

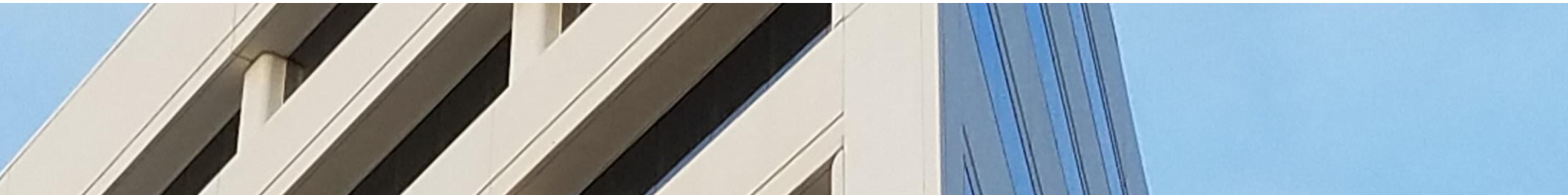


Prepared for



# WILSHIRE ASSOCIATES

Wilshire Consulting



Jacksonville Police & Fire Pension Fund  
Board of Trustees Meeting

January 18, 2019

Wilshire Consulting

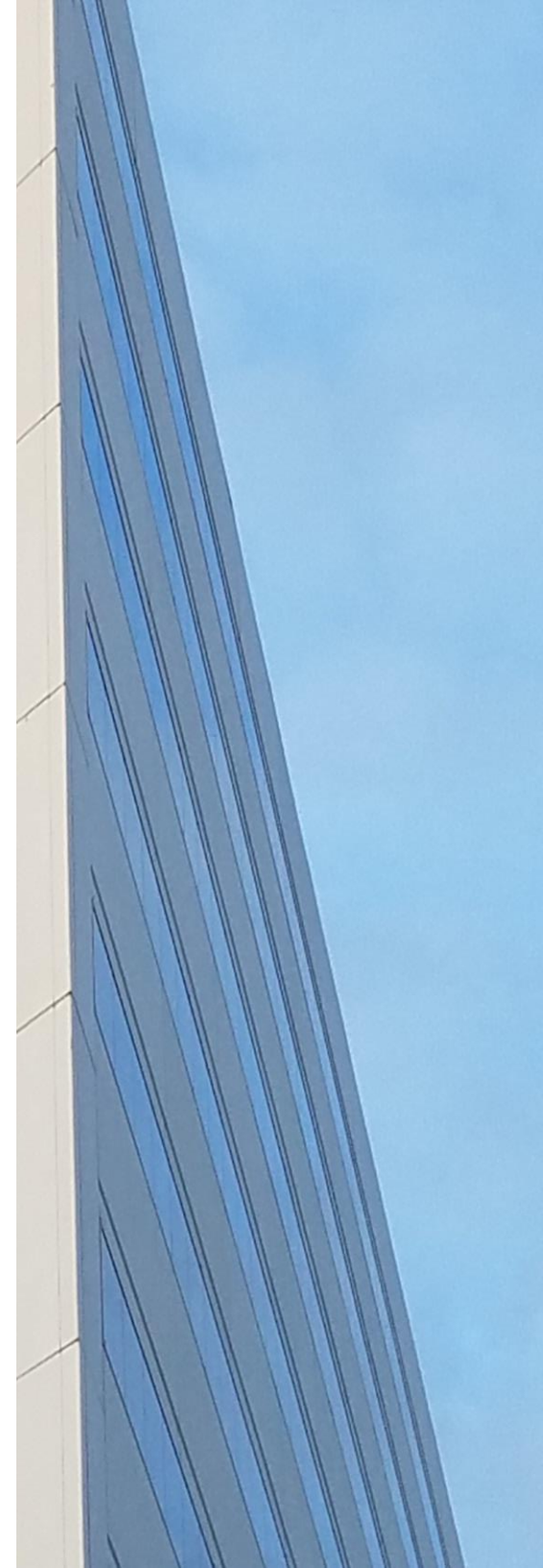
# AGENDA

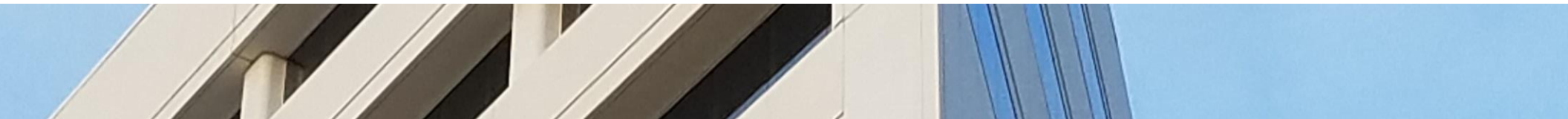
Capital Markets Update

PFPF Performance Update

Advance Payroll Contribution

Asset Allocation Policy Return Expectations





# CAPITAL MARKETS UPDATE

# Weekly Capital Markets Update

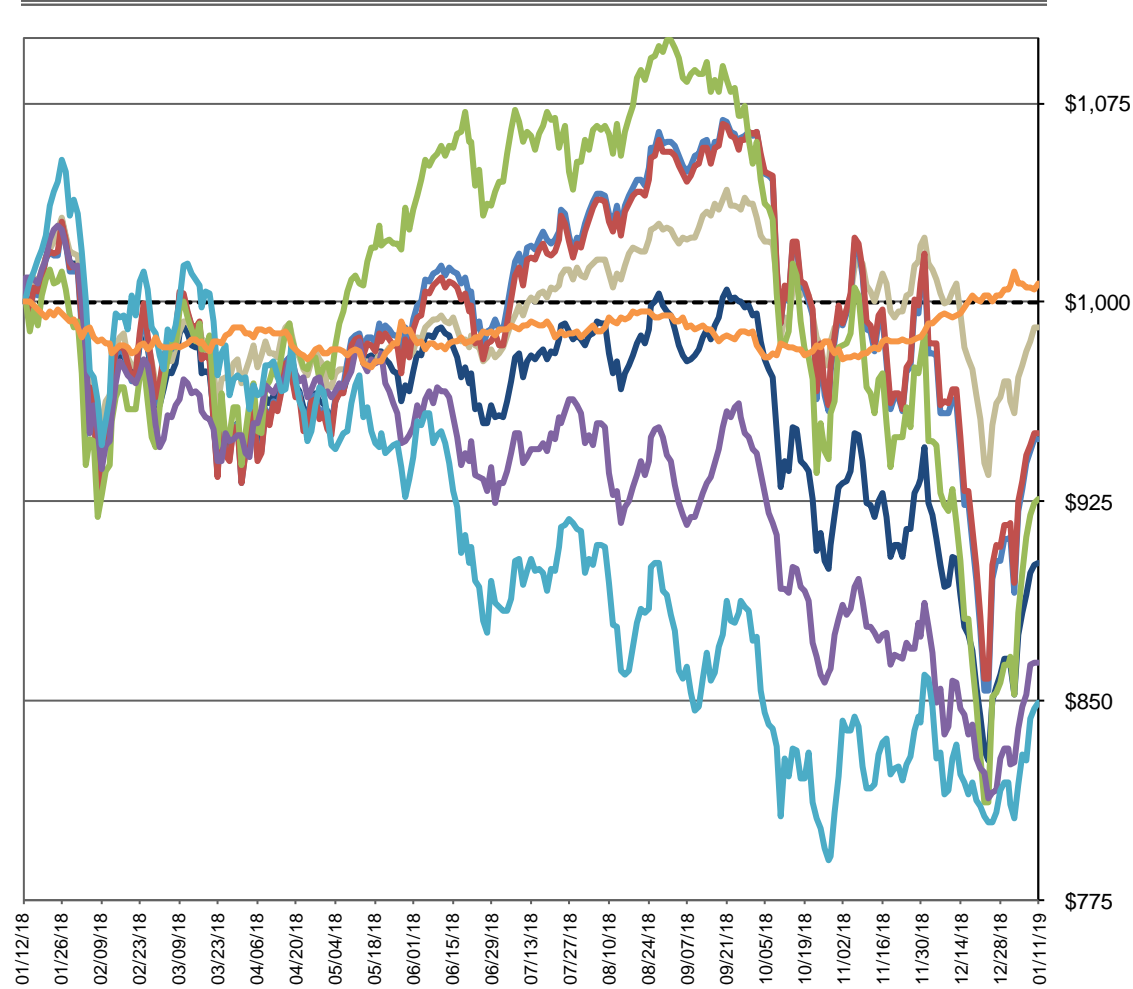
As of January 11, 2019



## Total Return Performance (%)

	1-Week	MTD	QTD	YTD	1-Year
Wilshire 5000	2.94	4.14	4.14	4.14	-4.61
Standard & Poor's 500	2.58	3.63	3.63	3.63	-4.34
Wilshire U.S. Large-Cap	2.76	3.81	3.81	3.81	-4.31
Wilshire U.S. Mid-Cap	4.69	6.08	6.08	6.08	-6.22
Wilshire U.S. Small-Cap	4.89	7.28	7.28	7.28	-7.20
Wilshire U.S. Micro-Cap	3.50	8.52	8.52	8.52	-10.96
Wilshire U.S. Large-Cap Growth	3.37	4.33	4.33	4.33	-3.75
Wilshire U.S. Mid-Cap Growth	5.30	6.58	6.58	6.58	-7.94
Wilshire U.S. Small-Cap Growth	4.94	6.80	6.80	6.80	-7.21
Wilshire U.S. Large-Cap Value	2.20	3.36	3.36	3.36	-5.08
Wilshire U.S. Mid-Cap Value	4.03	5.53	5.53	5.53	-4.51
Wilshire U.S. Small-Cap Value	4.84	7.78	7.78	7.78	-7.27
MSCI All-Country World IMI	3.11	4.15	4.15	4.15	-9.27
MSCI All-Country World Min Vol	1.97	2.10	2.10	2.10	-0.73
MSCI All-Country World x-U.S.	3.23	4.07	4.07	4.07	-13.28
MSCI World x-U.S.	3.05	4.21	4.21	4.21	-12.96
MSCI EAFE	2.89	3.90	3.90	3.90	-13.08
MSCI EAFE Small-Cap	4.02	4.90	4.90	4.90	-16.19
MSCI Emerging Markets	3.76	3.70	3.70	3.70	-14.29
MSCI Frontier Markets	2.10	3.01	3.01	3.01	-17.25
MSCI Europe	2.15	3.74	3.74	3.74	-13.79
MSCI Pacific	4.15	4.11	4.11	4.11	-11.98
Wilshire U.S. RESI	4.90	4.05	4.05	4.05	3.63
Wilshire Global RESI	4.41	4.37	4.37	4.37	1.36
Alerian MLP	2.75	10.23	10.23	10.23	-10.84
