



WILSHIRE ASSOCIATES

Wilshire Consulting



Jacksonville Police & Fire Pension Fund

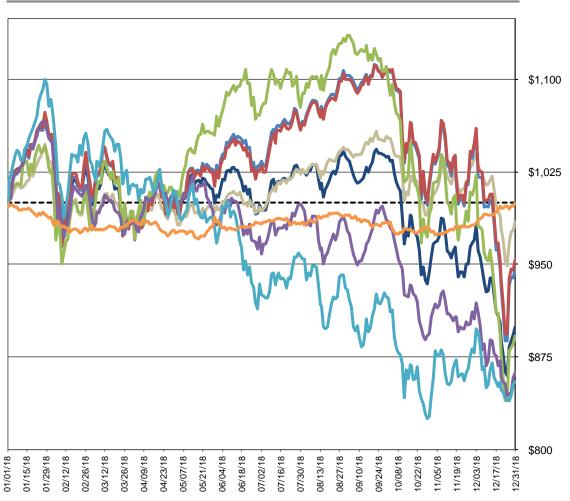
January 11, 2019



CAPITAL MARKETS REVIEW

Total Return Performance (%)

Wilshire 5000 6.71 -9.30 -14.29 -5.27 -5.27 Standard & Por's 500 6.67 -9.03 -13.29 -4.38 -4.38 Wilshire U.S. Large-Cap 6.73 -9.04 -13.29 -4.48 -4.64 Wilshire U.S. Md-Cap 6.45 -10.39 -16.48 -9.35 -9.35 Wilshire U.S. Marc-Cap 5.62 -12.26 -23.50 -15.56 -15.58 Wilshire U.S. Small-Cap Growth 7.23 -12.00 -20.59 -9.71 -9.71 Wilshire U.S. Md-Cap Growth 7.23 -12.00 -20.59 -9.71 -9.71 Wilshire U.S. Small-Cap Value 6.00 -9.01 -10.75 -5.94 -5.94 Wilshire U.S. Small-Cap Value 5.45 -11.66 -18.73 12.04 -12.04 MSCI Al-Country World Min Vol 3.26 -5.00 -6.64 -15.61 -15.61 MSCI EAFE Small-Cap 2.03 -6.43 -12.20 -12.02 -12.02 MSCI EAFE Small-Cap 0.28 1.76 <t< th=""><th></th><th>1-Week</th><th>Dec</th><th>4Q18</th><th>YTD</th><th>1-Year</th><th></th></t<>		1-Week	Dec	4Q18	YTD	1-Year	
Standard & Poor's 500 6.67 -9.03 -13.52 -4.38 -4.38 Wilshire U.S. Large-Cap 6.73 -9.04 -13.69 -4.64 -4.64 Wilshire U.S. Mid-Cap 6.45 -10.39 -16.48 -9.35 -9.35 Wilshire U.S. Iarge-Cap Growth 7.60 -9.07 -16.82 -3.58 -3.58 Wilshire U.S. Matro-Cap Growth 7.22 -10.93 -18.55 -10.47 -10.44 Wilshire U.S. Large-Cap Growth 7.22 -10.39 -18.55 -10.47 -10.47 Wilshire U.S. Large-Cap Value 6.00 -9.01 -10.75 -5.94 -5.94 Wilshire U.S. Small-Cap Value 6.62 -11.66 -18.73 -12.04 -12.04 MSCI All-Country World MI 4.19 -7.24 -13.28 -10.06 -14.69 MSCI Earer 1.03 -4.63 -15.6 -15.6 -15.6 MSCI Earer 1.03 -4.63 -17.30 -14.89 -14.80 MSCI Earer 0.28 -15.2 -17.20<	Wilshire 5000	6.71	-9.30	-14.29	-5.27		
Wilshire U.S. Md-Cap 6.45 -10.39 -16.48 -9.35 -9.35 Wilshire U.S. Small-Cap 6.34 -11.82 -19.67 -10.84 -10.84 Wilshire U.S. Maro-Cap 5.62 -12.26 -23.50 -15.58 15.58 Wilshire U.S. Maro-Cap Growth 7.60 -9.07 -16.82 -3.58 -3.58 Wilshire U.S. Small-Cap Growth 7.23 -12.00 -20.59 -9.71 -9.71 -9.71 Wilshire U.S. Small-Cap Value 6.00 -9.01 -10.75 -5.94 -5.94 Wilshire U.S. Small-Cap Value 5.62 -12.24 -13.28 -10.08 -10.07 MSCI All-Country World MI 4.19 -7.24 -13.28 -10.08 -10.08 MSCI All-Country World X-U.S. 1.25 -5.17 -12.276 -14.09 -14.09 MSCI EAFE Small-Cap 2.03 -6.44 -16.20 -17.20 -17.20 -17.20 MSCI EAFE Small-Cap 2.03 -6.34 -6.09 -5.34 -5.34 -5.34	Standard & Poor's 500	6.67	-9.03	-13.52	-4.38	-4.38	
Wilshire U.S. Md-Cap 6.45 -10.39 -16.48 -9.35 -9.35 Wilshire U.S. Small-Cap 6.34 -11.82 -19.67 -10.84 -10.84 Wilshire U.S. Mero-Cap 5.62 -12.26 -23.50 -15.58 15.58 Wilshire U.S. Mcro-Cap 5.62 -12.26 -23.50 -15.58 15.58 Wilshire U.S. Small-Cap Growth 7.20 -10.93 -18.55 -10.47 -10.47 Wilshire U.S. Small-Cap Growth 7.23 -12.04 -12.04 -12.04 -12.04 Wilshire U.S. Small-Cap Value 6.00 -9.01 -10.75 -5.94 -5.94 Wilshire U.S. Small-Cap Value 5.62 -9.83 -11.46 -14.20 -16.04 MSCI Al-Country World MI 4.19 7.24 -13.28 10.08 10.08 MSCI World x-U.S. 1.25 -5.17 -12.78 -14.09 14.09 MSCI Pacific 1.24 -5.14 -16.20 -12.02 12.02 Wilshire U.S. RESI 4.08 -14.86	Wilshire U.S. Large-Cap	6.73	-9.04	-13.69	-4.64	-4.64	
