assigned within the team.
 - b. Philosophy and Process – a solid understanding of the investment philosophy and a well-defined approach (e.g., targeted anomaly or inefficiency, unique source or information or disciplined trading strategy) coupled with the ability to execute based on an understanding of dedicated resources, including research, marketing, information management, compliance, and technology systems. A commitment to the investment philosophy while also being able to generate ideas.
 - c. Portfolios – Determine whether the philosophy matches the reality of the portfolio holdings, and whether the level of risk is appropriate.
 - d. Performance – Understanding how past performance patterns match what can be observed from portfolio trading decisions and whether excess returns can be attributed to specific decisions of investment team members. The objective is to measure the investment manager's skill at consistently outperforming a passive index and its peer group over time.
 - e. Progress – An understanding of the effect of prior decisions and a willingness to evolve and adapt with the markets.
5. Analyze the gathered data utilizing both objective and subjective judgment to determine which candidate(s) best meets the search objective. The subjective analysis can include consideration of more intangible elements for which it may be difficult to document metrics, including passion, perspective, and purpose.
 6. The determination of an appropriate benchmark and peer group are important components to the initial review and selection process and consistent reference to a selected benchmark or peer group also plays a role in ongoing review and monitoring. Once selected, the benchmark and peer group will continue to be referenced until such time as it is determined that a change is warranted and the rationale for the change is documented.
 7. If accessing the manager via a mutual fund vehicle, confirm that the fund(s) selected is daily traded through BOKF's trading platforms and/or mutual fund clearing firms, and determine appropriate share class(es) are available, any minimum investment requirements and whether the fund company allows omnibus or segregated accounts; redemption and other fees should also be considered.
 8. Approval Process - Present recommendation to Committee for approval.

Monitoring Process

The purpose of the monitoring process is to establish a rational and disciplined framework for manager oversight. A primary objective of the monitoring process is to identify on a timely basis any adverse changes in organization, investment process or performance results of the investment advisers used in client accounts. The expectation is that an investment manager will retain the organizational traits and investment process characteristics that served as the basis for the original selection. A successful monitoring program includes ongoing qualitative and quantitative assessments. Managers are reviewed through a number of metrics including informational metrics and performance-related metrics. Adverse events are monitored through research and analysis performed by various data services (Morningstar, Lipper, etc.) and/or information from the investment management firms. We monitor news and information about managers in real-time, through news alerts, industry publications and reviews of performance updates that we receive. All returns are reviewed on a monthly basis. Anomalous figures, if any, are researched. Investment manager responses to performance or organizational issues are expected to be timely, appropriate and consistent.

Due diligence is performed on a calendar quarter schedule. Each of the applicable Due Diligence Metrics set forth below are given a pass/fail rating each quarter, with ratings then aggregated to determine an overall assessment of the strategy each quarter and the results of our monitoring process are summarized in the Strategic Assessment and reviewed with the Committee on a quarterly basis, along with commentary and analysis on any investment managers that are not meeting expectations as outlined through the Due Diligence Metrics listed below.

Courses of Action

The ongoing assessment and the trend of the assessment over time will determine if further research, analysis, and/or review is needed. Depending on the significance of an adverse event, one of the three possible courses of action described below may be taken. The Committee also has the flexibility to use its discretion and reasoned judgment to address unique events and circumstances.

- **No Action**

Where there is no significant adverse impact on the firm or its investment process, the Research and Due Diligence group or the Committee may decide not to take any action (e.g. loss of an investment team member deemed not to be critical to the investment process or minor resolved violations of compliance guidelines).
- **Watch Status**

Watch status does not mean that the investment is no longer an appropriate investment option. It is meant to communicate to internal parties the Committee's level of concern about a particular issue or event, which if left unresolved, could endanger the relationship. When a manager is placed on watch status, the reason for the review is noted and communicated via additional commentary to the Committee. Although a watch status decision is not necessarily reported to the manager, communications regarding areas of concern will increase and continue until the Research and Due Diligence group fully understands the issues. Monitoring will continue until the issues are resolved and the manager is taken off of watch status.