Barclays Universal	0.11	0.38	0.38	0.38	0.48
Barclays Aggregate	-0.04	0.18	0.18	0.18	0.66
Barclays U.S. Treasury	-0.26	-0.02	-0.02	-0.02	1.46
Barclays U.S. Treasury Long	-0.98	-0.16	-0.16	-0.16	-0.03
Barclays U.S. TIPS	0.18	0.69	0.69	0.69	0.04
Barclays Govt/Credit	-0.04	0.18	0.18	0.18	0.29
Barclays Corporate	0.33	0.50	0.50	0.50	-1.60
Barclays Long Corporate	0.47	0.87	0.87	0.87	-5.62
Barclays High Yield	1.89	3.13	3.13	3.13	0.30
Barclays MBS	-0.04	0.17	0.17	0.17	1.52
Barclays Global Aggregate x-USD	0.32	0.91	0.91	0.91	-1.42
Barclays Global EMD	0.62	1.17	1.17	1.17	-1.97
S&P/LTSA U.S. Leveraged Loan 100	1.27	3.60	3.60	3.60	2.52

## One-Year Growth of \$1,000



### Relative Performance to the Wilshire 5000 (YTD)

	Value	Core	Growth
Large Cap	-0.78%	-0.33%	+0.19%
Mid Cap	+1.39%	+1.94%	+2.44%
Small Cap	+3.64%	+3.14%	+2.66%
Micro Cap		+4.38%	

Wilshire 5000 Index Return (YTD) = 4.14%

### Hypothetical Values at End of One-Year<sup>1</sup>

MSCI ACWI IMI	\$	901.56
MSCI ACWI Min Vol	\$	990.65
Wilshire 5000	\$	948.18
Wilshire US Large Cap	\$	950.83
Wilshire US Small Cap	\$	925.95
MSCI EAFE	\$	863.93
MSCI Emerging Mkts	\$	849.14
Barclays Aggregate	\$	1,006.91

# Weekly Capital Markets Update

As of January 11, 2019

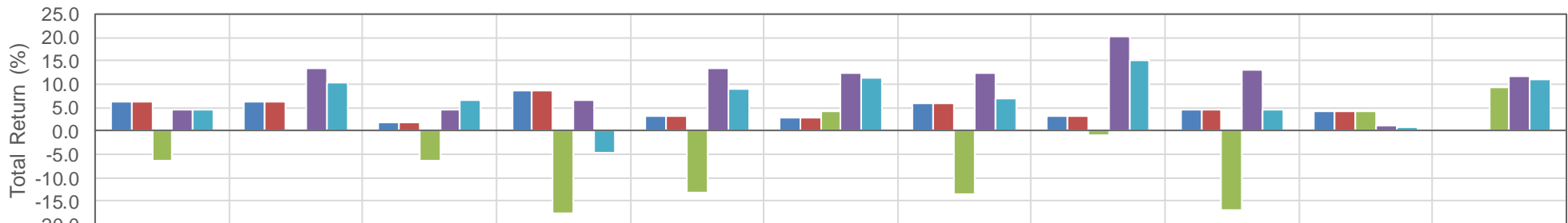


## Wilshire 5000 Total Performance

QTD	YTD	1-Year
4.14	4.14	(4.61)

## Return by GICS Sector

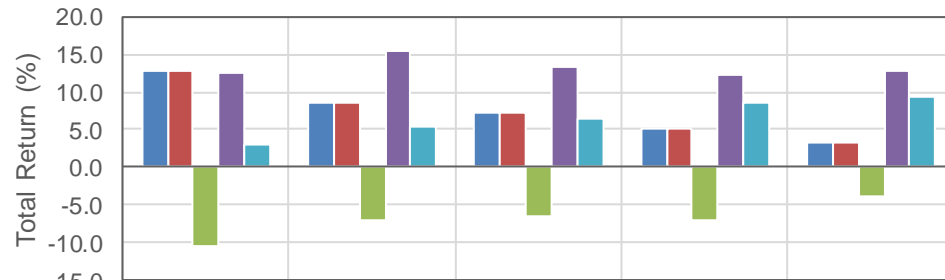
■ Quarter-to-Date ■ Year-to-Date ■ 1-Year ■ 3-Years ■ 5-Years



Segment Weight	9.4%	10.6%	6.8%	5.2%	14.1%	14.3%	10.0%	19.5%	2.6%	4.2%	3.2%
QTD	6.3	6.3	1.8	8.7	3.3	2.8	5.7	3.0	4.4	4.2	0.6
Calendar YTD	6.3	6.3	1.8	8.7	3.3	2.8	5.7	3.0	4.4	4.2	0.6
1 Year	(6.5)	(0.4)	(6.4)	(17.5)	(13.3)	4.3	(13.6)	(1.0)	(16.9)	4.1	9.4
3 Years	4.6	13.5	4.5	6.5	13.2	12.3	12.5	20.2	13.1	1.2	11.6
5 Years	4.4	10.4	6.7	(4.5)	8.9	11.3	7.0	15.2	4.5	0.7	11.0