Wilshire U.S. Small-Cap 6.34 -11.82 -19.67 10.84 -10.84 Wilshire U.S. Micro-Cap 5.62 -12.26 -23.50 -15.58 -15.58 Wilshire U.S. Large-Cap Growth 7.20 -10.03 -18.55 -10.47 -10.47 Wilshire U.S. Large-Cap Value 6.00 -9.01 -10.75 -5.94 -5.94 -5.94 -5.94 Wilshire U.S. Small-Cap Value 5.62 -9.83 -11.46 -18.73 -12.04 -12.04 Wilshire U.S. Small-Cap Value 5.62 -5.00 -6.64 -1.56 -1.56 MSCI All-Country World MIM 1.33 -4.53 -11.46 -14.20 -14.20 MSCI Prontier Markets 0.99 -2.33 -6.44 -15.64 -15.64 MSCI EAFE 1.03 -4.85 -16.06 1.789 -17.89 MSCI EAFE 1.03 -4.85 -16.06 -18.64 -16.06 MSCI EAFE 0.99 -2.93 -4.33 -16.44 -16.05 MSCI Frontier Markets	0	6.45	-10.39	-16.48	-9.35	-9.35	
Wilshire U.S. Mcro-Cap 5.62 -12.26 -23.50 -15.58 -15.58 Wilshire U.S. Large-Cap Growth 7.60 -9.07 -16.82 -3.58 -3.58 Wilshire U.S. Md-Cap Growth 7.22 -10.33 -16.85 -10.47 Wilshire U.S. Md-Cap Value 6.00 -9.01 -10.75 -5.94 -5.94 Wilshire U.S. Md-Cap Value 5.62 -9.83 -14.16 -8.47 -7.24 Wilshire U.S. Md-Cap Value 5.62 -13.28 -10.08 -10.08 MSCI Al-Country World IM 4.19 -7.24 -13.29 -10.08 -10.68 MSCI Al-Country World IM 4.19 -7.24 -13.29 -13.79 -13.79 MSCI Al-Country World x-U.S. 1.25 -5.17 -12.78 -14.09 -14.09 MSCI EAFE 1.03 -4.65 -12.64 -13.79 -13.79 MSCI EAFE 1.03 -4.65 -12.64 -13.79 -14.86 MSCI Earorging Markets 0.99 -2.93 -4.33 -16.41 <	· · · · · · · · · · · · · · · · · · ·	6.34	-11.82	-19.67	-10.84	-10.84	
Wilshire U.S. Mid-Cap Growth 7.22 -10.33 -18.55 -10.47 -10.47 Wilshire U.S. Small-Cap Growth 7.23 -12.00 -20.59 -9.71 -9.71 -9.71 Wilshire U.S. Mid-Cap Value 6.00 -9.01 -10.75 -5.94 -5.94 Wilshire U.S. Mid-Cap Value 5.62 -9.83 -14.16 -8.47 -8.47 MSCI All-Country World Mil 4.19 -7.24 -13.28 -10.08 -10.08 MSCI All-Country World Mil 4.19 -7.24 -13.28 -10.08 -10.65 MSCI Korte 1.33 -4.53 -11.46 -14.20 -14.20 MSCI EAFE 1.03 -4.85 -12.54 -13.79 -13.79 MSCI EAFE 1.03 -4.85 -12.20 -12.02 -12.02 -12.02 MSCI Earronier Markets 1.55 -2.66 -7.47 -14.86 -14.86 -14.80 MSCI Earronier Markets 1.55 -5.64 -7.47 -12.82 -12.02 -12.02 -12.02	Wilshire U.S. Micro-Cap	5.62	-12.26	-23.50	-15.58	-15.58	
Witshire U.S. Md-Cap Growth 7.22 -10.93 -18.55 -10.47 -10.47 Witshire U.S. Small-Cap Growth 7.23 -12.00 -20.59 -9.71 -9.71 Witshire U.S. Md-Cap Growth 7.23 -12.00 -20.59 -9.71 -9.71 Witshire U.S. Md-Cap Value 6.00 -0.01 +10.75 -5.94 -5.94 Witshire U.S. Small-Cap Value 5.62 -9.83 -14.16 -8.47 -8.47 Witshire U.S. Small-Cap Value 5.62 -9.83 -14.16 -16.06 -10.08 MSCI All-Country World Mil 4.19 -7.24 -13.20 -10.08 -10.09 MSCI BAFE 1.03 -4.65 -11.56 -1.56 -1.56 MSCI EAFE 1.03 -4.65 -7.47 -14.86 -14.58 MSCI EAFE 1.03 -4.65 -7.47 -14.86 -14.02 MSCI Earce Small-Cap 0.88 -4.62 -12.02 -12.02 -12.02 MSCI Earce Small-Cap 0.28 1.56 1.71 -0.225 -0.25 Barclays Universal 0.28 1.56	Wilshire U.S. Large-Cap Growth	7.60	-9.07	-16.82	-3.58	-3.58	
Wilshire U.S. Large-Cap Value 6.00 -9.01 -10.75 -5.94 -5.94 Wilshire U.S. Mid-Cap Value 5.62 -9.83 -14.16 -8.47 -8.47 -8.47 Wilshire U.S. Small-Cap Value 5.45 -11.66 -18.73 -12.04 -12.04 MSCI All-Country World IMI 4.19 -7.24 -13.28 -10.08 -10.08 MSCI All-Country World x-U.S. 1.33 -4.53 -11.46 -14.20 -14.20 MSCI All-Country World x-U.S. 1.25 -5.17 -12.78 -14.09 -14.00 MSCI EAFE 1.03 -4.85 -12.64 -13.79 -13.79 MSCI EAFE 1.03 -4.85 -16.05 -17.89 -17.89 MSCI Fornite Markets 1.55 -2.66 -7.47 -14.58 -14.86 MSCI Pacific 1.24 -5.14 -12.20 -12.02 -12.02 Wilshire Global RESI 2.66 -6.14 -6.09 -5.34 -5.34 Alerian MLP 4.33 -9.36 -17.30 -12.42 -12.42 Barclays U.S. Treasury Long -0.1		7.22	-10.93	-18.55	-10.47	-10.47	