Due Diligence Process

A manager may be placed on Watch status by the Committee if/when anything of material nature occurs or is determined that may have the potential to impact the long-term relative performance of the strategy. Such events or changes would generally be characterized as a deviation from the standard expectations of the strategy, including but not limited to, investment firm financial strength, management change, firm ownership, adherence to governing document, deviation in strategy and/or philosophy, concern regarding compliance with SEC and FINRA rules and regulations, and/or the manager experiences significant underperformance relative to expectations, or there may be anything of material nature that is determined to potentially affect the performance of the strategy. In such cases, the Research and Due Diligence group or Committee may make a subjective decision to place the strategy on Watch status while further analysis and monitoring is completed. The manager may remain on Watch status as long as deemed necessary. Placement of managers on Watch status is made at the discretion of the Committee and is based on the elevated concern of the specific situation.

A recommendation to retain or remove a Watch status manager is expected each quarter. The Committee will consider both subjective (investment quality, nature of investment strategy) and objective factors (performance, risk-adjusted results, tenure) when deciding whether to retain Watch status, take a manager off Watch or remove it from the approved list.

• **Removal from Approved List**

If the Committee ultimately makes the decision to remove a manager, such decision is communicated to your Institutional Advisor who then takes action to remove the manager from your portfolio.

Due Diligence Metrics:

• **All Strategies**

- Expenses: Expenses are the annual expense paid by the investor for their investment in the strategy. For mutual funds, the Prospectus Net Expense Ratio is generally used, which reflects the actual expenses that have been paid by the fund, any voluntary waivers, reductions from brokerage service arrangements and any other expense offset arrangements. For separately managed accounts, the annual management fee of the strategy is used. The expense shown does not reflect additional costs incurred for the buying and selling of portfolio securities within the portfolio. This expense is reflected in the net performance of the strategy. Preference is given to managers with an expense ratio lower than the average of the appropriate peer group. A pass rating is received if the expenses are below the average peer.
- Asset Base/Size: The asset base indicates the amount of assets under management in the specific investment vehicle (mutual fund, separately managed account, collective trust, etc.) of the manager. A pass rating is received if the asset base is greater than \$300 million. For those vehicles below \$300 million, the asset base must be found to be of reasonable size to be viable for client use.
- Manager Tenure: The tenure shows the length of time that a manager has been responsible for the decisions made within the portfolio. We review the tenure for the lead portfolio manager or, if a lead is not identified, the longest tenured portfolio manager on the team. We also keep apprised of any changes among other team members. We generally expect this metric to be greater than 3 years, and preference is given to long-tenured managers.

• **Actively-Managed Strategies**

- Performance versus Peer Group: We generally expect active managers to be competitive versus their peer group, but recognize that larger deviations in returns may occur over short-term periods during a market cycle. We evaluate net performance of active managers ranked against the net performance of the relevant peer group. We generally expect active managers to be competitive versus their peer group, but recognize that larger deviations in returns may occur over the short-term. A pass rating is received if the manager places in the top 75% of the peer group for the 1-year period, and in the top 60% of the peer group (peer rank of 1-60) for the 3- and/or 5- year periods.
- Alpha: Alpha is a measure of performance on a risk-adjusted basis, taking the volatility of a portfolio into consideration and comparing the risk-adjusted performance to a benchmark index. Our calculation takes the alpha of the strategy and ranks it versus the appropriate peer group. A pass rating is received if the manager's alpha places in the top 75% of the peer group (rank of 1-75) over the 1-year period and top 60% of the peer group (rank of 1-60) for other periods. This metric is reviewed for the 1-, 3-, and 5-year periods.
- Performance versus Benchmark: We generally expect active managers to generate a return in-line with or exceeding the benchmark index over a full market cycle, taking into consideration small deviations in returns. Calculated as the 1-year gross return of the strategy minus the 1-year return of the benchmark. A pass rating is received if the net performance of the manager outperforms the benchmark less 50 basis points. This metric is reviewed for the 3- and 5-year periods.
- Information Ratio: Information ratio is a risk-adjusted ratio of portfolio returns exceeding the returns of a benchmark index to the volatility of those excess returns. The higher the ratio, the more consistent the manager's historical returns. We review the Information Ratio of the manager versus the Information Ratio of the peer group. A pass rating is received if the manager places in the top 60% of the peer group (rank of 1-60). This metric is reviewed for the 3- and 5-year periods.
- Sortino Ratio: Sortino Ratio is a risk-adjusted ratio. A large Sortino Ratio indicates the portfolio has historically had lower probability of large loss. We evaluate the Sortino Ratio of the manager versus that of the peer group. A pass rating is received if the manager places in the top 60% of the peer group (rank of 1-60). This metric is reviewed for the 3- and 5-year periods.