## Return by Market Cap Size

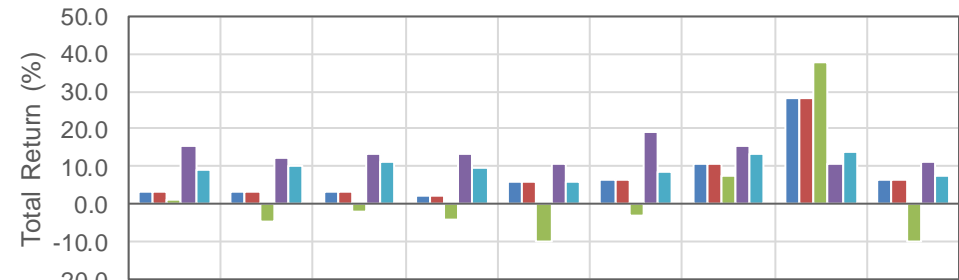
■ Quarter-to-Date ■ Year-to-Date ■ 1-Year ■ 3-Years ■ 5-Years



Segment Weight	0.3%	1.4%	7.9%	20.6%	69.9%
QTD	12.8	8.6	7.3	5.2	3.3
Calendar YTD	12.8	8.6	7.3	5.2	3.3
1 Year	(10.6)	(7.0)	(6.5)	(7.0)	(3.8)
3 Years	12.6	15.4	13.2	12.4	12.8
5 Years	3.0	5.5	6.5	8.5	9.5

## Return by Quality Rating

■ Quarter-to-Date ■ Year-to-Date ■ 1-Year ■ 3-Years ■ 5-Years



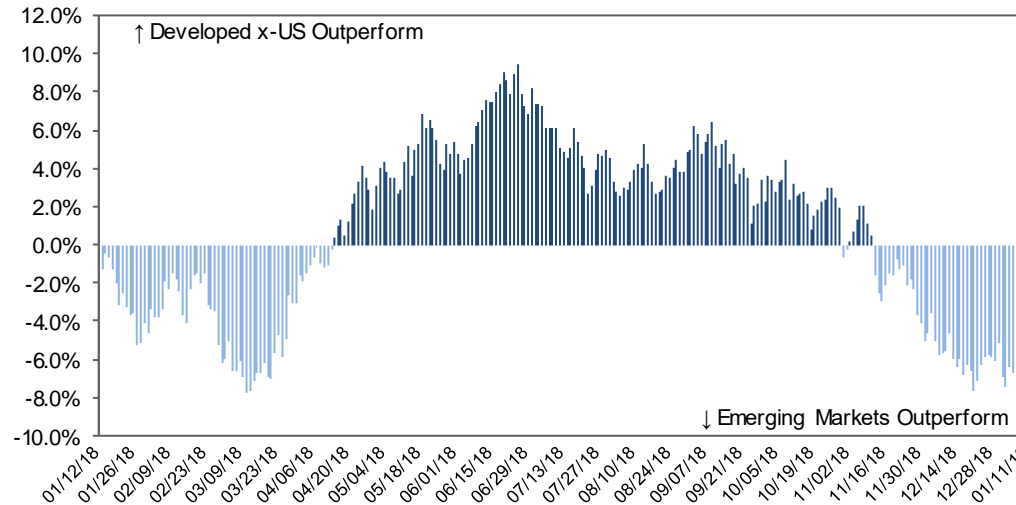
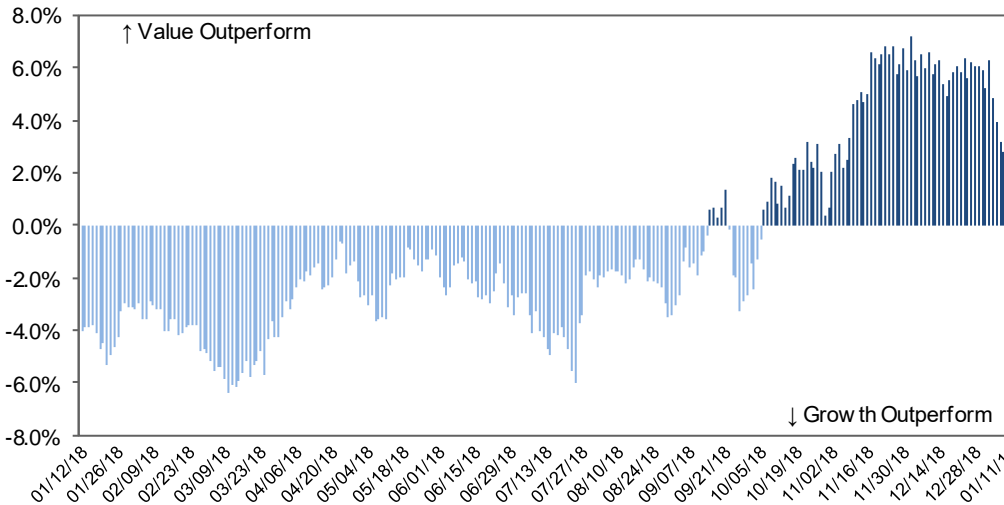
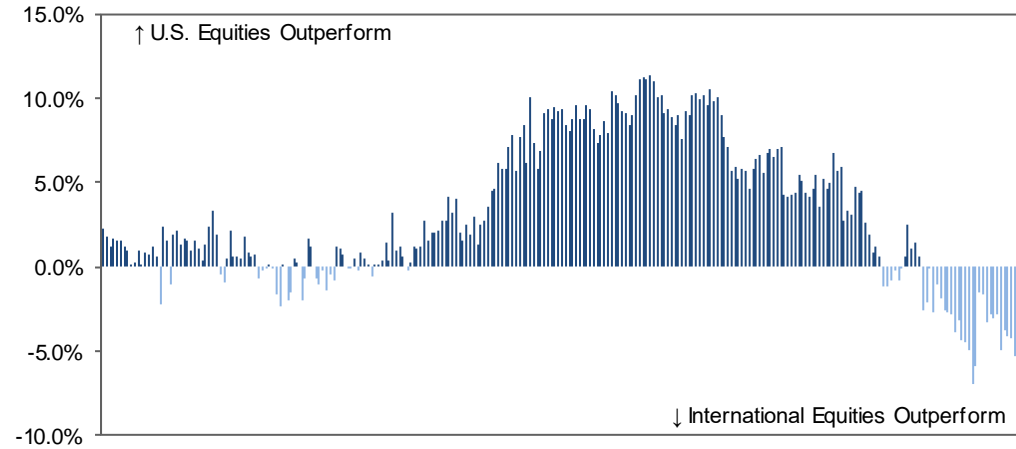
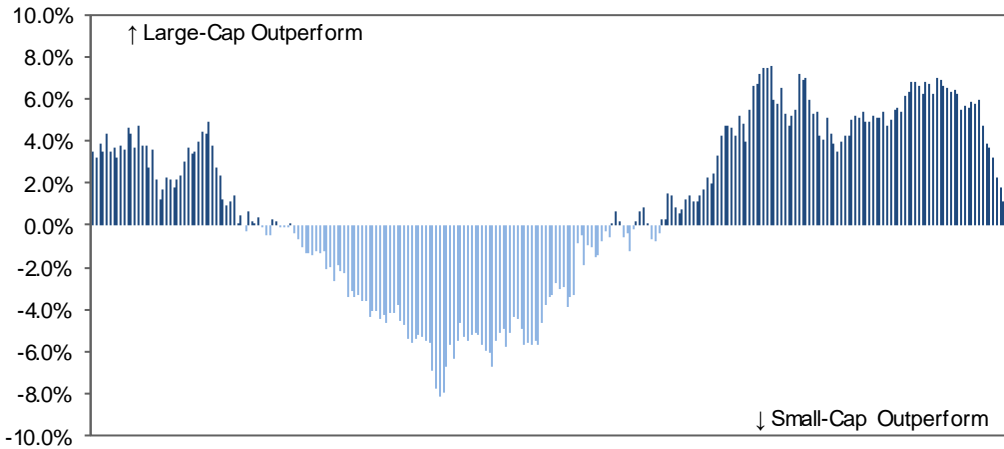
Segment Weight	5.8%	8.8%	15.3%	29.6%	16.3%	9.4%	2.4%	0.0%	12.2%
QTD	3.4	3.2	3.1	2.0	5.7	6.6	10.7	28.4	6.5
Calendar YTD	3.4	3.2	3.1	2.0	5.7	6.6	10.7	28.4	6.5
1 Year	1.2	(4.6)	(1.9)	(4.1)	(9.7)	(2.8)	7.6	37.7	(9.9)
3 Years	15.4	12.4	13.3	13.2	10.9	19.2	15.5	10.9	11.2
5 Years	9.1	10.2	11.1	9.7	6.0	8.9	13.6	13.7	7.4

# Weekly Capital Markets Update

As of January 11, 2019



## Relative Performance – Rolling Three Months Returns



Charts above display the comparative performance of certain style, size, or region groups, based off rolling three-month total returns (calculated daily). Left-hand axis represents the magnitude of outperformance for each particular style, size, or region grouping.