Wilshire U.S. Mid-Cap Value 5.62 -9.83 -14.16 -8.47 -8.47 Wilshire U.S. Small-Cap Value 5.45 -11.66 -18.73 -12.04 -12.04 MSCI All-Country World Mn 4.19 -7.24 -13.28 -10.08 -10.08 MSCI All-Country World Mn Vol 3.26 -5.00 -6.64 -1.56 MSCI All-Country World x-U.S. 1.23 -4.53 -11.46 -14.20 -14.20 MSCI All-Country World x-U.S. 1.25 -5.17 -12.78 -13.79 -13.79 MSCI EAFE 1.03 -4.85 -12.54 -13.79 -17.89 -17.89 -17.89 MSCI Emerging Markets 1.55 -2.66 -7.47 -14.58 -14.58 -14.58 MSCI Pacific 1.24 -5.14 -12.20 -12.02 -12.02 -12.02 Wilshire Global RESI 2.66 -6.14 -6.09 -5.34 -5.30 -6.25 -0.25 Barclays U.S. Treasury 0.28 1.86 1.17 -0.25 -0.25 -2.57 0.66 0.86 Barclays U.S. Treasury Long 0	Wilshire U.S. Small-Cap Growth	7.23	-12.00	-20.59	-9.71	-9.71	
Wilshire U.S. Mid-Cap Value 5.62 -9.83 -14.16 -8.47 -8.47 Wilshire U.S. Small-Cap Value 5.46 -11.66 -18.73 -12.04 -12.04 MSCI All-Country World IMI 4.19 -7.24 -13.28 -10.08 -10.66 -10.56 MSCI All-Country World X-U.S. 1.33 -4.53 -11.46 -14.20 -14.20 MSCI All-Country World x-U.S. 1.25 -5.17 -12.78 -14.09 -14.20 MSCI EAFE 1.03 -4.85 -12.54 -13.79 -13.79 MSCI EAFE 1.03 -4.85 -12.54 -13.79 -13.79 MSCI EAFE 1.03 -4.85 -16.05 -17.89 -17.89 MSCI Pacific 1.24 -5.14 -12.20 -12.02 -12.02 Wilshire U.S. RESI 4.04 -8.35 -6.98 -4.80 -4.80 MSCI Pacific 1.24 -5.14 -12.20 -12.02 -12.02 Wilshire Global RESI 0.26 1.36 1.17	Wilshire U.S. Large-Cap Value	6.00	-9.01	-10.75	-5.94	-5.94	
MSCI All-Country World IMI 4.19 -7.24 -13.28 -10.08 -10.08 MSCI All-Country World Mn Vol 3.26 -5.00 -6.64 -1.56 MSCI All-Country World X-U.S. 1.33 -4.53 -11.46 -14.20 MSCI World X-U.S. 1.25 -5.17 -12.78 -14.09 -14.20 MSCI EAFE 1.03 -4.85 -12.54 -13.79 -13.79 MSCI EAFE 1.03 -4.85 -12.54 -13.79 -13.88 MSCI EAFE 1.03 -4.85 -12.54 -14.58 -14.58 MSCI Earreging Markets 1.55 -2.66 -7.47 -14.86 -14.86 MSCI Pacific 1.24 -5.14 -12.20 -12.02 -12.02 Wilshire U.S. RESI 4.04 -8.35 -6.98 -4.80 -4.80 Wilshire Global RESI 2.66 -14.72 -12.62 -0.25 -0.25 Barclays U.S. Treasury 0.28 2.15 2.57 0.86 0.86 Barclays U.S. Treasury Long -0.15 5.47 4.19 -1.84 -1.84		5.62	-9.83	-14.16	-8.47	-8.47	
MSCI All-Country World Min Vol 3.26 -5.00 -6.64 -1.56 -1.56 MSCI All-Country World x-U.S. 1.33 -4.53 -11.46 -14.20 -14.20 MSCI EAFE 1.03 -4.53 -11.46 -14.20 -14.20 MSCI EAFE 1.03 -4.65 -15.77 -12.78 -14.09 -13.79 MSCI EAFE 1.03 -4.65 -16.05 -17.89 -17.89 -17.89 MSCI EAFE Small-Cap 0.08 -4.62 -12.20 -12.02 -12.02 -12.02 Wishire U.S. RESI 4.04 -8.35 -6.98 -4.80 -4.80 Misci Pacific 1.24 -5.14 -12.02 -12.02 -12.42 Wilshire U.S. RESI 4.04 -8.35 -6.98 -4.80 -4.80 Misci Pacific 1.24 -5.34 -5.34 -5.34 -5.34 Alerian MLP 4.93 -9.36 -17.30 -12.26 -0.25 Barclays LOS. Treasury Long -0.15 5.47 4.1	Wilshire U.S. Small-Cap Value	5.45	-11.66	-18.73	-12.04	-12.04	
MSCI All-Country World x-U.S. 1.33 -4.53 -11.46 -14.20 -14.20 MSCI World x-U.S. 1.25 -5.17 -12.78 -14.09 -14.09 MSCI EAFE 1.03 -4.85 -12.54 -13.79 -13.79 MSCI EAFE Small-Cap 2.03 -6.45 -16.05 -17.89 -17.89 MSCI Emerging Markets 1.55 -2.66 -7.47 -14.58 -14.58 MSCI Europe 0.88 -4.62 -12.72 -14.86 -14.86 MSCI Pacific 1.24 -5.14 -12.02 -12.02 -12.02 Wilshire Global RESI 4.04 -8.35 -6.98 -4.80 -4.80 Aerian MLP 4.93 -9.36 -17.30 -12.42 -12.42 Barclays U.S. Treasury Long 0.15 5.47 4.19 -1.84 -1.84 Barclays U.S. Treasury Long 0.15 5.47 4.19 -1.26 -1.26 Barclays U.S. Tresaury Long 0.14 0.55 -0.42 -1.26 -1.26 Barclays MBS 0.45 1.84 1.46 -0.42	MSCI All-Country World IMI	4.19	-7.24	-13.28	-10.08	-10.08	