Due Diligence Process

- Capture Ratio: We expect an active manager to provide a favorable balance of upside participation and downside protection. A pass rating is received if the capture ratio is 0.95 or greater. This metric is reviewed for the 5-year period.
- Batting Average: Batting average is a statistical metric used to measure a manager's ability to meet or beat an index. A higher batting average reflects greater skill of the manager. We evaluate the batting average of a manager relative to that of the peer group. A pass rating is received if the manager places in the top 60% of the peer group (rank of 1-60). This metric is reviewed for the 5-year period.
- **Passively-Managed Strategies**
 - Performance versus Benchmark: Passive strategies are expected to deliver returns consistent with those of the index, taking into consideration small deviations in returns. This metric is calculated as the 1-year gross return of the strategy minus the 1-year return of the benchmark. A pass rating is received if the strategy outperforms the benchmark return less 50 basis points.
 - Beta: When selecting passive management, an investor is accessing the exposure of the asset category and, therefore, the beta should be close to that of the index. Beta values can be positive or negative. An index has a beta of 1.0. A pass rating is received if the 1-year beta of the strategy is between 0.98 and 1.02.
 - R-Squared: R-squared is a statistical measure that represents the percentage of a security's movements that can be explained by movements in a benchmark index. R-squared values range from 0 to 100, and a value of 100 means that all movements of a portfolio are completely explained by movements in the index. A pass rating is received if the 1-year R-squared is 0.98 or greater.
 - Tracking error: Tracking error is a divergence between the price behavior of a portfolio and the price behavior of a benchmark. Tracking errors are reported as a positive number representing the standard deviation percentage difference. Tracking error for passive strategies should be minimal. A pass rating is received if the 1-year tracking error is between 0 and 1.0.

Notes:

Money market and cash strategies are generally utilized for safety and liquidity purposes and are therefore monitored based on the quality and liquidity of the portfolio; the performance of these strategies versus a peer group or benchmark is of less relevance to our ongoing monitoring.

Disclosures

The information provided in this report was prepared by members of the investment management group, Strategic Investment Advisors (SIA), of BOKF, NA. The information provided herein is intended to be informative and not intended to be advice relative to any investment or portfolio offered through BOK Financial Corporation (NASDAQ:BOKF). The views expressed in this commentary reflect the opinion of the author based on data available as of the date this report was written and is subject to change without notice. This commentary is not a complete analysis of any sector, industry or security. Individual investors should consult with their financial advisor before implementing changes in their portfolio based on opinions expressed. The commentary information is not a solicitation for the investment management services of any BOKF subsidiary.

Investment Policy Statement compliance monitoring is based on the best ability of BOKF to monitor the investments within the portfolio. Pooled investments, such as mutual funds, are monitored based on the designated objective of the fund. Furthermore, BOKF will utilize their interpretation of the guidelines to determine if a portfolio is in compliance with the Investment Policy Statement.

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Some index returns displayed in this report or used in calculation of a policy, allocation or custom benchmark may be preliminary and subject to change.

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