### Representative Market Indexes

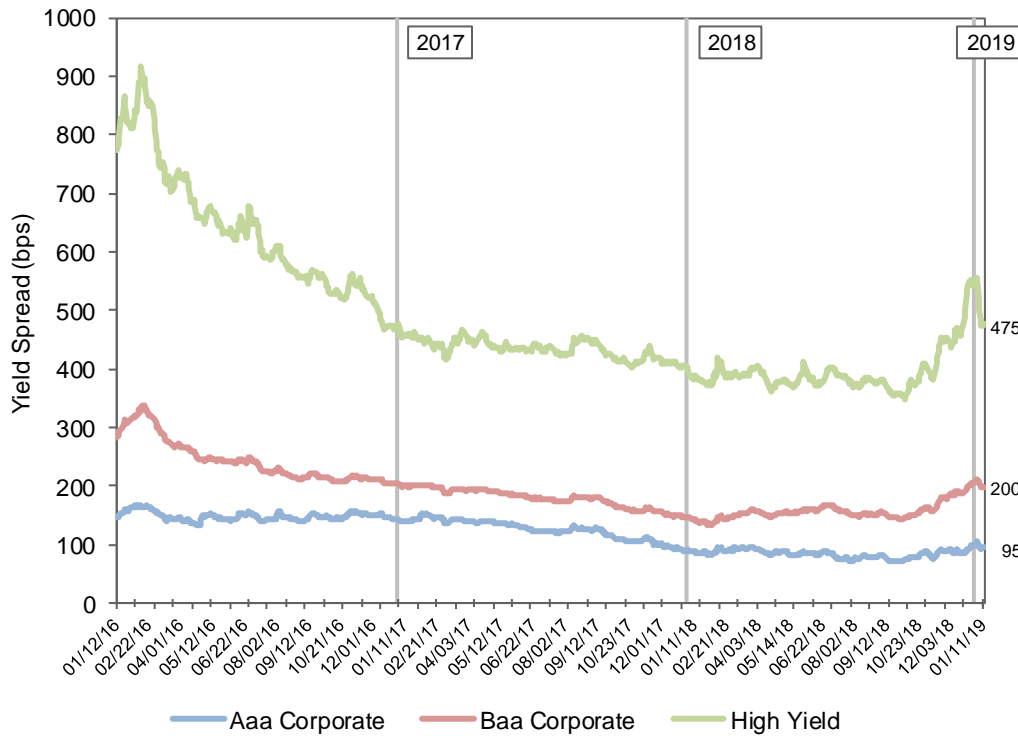
<b>Large Cap:</b>	Wilshire US Large Cap Index	<b>Large Value:</b>	Wilshire US Large Value Index	<b>Domestic (US):</b>	Wilshire 5000 Index	<b>Developed Non-US:</b>	MSCI Developed x-US
<b>Small Cap:</b>	Wilshire US Small Cap Index	<b>Large Growth:</b>	Wilshire US Large Growth Index	<b>International (Non-US):</b>	MSCI ACWI x-US Index	<b>Emerging Markets:</b>	MSCI Emerging Markets

# Weekly Capital Markets Update

As of January 11, 2019

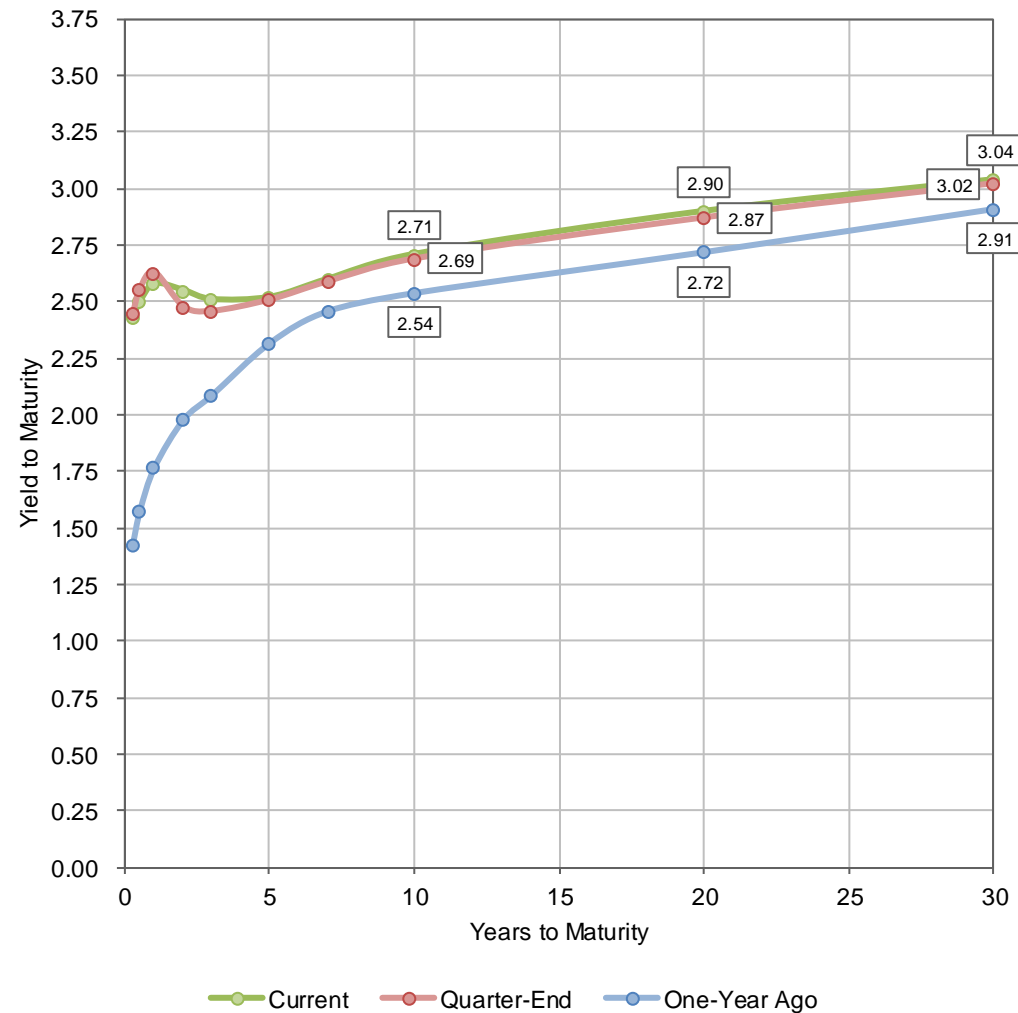


### Yield to Maturity Spread



	Effective Duration	Current Yield	Yield to Maturity	Yield to Worst	Years to Maturity	Average Price
Barclays Universal	5.57	3.54	3.65	3.65	12.08	99.61
Barclays Aggregate	5.75	3.20	3.26	3.26	13.08	100.21
Barclays Gov't/Credit	6.38	3.06	3.24	3.23	8.87	99.90
Barclays Gov't	6.00	2.41	2.64	2.64	7.65	99.90
Barclays Treasuries	6.07	2.40	2.64	2.64	7.73	99.79
Barclays Long Treasuries	16.93	3.16	3.00	3.00	25.09	103.60
Barclays Credit	6.91	3.95	4.07	4.05	10.56	99.91
Barclays Corporate	7.14	4.04	4.17	4.16	10.85	99.52
Barclays High Yield	3.87	6.61	7.14	7.20	5.82	95.31
Merrill Lynch HY Master II	3.93	6.62	7.18	7.26	5.83	95.13
Barclays Global EMD	5.58	5.05	5.16	5.17	8.82	97.53