MSCI World x-U.S. 1.25 -5.17 -12.78 -14.09 -14.09 MSCI EAFE 1.03 -4.85 -12.54 -13.79 -13.79 MSCI EAFE 1.03 -4.85 -12.54 -13.79 -17.89 MSCI EAFE Small-Cap 2.03 -6.45 -16.05 -17.89 -17.89 MSCI Frontier Markets 0.99 -2.93 -4.33 -16.41 -16.41 MSCI Pacific 1.24 -5.14 -12.02 -12.02 -12.02 Wilshire U.S. RESI 4.04 -8.35 -6.98 -4.80 -4.80 Wilshire Global RESI 2.66 -17.70 -12.42 -12.42 -12.42 Barclays U.S. Treasury 0.28 1.84 1.64 0.01 0.01 Barclays U.S. Treasury 0.28 2.15 2.57 0.86 0.86 Barclays U.S. Treasury 0.28 1.46 -0.42 -0.42 -0.42 Barclays Long Corporate 0.08 1.47 -0.18 -2.51 -2.51 Barclays MBS 0.45 1.81 2.08 0.99 0.99	MSCI All-Country World Min Vol	3.26	-5.00	-6.64	-1.56	-1.56	
MSCI EAFE 1.03 -4.85 -12.54 -13.79 -13.79 -13.79 MSCI EAFE Small-Cap 2.03 -6.45 -16.05 -17.89 -17.89 -17.89 MSCI Emerging Markets 1.55 -2.66 -7.47 -14.58 -14.58 MSCI Frontier Markets 0.99 -2.93 -4.33 -16.41 -16.41 MSCI Pacific 1.24 -5.14 -12.20 -12.02 -12.02 Wilshire U.S. RESI 4.04 -8.35 -6.98 -4.80 -4.80 Wilshire Global RESI 2.66 -6.14 -6.09 -5.34 -5.34 Aerian MLP 4.93 -9.36 -17.30 -12.42 -12.42 Barclays U.S. Treasury 0.28 1.56 1.17 -0.25 -0.25 Barclays U.S. Treasury Long -0.15 5.47 4.19 -1.84 -1.84 Barclays Long Corporate 0.08 1.47 -0.18 -2.51 -2.51 Barclays Govt/Credit 0.20 1.86 1.46 -0.42 -0.42 Barclays High Yield 0.59 -2.14	MSCI All-Country World x-U.S.	1.33	-4.53	-11.46	-14.20	-14.20	
MSCI EAFE Small-Cap 2.03 -6.45 -16.05 -17.89 -17.89 MSCI Emerging Markets 1.55 -2.66 -7.47 -14.58 -14.58 MSCI Energing Markets 0.99 -2.93 -4.33 -16.41 -16.41 MSCI Europe 0.88 -4.62 -12.72 -14.86 -14.86 MSCI Pacific 1.24 -5.14 -12.02 -12.02 -12.02 Wilshire U.S. RESI 4.04 -8.35 -6.09 -5.34 -4.80 -4.80 Alerian MLP 4.93 -9.36 -17.30 -12.42 -12.42 -12.42 Barclays U.S. Treasury 0.28 1.56 1.17 -0.25 -0.25 Barclays U.S. Treasury Long -0.15 5.47 4.19 -1.84 -1.84 Barclays U.S. Treasury Long -0.15 5.47 4.19 -1.84 -1.84 Barclays Govt/Credit 0.020 1.86 1.46 -0.42 -0.42 Barclays Long Corporate -0.34 2.42 -1.80 <td>MSCI World x-U.S.</td> <td>1.25</td> <td>-5.17</td> <td>-12.78</td> <td>-14.09</td> <td>-14.09</td> <td></td>	MSCI World x-U.S.	1.25	-5.17	-12.78	-14.09	-14.09	
MSCI Emerging Markets 1.55 -2.66 -7.47 -14.58 -14.58 MSCI Frontier Markets 0.99 -2.93 -4.33 -16.41 -16.41 MSCI Europe 0.88 -4.62 -12.72 -14.86 -14.86 MSCI Pacific 1.24 -5.14 -12.02 -12.02 Wilshire U.S. RESI 4.04 -8.35 -6.98 -4.80 -4.80 Wilshire Global RESI 2.66 -6.14 -6.09 -5.34 -5.34 Alerian MLP 4.93 -9.36 -17.30 -12.42 -12.42 Barclays U.S. Treasury 0.28 1.84 1.64 0.01 0.01 Barclays U.S. Treasury Long -0.15 5.47 4.19 -1.84 -1.84 Barclays U.S. Treasury Long -0.15 5.47 4.19 -1.84 -1.84 Barclays Govt/Credit 0.20 1.86 1.46 -0.42 -0.42 Barclays Long Corporate 0.08 1.47 -0.18 -2.51 -2.51 Barclays Long Corporate 0.08 1.47 -0.18 -2.208 -2.08	MSCIEAFE	1.03	-4.85	-12.54	-13.79	-13.79	1 I ^
MSCI Frontier Markets 0.99 -2.93 -4.33 -16.41 -16.41 MSCI Europe 0.88 -4.62 -12.72 -14.86 -14.86 MSCI Pacific 1.24 -5.14 -12.20 -12.02 -12.02 Wilshire U.S. RESI 4.04 -8.35 -6.98 -4.80 -4.80 Wilshire Global RESI 2.66 -6.14 -6.09 -5.34 -5.34 Alerian MLP 4.93 -9.36 -17.30 -12.42 -12.42 Barclays Universal 0.28 1.84 1.64 0.01 0.01 Barclays U.S. Treasury 0.28 2.15 2.57 0.86 0.86 Barclays U.S. Treasury Long -0.15 5.47 4.19 -1.84 -1.84 Barclays Govt/Credit 0.20 1.86 1.46 -0.42 -0.42 Barclays Long Corporate -0.34 2.42 -1.80 -7.24 -7.24 Barclays MBS 0.45 1.81 2.08 0.99 0.99 Barclays MBS 0.45 1.81 2.08 0.99 0.99	MSCI EAFE Small-Cap	2.03	-6.45	-16.05	-17.89	-17.89	
MSCI Europe 0.88 -4.62 -12.72 -14.86 -14.86 MSCI Pacific 1.24 -5.14 -12.00 -12.02 -12.02 Wilshire U.S. RESI 4.04 -8.35 -6.98 -4.80 -4.80 Wilshire Global RESI 2.66 -6.14 -6.09 -5.34 -5.34 Alerian MLP 4.93 -9.36 -17.30 -12.42 -12.42 Barclays Universal 0.28 1.56 1.17 -0.25 -0.25 Barclays U.S. Treasury 0.28 2.15 2.57 0.86 0.86 Barclays U.S. Treasury Long -0.15 5.47 4.19 -1.84 -1.84 Barclays Govt/Credit 0.20 1.86 1.46 -0.42 -0.42 Barclays Corporate 0.08 1.47 -0.18 -2.51 -2.51 Barclays Global Aggregate x-USD 0.45 1.81 2.08 0.99 0.99 Barclays Global Aggregate x-USD 0.45 1.81 2.08 0.99 0.99 Barclays Global Aggregate x-USD 0.45 2.22 0.91 -2.15	MSCI Emerging Markets	1.55	-2.66	-7.47	-14.58	-14.58	
MSCI Pacific 1.24 -5.14 -12.20 -12.02 -12.02 Wilshire U.S. RESI 4.04 -8.35 -6.98 -4.80 -4.80 Wilshire Global RESI 2.66 -6.14 -6.09 -5.34 -5.34 Alerian MLP 4.93 -9.36 -17.30 -12.42 -12.42 Barclays Universal 0.28 1.56 1.17 -0.25 -0.25 Barclays Aggregate 0.28 1.84 1.64 0.01 0.01 Barclays U.S. Treasury 0.28 2.15 2.57 0.86 0.86 Barclays U.S. Treasury Long -0.15 5.47 4.19 -1.84 -1.84 Barclays Govt/Credit 0.20 1.86 1.46 -0.42 -0.42 Barclays Corporate 0.08 1.47 -0.18 -2.51 -2.51 Barclays Long Corporate -0.34 2.42 -1.80 -7.24 -7.24 Barclays MBS 0.45 1.81 2.08 0.99 0.99 Barclays Global Aggregate x-USD 0.45 2.22 0.91 -2.15 -2.15	MSCI Frontier Markets	0.99	-2.93	-4.33	-16.41	-16.41	
Wilshire U.S. RESI 4.04 -8.35 -6.98 -4.80 -4.80 Wilshire Global RESI 2.66 -6.14 -6.09 -5.34 -5.34 Alerian MLP 4.93 -9.36 -17.30 -12.42 -12.42 Barclays Universal 0.28 1.56 1.17 -0.25 -0.25 Barclays Aggregate 0.28 1.84 1.64 0.01 0.01 Barclays U.S. Treasury 0.28 2.15 2.57 0.86 0.86 Barclays U.S. Treasury Long -0.15 5.47 4.19 -1.84 -1.84 Barclays Govt/Credit 0.20 1.86 1.46 -0.42 -0.42 Barclays Corporate 0.08 1.47 -0.18 -2.51 -2.51 Barclays Long Corporate -0.34 2.42 -1.80 -7.24 -7.24 Barclays MBS 0.45 1.81 2.08 0.99 0.99 Barclays Global Aggregate x-USD 0.45 2.22 0.91 -2.15 -2.15 Barclays Global Aggregate x-USD 0.45 2.22 0.91 -2.15 <t< td=""><td>MSCI Europe</td><td>0.88</td><td>-4.62</td><td>-12.72</td><td>-14.86</td><td>-14.86</td><td></td></t<>	MSCI Europe	0.88	-4.62	-12.72	-14.86	-14.86	
Wilshire Global RESI 2.66 -6.14 -6.09 -5.34 -5.34 Alerian MLP 4.93 -9.36 -17.30 -12.42 -12.42 Barclays Universal 0.28 1.56 1.17 -0.25 -0.25 Barclays Aggregate 0.28 1.84 1.64 0.01 0.01 Barclays U.S. Treasury 0.28 2.15 2.57 0.86 0.86 Barclays U.S. Treasury Long -0.15 5.47 4.19 -1.84 -1.84 Barclays Govt/Credit 0.20 1.86 1.46 -0.42 -0.42 Barclays Corporate 0.08 1.47 -0.18 -2.51 -2.51 Barclays Long Corporate 0.08 1.47 -0.18 -2.51 -2.51 Barclays MBS 0.45 1.81 2.08 0.99 0.99 0.99 Barclays Global Aggregate x-USD 0.45 2.22 0.91 -2.15 -2.15 -3.02 Barclays Global Aggregate x-USD 0.45 2.22 0.91 -2.15 -2.15 -3.02 -3.02 -3.02 -3.02 -3.02	MSCI Pacific	1.24	-5.14	-12.20	-12.02	-12.02	