### U.S. Treasury Yield Curve



	3 Mo	6 Mo	1 Yr	2 Yr	3 Yr	5 Yr	7 Yr	10 Yr	20 Yr	30 Yr
Current (as of 1/11):	2.43	2.50	2.58	2.55	2.51	2.52	2.60	2.71	2.90	3.04
Prior Quarter-End (as of 12/31):	2.45	2.56	2.63	2.48	2.46	2.51	2.59	2.69	2.87	3.02
One Year Ago (as of 1/11/18):	1.43	1.58	1.77	1.98	2.09	2.32	2.46	2.54	2.72	2.91



# Weekly Capital Markets Update

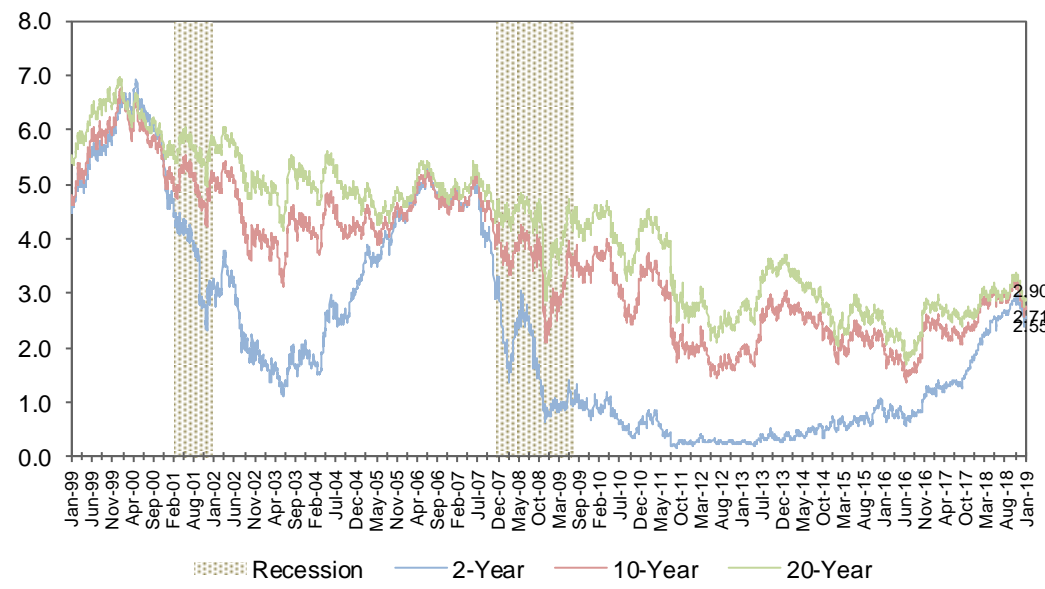
As of January 11, 2019



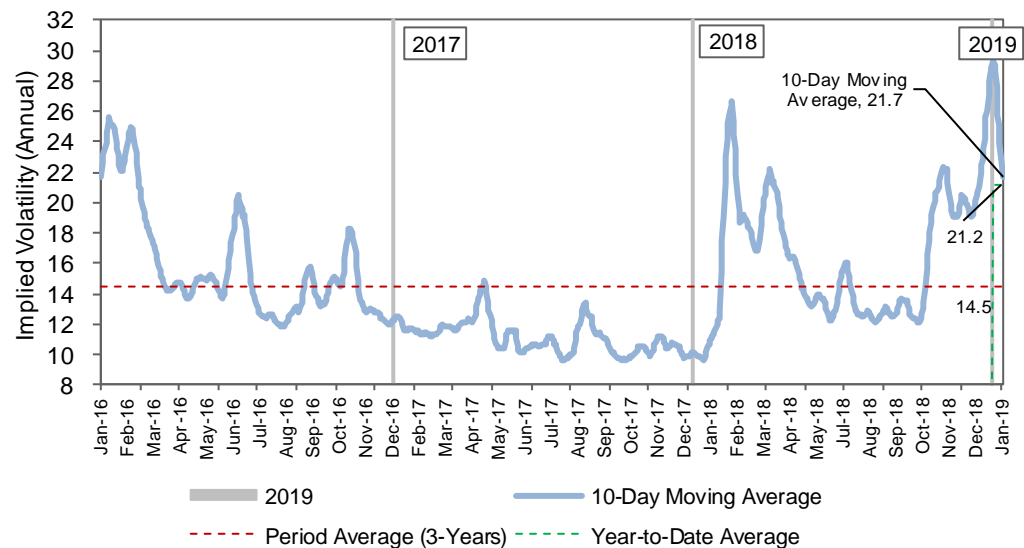
### Treasury Yields - Prior 3 Years



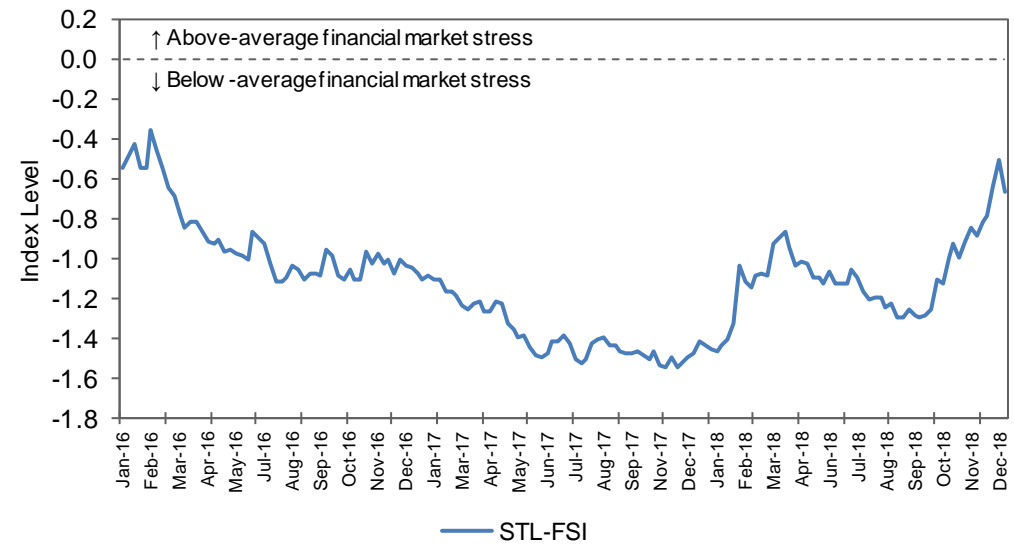
### Treasury Yield - Prior 20 Years



### Equity Volatility (VIX)



### Federal Reserve Bank of St. Louis - Financial Stress Index (FSI)



As of Friday, January 11, the CBOE's Equity Volatility Index ('VIX') is currently at 18.2 (the 10-day moving average for the VIX is 21.7)

Note: The St. Louis Fed created the Financial Stress Index (FSI) in the aftermath of the financial crisis, in 2010. It is designed to measure the degree of financial stress in the markets and is constructed from 18 weekly data series (7 interest rate series, 6 yield spreads, and 5 other indicators). The average value of the index (which begins in late 1993) is designed to be zero, representing normal market conditions. Values below zero represent below-average financial market stress, while values above zero represent above-average stress. (Source <https://fred.stlouisfed.org/series/STLFSI>)