Alerian MLP 4.93 -9.36 -17.30 -12.42 -12.42 Barclays Universal 0.28 1.56 1.17 -0.25 -0.25 Barclays Aggregate 0.28 1.84 1.64 0.01 0.01 Barclays U.S. Treasury 0.28 2.15 2.57 0.86 0.86 Barclays U.S. Treasury Long -0.15 5.47 4.19 -1.84 -1.84 Barclays U.S. TiPS 0.14 0.55 -0.42 -1.26 -1.26 Barclays Corporate 0.08 1.47 -0.18 -2.51 -2.51 Barclays High Yield 0.59 -2.14 -4.53 -2.08 -2.08 Barclays Global Aggregate x-USD 0.45 1.81 2.08 0.99 0.99 Barclays Global Aggregate x-USD 0.45 2.22 0.91 -2.15 -2.15 Barclays Global Aggregate x-USD 0.45 2.22 0.91 -2.15 -2.15 Barclays Global Aggregate x-USD 0.45 2.42 -0.49 -3.02 -3.02 Barclays Global Aggregate x-USD 0.45 2.42 -0.4	Wilshire U.S. RESI	4.04	-8.35	-6.98	-4.80	-4.80	
Barclays Universal 0.28 1.56 1.17 -0.25 -0.25 Barclays Aggregate 0.28 1.84 1.64 0.01 0.01 Barclays U.S. Treasury 0.28 2.15 2.57 0.86 0.86 Barclays U.S. Treasury Long -0.15 5.47 4.19 -1.84 -1.84 Barclays U.S. Tipes 0.14 0.55 -0.42 -1.26 -1.26 Barclays Govt/Credit 0.20 1.86 1.46 -0.42 -0.42 Barclays Long Corporate 0.08 1.47 -0.18 -2.51 -2.51 Barclays High Yield 0.59 -2.14 -4.53 -2.08 -2.08 Barclays Global Aggregate x-USD 0.45 1.81 2.08 0.99 0.99 Barclays Global EMD 0.17 1.32 -0.49 -3.02 -3.02 Barclays Global EMD 0.17 1.32 -0.49 -3.02 -3.02 Barclays Global EMD 0.17 1.32 -0.49 -3.02 -3.02 Barclays Global EMD 0.17 1.32 -0.49 -3.02 <t< td=""><td>Wilshire Global RESI</td><td>2.66</td><td>-6.14</td><td>-6.09</td><td>-5.34</td><td>-5.34</td><td></td></t<>	Wilshire Global RESI	2.66	-6.14	-6.09	-5.34	-5.34	
Barclays Aggregate 0.28 1.84 1.64 0.01 0.01 Barclays U.S. Treasury 0.28 2.15 2.57 0.86 0.86 Barclays U.S. Treasury Long -0.15 5.47 4.19 -1.84 -1.84 Barclays U.S. TiPS 0.14 0.55 -0.42 -1.26 -1.26 Barclays Govt/Credit 0.20 1.86 1.46 -0.42 -0.42 Barclays Corporate 0.08 1.47 -0.18 -2.51 -2.51 Barclays Long Corporate -0.34 2.42 -1.80 -7.24 -7.24 Barclays MBS 0.45 1.81 2.08 0.99 0.99 -0.67% +0.63% +1.69% Barclays Global Aggregate x-USD 0.45 2.22 0.91 -2.15 -2.15 -2.15 Barclays Global EMD 0.17 1.32 -0.49 -3.02 -3.02 -3.02 -3.02 Barclays Global EMD 0.17 1.32 -0.49 -3.02 -3.02 -3.02 -3.02 -3.02 -6.77% -5.57% -4.44% -4.44%	Alerian MLP	4.93	-9.36	-17.30	-12.42	-12.42	
Barclays U.S. Treasury 0.28 2.15 2.57 0.86 0.86 Barclays U.S. Treasury Long -0.15 5.47 4.19 -1.84 -1.84 -1.84 Barclays U.S. Tips 0.14 0.55 -0.42 -1.26 -1.26 Barclays Govt/Credit 0.20 1.86 1.46 -0.42 -0.42 Barclays Long Corporate 0.08 1.47 -0.18 -2.51 -2.51 Barclays High Yield 0.59 -2.14 -4.53 -2.08 -2.08 -2.08 Barclays Global Aggregate x-USD 0.45 2.22 0.91 -2.15 -2.15 -2.15 Barclays Global EMD 0.17 1.32 -0.49 -3.02 -3.02 -3.02 -3.02 Sanclays Global EMD 0.17 1.32 -0.49 -3.02 -3.02 -3.02 -3.02 -3.02 -3.02 -3.02 -3.02 -3.02 -3.02 -3.02 -5.7% -4.44%	Barclays Universal	0.28	1.56	1.17	-0.25	-0.25	
Barclays U.S. Treasury Long -0.15 5.47 4.19 -1.84 -1.84 Barclays U.S. TIPS 0.14 0.55 -0.42 -1.26 -1.26 Barclays Gov/t/Credit 0.20 1.86 1.46 -0.42 -0.42 Barclays Corporate 0.08 1.47 -0.18 -2.51 -2.51 Barclays Long Corporate -0.34 2.42 -1.80 -7.24 -7.24 Barclays MBS 0.45 1.81 2.08 0.99 0.99 Barclays Global Aggregate x-USD 0.45 2.22 0.91 -2.15 -2.15 Barclays Global EMD 0.17 1.32 -0.49 -3.02 -3.02 -3.02 Starclays Global EMD 0.17 1.32 -0.49 -3.02 -3.02 -3.02 Starclays Global EMD 0.17 1.32 -0.49 -3.02 -3.02 -3.02 -6.77% -5.57% -4.44%	Barclays Aggregate	0.28	1.84	1.64	0.01	0.01	