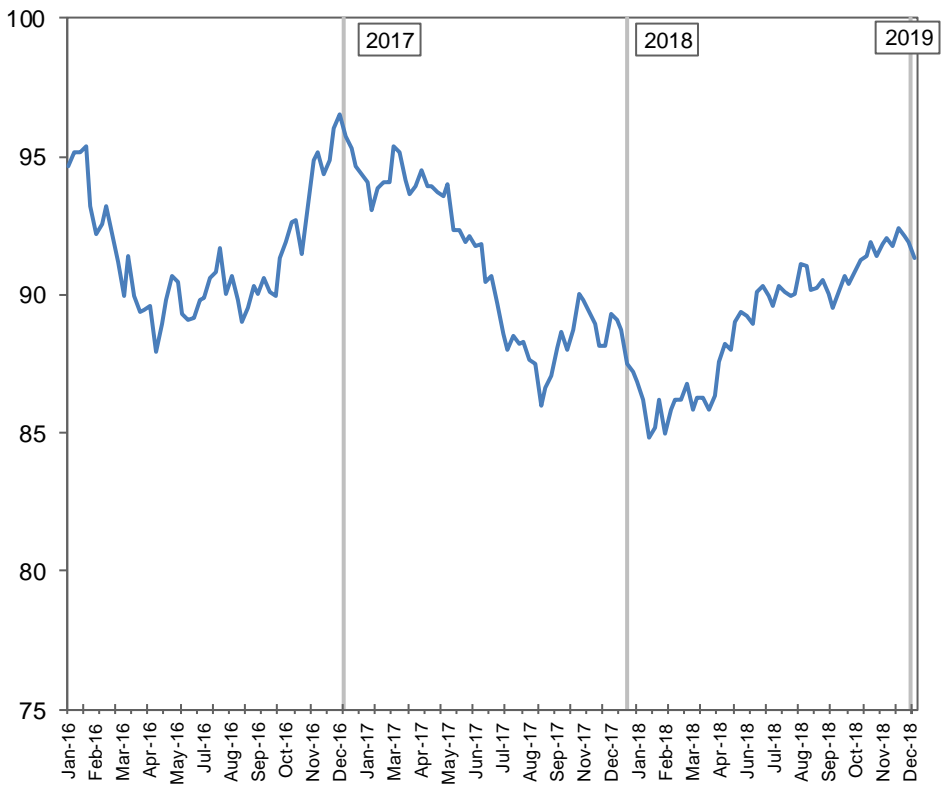


# Weekly Capital Markets Update

## As of January 11, 2019



Trade-Weighted Exchange Index - \$USD vs. Major Currencies



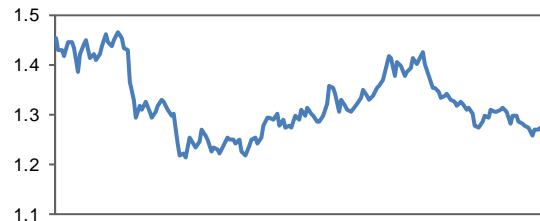
Spot Rates \*

USD/EUR	USD/GBP	USD/AUD	CAD/USD	JPY/USD	SEK/USD	CHF/USD
▼ 1.1477	▼ 1.2823	▼ 0.7201	▼ 1.3256	▲ 108.4100	▼ 8.9229	▼ 0.9829

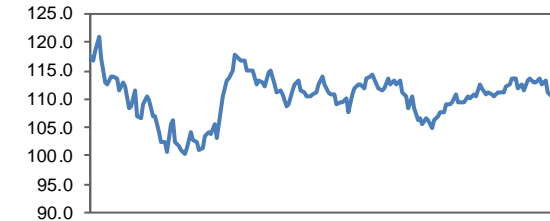
\* Spot Rates as of Friday, 01/11

- Relative to prior week's rate:
- ▲ U.S. Dollar Appreciation
  - No Change
  - ▼ U.S. Dollar Depreciation

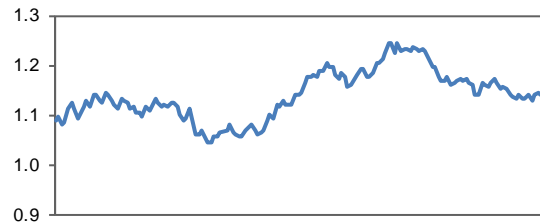
US / UK



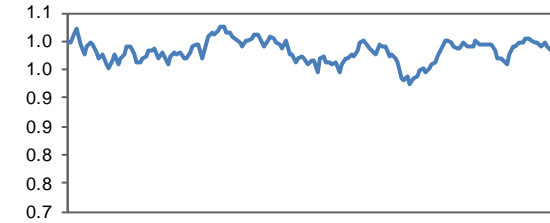
Japan / US



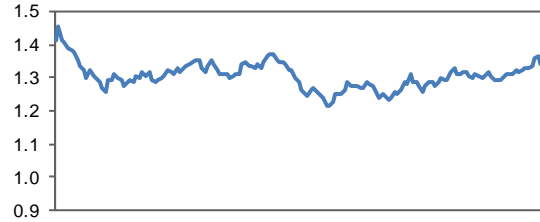
US / Euro



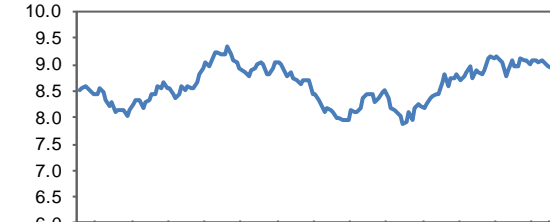
Switzerland (CHF) / US



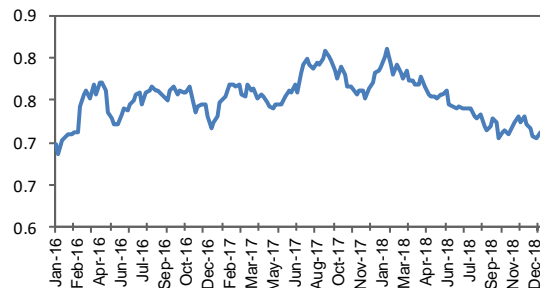
Canada / US



Sweden (SEK) / US



US / Australia



1 The Trade Weighted Exchange Index presented above is a weighted average of the foreign exchange value of the U.S. dollar against a subset of the broad index currencies that circulate widely outside the country of issue. (The Trade Weighted Exchange Index is lagged by 1 week).

At this time, the major currencies index includes the Euro (€), United Kingdom (£), Australia (\$AUD), Canada (\$CAD), Japan (¥), Sweden (kr), and Switzerland (fr).

# Weekly Capital Markets Update

As of January 11, 2019

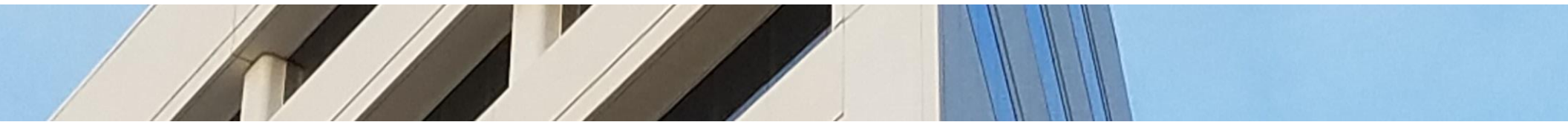


## Index Fundamentals

Index	Growth		Size	Valuation					Risk	
	5-Year EPS	5-Year Dividend	Weighted Avg. Market Cap (\$Million)	Price to Earnings	Price to Book	Current Yield	Return on Equity	Price Residual	Beta	Debt to Equity
Wilshire 5000	8.61	7.02	\$ 178,691	21.30	2.58	2.07	31.54	-0.27	1.02	96.78
Standard & Poor's 500	8.37	7.69	\$ 197,157	20.60	2.75	2.14	33.86	-0.13	1.01	97.62
Wilshire US Large-Cap	8.67	7.38	\$ 197,129	20.70	2.70	2.10	33.17	-0.13	1.01	99.22
Wilshire US Mid-Cap	7.25	4.66	\$ 6,137	21.50	2.13	1.84	17.88	-1.11	1.02	89.00
Wilshire US Small-Cap	7.95	3.48	\$ 2,751	26.90	1.83	1.77	15.56	-1.58	1.09	73.69
Wilshire US Micro-Cap	9.86	1.71	\$ 268	N/A	1.37	1.45	14.44	-3.00	0.89	54.33
Wilshire US Large-Cap Growth	19.68	6.70	\$ 242,180	21.00	3.25	0.98	52.53	0.40	1.10	94.62
Wilshire US Mid-Cap Growth	14.67	3.62	\$ 6,106	22.20	2.71	0.73	25.78	-0.83	1.12	77.72
Wilshire US Small-Cap Growth	16.39	2.94	\$ 3,067	23.00	2.37	0.62	12.98	-1.09	1.19	67.73
Wilshire US Large-Cap Value	-1.07	7.97	\$ 157,083	20.40	2.34	3.10	15.79	-0.59	0.93	103.25
Wilshire US Mid-Cap Value	-0.83	5.81	\$ 6,172	20.80	1.72	3.07	8.88	-1.42	0.91	101.38
Wilshire US Small-Cap Value	-0.33	4.03	\$ 2,432	32.60	1.49	2.93	18.16	-2.08	1.00	79.79
MSCI AC World Index IMI	8.97	8.22	\$ 112,406	18.30	1.96	2.58	23.98	-0.18	1.00	83.15
MSCI AC World Index Min Vol	5.78	6.75	\$ 64,870	18.20	2.25	2.92	23.90	-0.90	0.66	77.06
MSCI AC World Index x-U.S.	9.91	9.65	\$ 58,947	15.30	1.54	3.26	16.49	-0.12	1.00	68.78
MSCI World x-U.S.	9.01	7.84	\$ 53,329	15.60	1.53	3.52	16.38	0.14	1.00	73.66
MSCI EAFE	9.30	7.95	\$ 54,562	15.40	1.51	3.54	16.55	0.64	1.00	73.11
MSCI EAFE Small-Cap	12.00	9.77	\$ 2,409	17.40	1.38	2.83	14.49	-0.37	0.82	58.85
MSCI Emerging Markets	12.67	15.19	\$ 75,052	14.60	1.54	2.53	16.81	-0.92	1.00	54.10
MSCI Frontier Markets	9.25	7.89	\$ 5,844	15.10	1.67	3.95	19.29	-2.57	1.04	49.00
MSCI Europe	5.24	5.82	\$ 65,646	17.40	1.64	3.82	18.77	-0.66	1.00	78.23
MSCI Pacific	16.22	11.58	\$ 36,662	13.00	1.34	3.11	12.94	2.95	1.00	64.43
Wilshire U.S. RESI	10.92	10.63	\$ 17,913	31.80	2.24	4.13	12.43	-3.32	0.61	147.96
Wilshire Global RESI	9.93	8.53	\$ 14,991	19.60	1.53	4.01	11.77	-2.09	0.64	116.80
Alerian MLP	2.20	10.93	\$ 17,751	22.60	1.19	7.96	11.72	3.47	1.19	112.00

### Notes:

- **5-Year EPS:** Annualized; The slope in a log-linear regression where the logarithm of the past six years' EPS are regressed against time (the trailing 12 month EPS values are used). A minimum of three years of positive EPS values are required to produce a value.
- **5-Year Dividend:** Annualized; The slope in a log-linear regression where the logarithm of the past six fiscal years' dividends are regressed against time. [Wilshire sums all of the dividends for each year (determined by ex-date) to produce an annual dividend prior to running the regression.]
- **Price / Earnings:** The ratio of a firm's closing stock price and its trailing 12 month's earnings per share (EPS). Portfolio totals are computed using an Inverse Harmonic Method (stocks with negative P/E ratios are excluded from the portfolio totals).
- **Price / Book:** The ratio of a firm's closing stock price and its fiscal year-end book value per share.
- **Current Yield:** Dividend Yield; Indicated dividend rate divided by current price, expressed as a percent.
- **Return on Equity:** Net Income divided by total common equity outstanding, expressed as a percent.
- **Price Residual:** A price momentum measure which captures the mean return reversion tendencies of stocks. It is a measure of the difference between a security's actual return in the last period and the expected (CAPM) return with respect to its historical beta. Data is computed from 60 months of observations (a minimum of 12 months is required).
- **Beta:** The slope in a regression of a stock's excess return (total return less the risk-free rate) and the excess return of the market. Beta is computed from 60 months of data; however few observations are used for stocks with shorter trading histories (a minimum of 12 months is required). Country of risk is used to determine the appropriate market return and risk free rate to apply to each security.
- **Debt / Equity:** Indicator of financial leverage. Compares assets provided by creditors to assets provided by shareholders. Determined by dividing total debt by total common equity outstanding at the end of fiscal period, expressed in percent.



# PFPF PERFORMANCE UPDATE FISCAL YEAR-TO-DATE

# PERFORMANCE ESTIMATE FISCAL YEAR-TO-DATE

- Estimated through December 31: **-9.1%**
  - U.S. Equity Market: -14.3%
  
- Estimated through Mid-January: **-6.2%**
  - U.S. Equity Market: -10.3%



# ADVANCE PAYROLL CONTRIBUTION

# PAYROLL CONTRIBUTION

## Deployment – Averaging Approach

- To limit the Plan’s exposure to market risk during a period of heightened volatility, Wilshire recommends a dollar cost averaging approach in putting this capital to work
- Equal dollar size investments made over each of the next three months (beginning January 2019) will help smooth the Plan’s entry into the market
  - January 2019: \$38.67 million
  - February 2019: \$38.67 million
  - March 2019: \$38.67 million
  - Cumulative total deployed 1Q19: \$116 million
    - » Avoids end of year thinly traded markets

## Progress Update:

- ✓ Completed: first tranche of buying in January; two-thirds of capital remaining to be deployed (\$77.3 million)

# Jacksonville Police & Fire

Values as of January 15, 2019

(Estimated)

Current Position

1/3 of payroll contribution invested with managers; 2/3 (\$77.3mm) remaining to be deployed during Feb. and Mar. 2019