Barclays Govt/Credit 0.20 1.86 1.46 -0.42 -0.42 Barclays Govt/Credit 0.08 1.47 -0.18 -2.51 -2.51 Barclays Corporate 0.08 1.47 -0.18 -2.51 -2.51 Barclays Long Corporate -0.34 2.42 -1.80 -7.24 -7.24 Barclays High Yield 0.59 -2.14 -4.53 -2.08 -2.08 -2.08 Barclays Global Aggregate x-USD 0.45 1.81 2.08 0.99 0.99 -0.67% +0.63% +1.69% Barclays Global EMD 0.17 1.32 -0.49 -3.02 -3.02 -3.02 St DAT SALLS L exercaced Lean 100 0.35 2.16 4.29 0.59 0.59 -6.77% -5.57% -4.44%	Barclays U.S. Treasury	0.28	2.15	2.57	0.86	0.86	\$\ovee\$ \$\ovee\$ <t< td=""></t<>
Barclays Govt/Credit 0.20 1.86 1.46 -0.42 -0.42 Barclays Govt/Credit 0.08 1.47 -0.18 -2.51 -2.51 Barclays Corporate 0.08 1.47 -0.18 -2.51 -2.51 Barclays Long Corporate -0.34 2.42 -1.80 -7.24 -7.24 Barclays High Yield 0.59 -2.14 -4.53 -2.08 -2.08 -2.08 Barclays Global Aggregate x-USD 0.45 1.81 2.08 0.99 0.99 -0.67% +0.63% +1.69% Barclays Global EMD 0.17 1.32 -0.49 -3.02 -3.02 -3.02 St DAL S L exercand Loop 100 0.25 2.16 4.29 0.59 0.59 -6.77% -5.57% -4.44%	Barclays U.S. Treasury Long	-0.15	5.47	4.19	-1.84	-1.84	01/ 1/15/ 1/12/ 1/26/ 1/26/ 1/21/ 1/23/ 1/23/ 1/21/ 1/21/ 1/18/ 1/18/
Barclays Corporate 0.08 1.47 -0.18 -2.51 -2.51 Barclays Long Corporate -0.34 2.42 -1.80 -7.24 -7.24 Barclays Long Corporate -0.34 2.42 -1.80 -7.24 -7.24 Barclays High Yield 0.59 -2.14 -4.53 -2.08 -2.08 Barclays MBS 0.45 1.81 2.08 0.99 0.99 Barclays Global Aggregate x-USD 0.45 2.22 0.91 -2.15 -2.15 Barclays Global EMD 0.17 1.32 -0.49 -3.02 -3.02 -3.02 St PM TS ALLS L exerpaneed Loop 100 0.35 2.16 4.30 0.59 0.59	Barclays U.S. TIPS	0.14	0.55	-0.42	-1.26	-1.26	01 02 02 04 05 05 05 05 05 07 07
Barclays Long Corporate -0.34 2.42 -1.80 -7.24 -7.24 Barclays Long Corporate 0.59 -2.14 -4.53 -2.08 -2.08 Barclays High Yield 0.59 -2.14 -4.53 -2.08 -2.08 Barclays MBS 0.45 1.81 2.08 0.99 0.99 Barclays Global Aggregate x-USD 0.45 2.22 0.91 -2.15 -2.15 Barclays Global EMD 0.17 1.32 -0.49 -3.02 -3.02 St D4/TS ALL S L exerced and Loop 100 0.35 2.16 4.29 0.59 0.59	Barclays Gov't/Credit	0.20	1.86	1.46	-0.42	-0.42	
Barclays High Yield 0.59 -2.14 -4.53 -2.08 -2.08 Barclays MBS 0.45 1.81 2.08 0.99 0.99 Barclays Global Aggregate x-USD 0.45 2.22 0.91 -2.15 -2.15 Barclays Global EMD 0.17 1.32 -0.49 -3.02 -3.02 Starclays Lawranged Leap 100 0.25 2.16 4.29 0.59 0.59	Barclays Corporate	0.08	1.47	-0.18	-2.51	-2.51	
Barclays High Yield 0.59 -2.14 -4.53 -2.08 -0.67% +0.63% +1.69% -2.09% -2.15 -2.15 -2.15 -2.15 Mid Cap -3.20% -4.08% -5.20% -5.20% Small Cap -6.77% -5.57% -4.44%	Barclays Long Corporate	-0.34	2.42	-1.80	-7.24	-7.24	Relative Performance to the Wilshire 5000 (YTD)
Barclays MBS 0.45 1.81 2.08 0.99 0.99 Barclays Global Aggregate x-USD 0.45 2.22 0.91 -2.15 -2.15 Barclays Global EMD 0.17 1.32 -0.49 -3.02 -3.02 Sarclays Global EMD 0.17 1.32 -0.49 -3.02 -3.02 Sarclays Global EMD 0.25 -3.16 4.29 0.59 0.59	Barclays High Yield	0.59	-2.14	-4.53	-2.08	-2.08	
Barclays Global Aggregate x-USD 0.45 2.22 0.91 -2.15 -2.15 -2.15 Barclays Global EMD 0.17 1.32 -0.49 -3.02 -3.02 -3.02 -3.02 Small Cap -6.77% -5.57% -4.44%	Barclays MBS	0.45	1.81	2.08	0.99	0.99	
Barclays Global EMD 0.17 1.32 -0.49 -3.02 -3.02 -3.02 Sandar Service Small Cap -6.77% -5.57% -4.44%		0.45	2.22	0.91	-2.15	-2.15	
Stall S opprograd opp 100 0.25 3.16 4.30 0.50 0.50 Sinal Cap -0.17% -0.57% -4.44%		0.17	1.32	-0.49	-3.02	-3.02	-
		-0.25	-3.16	-4.39	-0.59	-0.59	Micro Cap -0.77% -5.57% -4.44%