Pro-Forma Position

	Current Position					Variance		Pro-Forma Position				
	Market Value (Pre-Transaction)	Actual Weight	Target Weight	%	\$	Cash Flow	Market Value (Post-Transaction)	Actual Weight	Target Weight	%	Variance	
<b>U.S. Equity</b>	\$ 776,992,928	39.9%	37.0%	2.9%	\$ 57,270,913	\$ 26,666,667	\$ 803,659,595	41.3%	37.0%	4.3%		
NT S&P 500 Index Fund	\$ 213,346,135	11.0%	11.0%	0.0%	\$ (625,275)	\$ 26,666,667	\$ 240,012,802	12.3%	11.0%	1.3%		
Eagle Capital Management	\$ 203,751,412	10.5%	10.0%	0.5%	\$ 9,231,948	\$ -	\$ 203,751,412	10.5%	10.0%	0.5%		
Loomis Sayles	\$ 104,880,100	5.4%	5.0%	0.4%	\$ 7,620,368	\$ -	\$ 104,880,100	5.4%	5.0%	0.4%		
Sawgrass Asset Management	\$ 115,135,838	5.9%	5.0%	0.9%	\$ 17,876,106	\$ -	\$ 115,135,838	5.9%	5.0%	0.9%		
Pinnacle	\$ 68,824,174	3.5%	3.0%	0.5%	\$ 10,468,335	\$ -	\$ 68,824,174	3.5%	3.0%	0.5%		
Wedge Capital Management	\$ 71,042,102	3.7%	3.0%	0.7%	\$ 12,686,263	\$ -	\$ 71,042,102	3.7%	3.0%	0.7%		
* Brown Investment Advisory	\$ 13,167	0.0%	0.0%	0.0%	\$ 13,167	\$ -	\$ 13,167	0.0%	0.0%	0.0%		
<b>Non-U.S. Equity</b>	\$ 371,211,218	19.1%	20.0%	-0.9%	\$ (17,827,709)	\$ 33,333,333	\$ 404,544,551	20.8%	20.0%	0.8%		
NT EAFE Index Fund	\$ 16,623,357	0.9%	1.0%	-0.1%	\$ (2,828,589)	\$ 33,333,333	\$ 49,956,690	2.6%	1.0%	1.6%		
Silchester	\$ 142,461,046	7.3%	7.0%	0.3%	\$ 6,297,421	\$ -	\$ 142,461,046	7.3%	7.0%	0.3%		
Baillie Gifford	\$ 99,899,864	5.1%	4.0%	1.1%	\$ 22,092,079	\$ -	\$ 99,899,864	5.1%	4.0%	1.1%		
Acadian	\$ 112,226,951	5.8%	6.0%	-0.2%	\$ (4,484,727)	\$ -	\$ 112,226,951	5.8%	6.0%	-0.2%		
TBD - Int'l Dev. Small Cap	\$ -	0.0%	2.0%	-2.0%	\$ (38,903,893)	\$ -	\$ -	0.0%	2.0%	-2.0%		
<b>Fixed Income</b>	\$ 407,922,424	21.0%	19.5%	1.5%	\$ 28,609,470	\$ 17,333,333	\$ 425,255,757	21.9%	19.5%	2.4%		
NT Aggregate Bond Index	\$ 1,843,959	0.1%	1.0%	-0.9%	\$ (17,607,987)	\$ -	\$ 1,843,959	0.1%	1.0%	-0.9%		
Neuberger Berman	\$ 187,901,299	9.7%	9.0%	0.7%	\$ 12,833,782	\$ 10,064,516	\$ 197,965,815	10.2%	9.0%	1.2%		
Loomis, Sayles & Company	\$ 132,178,433	6.8%	6.5%	0.3%	\$ 5,740,782	\$ 7,268,817	\$ 139,447,250	7.2%	6.5%	0.7%		
Thompson Siegel Fixed	\$ 85,998,733	4.4%	3.0%	1.4%	\$ 27,642,894	\$ -	\$ 85,998,733	4.4%	3.0%	1.4%		
<b>Real Estate</b>	\$ 225,152,090	11.6%	10.0%	1.6%	\$ 30,632,626	\$ -	\$ 225,152,090	11.6%	10.0%	1.6%		
JP Morgan	\$ 170,734,419	8.8%	5.0%	3.8%	\$ 73,474,687	\$ -	\$ 170,734,419	8.8%	5.0%	3.8%		
Principal Global Investments	\$ 54,417,671	2.8%	5.0%	-2.2%	\$ (42,842,061)	\$ -	\$ 54,417,671	2.8%	5.0%	-2.2%		
<b>MLPs/Energy</b>	\$ 78,690,418	4.0%	3.0%	1.0%	\$ 20,334,579	\$ -	\$ 78,690,418	4.0%	3.0%	1.0%		
Harvest Fund Advisors	\$ 38,809,494	2.0%	1.5%	0.5%	\$ 9,631,574	\$ -	\$ 38,809,494	2.0%	1.5%	0.5%		
Tortoise Capital Advisors	\$ 39,880,924	2.1%	1.5%	0.6%	\$ 10,703,004	\$ -	\$ 39,880,924	2.1%	1.5%	0.6%		
<b>Private Market Investments</b>	\$ -	0.0%	10.0%	-10.0%	\$ (194,519,464)	\$ -	\$ -	0.0%	10.0%	-10.0%		
<b>Cash</b>	\$ 85,201,811	4.4%	0.5%	3.9%	\$ 75,475,838	\$ (77,333,333)	\$ 7,868,478	0.4%	0.5%	-0.1%		
<b>Total Portfolio</b>	\$ 1,945,194,636	100.0%	100.0%	---	\$ -	\$ -	\$ 1,945,194,636	100.0%	100.0%	---		





# ASSET ALLOCATION POLICY RETURN EXPECTATIONS

# ASSET ALLOCATION: POLICY EXPECTATIONS

Asset Class	Current Policy	Actual Allocation	Difference
U.S. Equity	37.0%	39.9%	2.9%
Non-U.S. Equity	20.0%	19.1%	-0.9%
Private Equity	10.0%	0.0%	-10.0%
<b>Total Growth Assets</b>	<b>67.0%</b>	<b>59.0%</b>	<b>-8.0%</b>
Core Fixed Income	19.5%	20.9%	1.4%
Cash	0.5%	4.4%	3.9%
<b>Total Diversifying Assets</b>	<b>20.0%</b>	<b>25.3%</b>	<b>5.3%</b>
Core Private Real Estate	10.0%	11.6%	1.6%
MLPs	3.0%	4.1%	1.1%
<b>Total Inflation Hedging Assets</b>	<b>13.0%</b>	<b>15.7%</b>	<b>2.7%</b>
<b>Total Assets</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.0%</b>
Expected Return - 10 Years (%)	7.18	6.55	-0.63
Expected Return - 20 Years (%)	7.70	7.09	-0.62
Expected Return - 30 Years (%)	7.88	7.27	-0.61
Standard Deviation of Return (%)	13.15	11.44	-1.70
Sharpe Ratio	0.34	0.34	0.00
Cash Yield	2.81	3.13	0.33
Liquidity Market Level (%)	77.70	86.06	8.36
Liquidity Overall Metric (%)	46.44	53.27	6.83
<b>Contribution to Total Plan Volatility (%):</b>			
<b>Growth Assets:</b>	<b>89.63</b>	<b>85.83</b>	<b>-3.80</b>
<b>Risk Mitigating Assets:</b>	<b>2.47</b>	<b>2.98</b>	<b>0.51</b>
<b>Inflation Sensitive Assets:</b>	<b>7.90</b>	<b>11.19</b>	<b>3.28</b>

- Wilshire calculated the expected risk and return of the PFPF investment policy and current allocation using our capital market assumption suite, recently updated for 2019.
- Expected risk and return, along with other important metrics, are included in the asset allocation table to the left.
- The cash position, currently elevated, is being stepped down towards its target weight as part of the advance payroll contribution implementation plan (expected completion in March 2019).
- The forecast returns (and consequently risk levels) of the actual allocation as invested today are lower than the target investment policy, due to the substantial underweight to private equity.
- Wilshire works with clients to evaluate risks to the Plan across multiple dimensions (an outline of our Risk Lenses framework is included in the appendix).

# ASSET ALLOCATION: ASSUMPTIONS

- Current state of the Wilshire’s forward-looking return, risk, and correlation expectations.
  - Expectations represent a passive investment in the asset class (beta). Do not reflect value added from active management (alpha).
  - Inflation expectations are elevated relative to recent history; returns to cash are increasing with Fed tightening

	Growth			Diversifying		Inflation Hedging		Inflation (CPI)
	U.S. Equity	Non-U.S. Equity	Private Equity	Core Fixed Income	Cash	Core Real Estate	MLPs	
Expected Compound Return (%)	7.00	7.75	10.05	3.85	2.65	5.40	8.40	1.70
Expected Arithmetic Return (%)	8.31	9.33	13.36	3.98	2.66	6.07	10.01	1.72
Expected Risk (%)	17.00	18.80	28.00	5.15	1.25	12.00	19.00	1.75
Cash Yield (%)	2.15	3.25	0.00	4.05	2.65	3.45	7.15	0.00
<b>Correlations:</b>								
U.S. Equity	1.00							
Non-U.S. Equity	0.83	1.00						
Private Equity	0.74	0.67	1.00					
Core Fixed Income	0.28	0.09	0.31	1.00				
Cash	(0.05)	(0.08)	0.00	0.19	1.00			
Core Real Estate	0.55	0.48	0.51	0.17	(0.05)	1.00		
MLPs	0.40	0.39	0.44	0.13	0.00	0.45	1.00	
Inflation	(0.10)	(0.15)	(0.10)	(0.12)	0.10	0.05	0.25	1.00

Wilshire’s asset class return, risk, and correlation assumptions are developed based on 10-year forward-looking expectations, adjusted to incorporate recent trends  
 Source: Wilshire Consulting 2019 Capital Market Assumptions.

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