Hypothetical Values at End of One-Year¹

MSCI ACWI IMI	\$	899.25
MSCI ACWI Min Vol	\$	984.40
Wilshire 5000	\$	947.46
Wilshire US Large Cap	\$	953.74
Wilshire US Small Cap	\$	892.31
MSCI EAFE	\$	862.07
MSCI Emerging Mkts	\$	854.89
Barclays Aggregate	\$	1,000.11

Wilshire 5000 Index Return (YTD) = -5.27%

W Wilshire

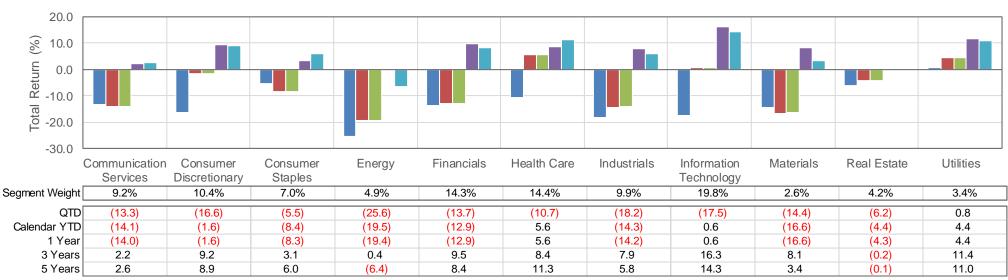
One-Year Growth of \$1,000

Weekly Capital Markets Update

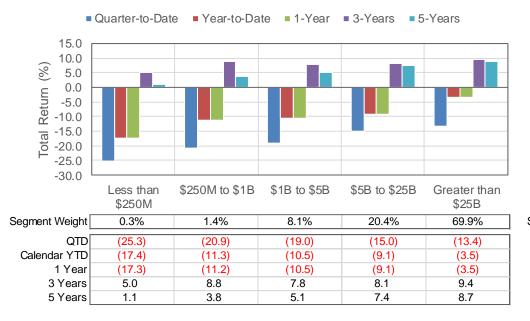
As of December 31, 2018

Return by GICS Sector





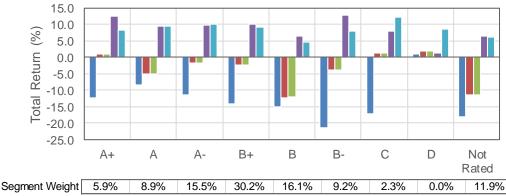
Return by Market Cap Size



Return by Quality Rating



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



ocginent weight	0.070	0.570	10.070	00.270	10.170	5.270	2.070	0.070	11.570
QTD	(12.2)	(8.4)	(11.3)	(14.2)	(14.9)	(21.4)	(17.3)	0.9	(18.0)
Calendar YTD	1.0	(5.1)	(1.7)	(2.2)	(12.2)	(3.7)	1.4	1.8	(11.3)
1 Year	1.0	(5.0)	(1.7)	(2.2)	(12.1)	(3.7)	1.4	1.8	(11.2)
3 Years	12.5	9.6	9.7	10.3	6.4	12.7	8.1	1.5	6.5
5 Years	8.2	9.5	10.2	9.1	4.7	7.9	12.2	8.7	6.1



1-Year

(5.27)

Wilshire 5000 Total Performance

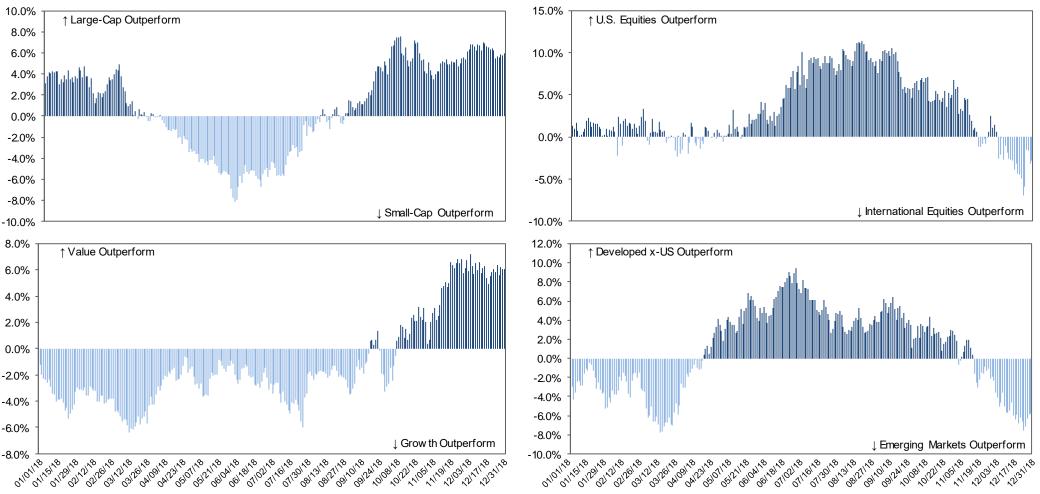
YTD

(5.27)

QTD

(14.29)

Relative Performance – Rolling Three Months Returns



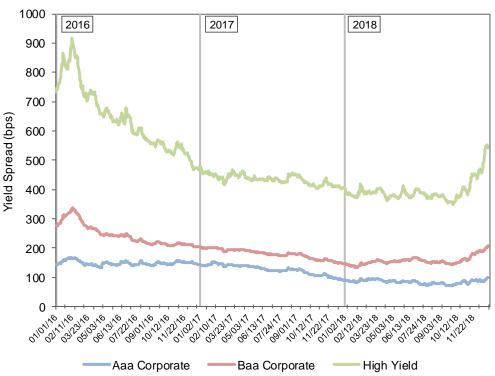
Charts above display the comparative performance of certain style, size, or region groups, based off rolling three-month total returns (calculated daily). Left-hand axis represents the magnitude of outperformance for each particular style, size, or region grouping.

Representative Market Indexes

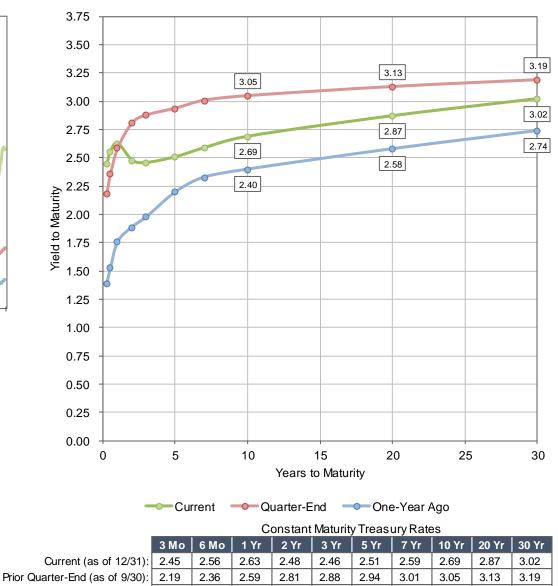
Large Cap:	Wilshire US Large Cap Index	Large Value:	Wilshire US Large Value Index	<u>Domestic (US):</u>	Wilshire 5000 Index	<u>Developed Non-</u> <u>US:</u>	MSCI Developed x-US
Small Cap:	Wilshire US Small Cap Index	Large Growth:	Wilshire US Large Growth Index	International (Non-US):	MSCI ACWI x-US Index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

W Wilshire





Yield to Maturity Spread



1.53

1.39

1.76

1.89

1.98

2.20

2.33

2.40

2.58

Barclays Universal	5.54	
Barclays Aggregate	5.71	
Barclays Gov't/Credit	6.32	
Barclays Gov't	5.95	
Barclays Treasuries	6.02	
Barclays Long Treasuries	16.95	
Barclays Credit	6.82	
Barclays Corporate	7.06	
Barclays High Yield	4.07	
Merrill Lynch HY Master II	4.13	

Barclays Global EMD

-Aa	a Corporate	e — E	Baa Corpora	ate	High Yield	l
	Effective	Current	Yield to	Yield to	Years to	Average
	Duration	Yield	Maturity	Worst	Maturity	Price
	5.54	3.54	3.69	3.69	12.02	99.31
	5.71	3.20	3.26	3.26	13.00	100.09
	6.32	3.05	3.24	3.23	8.76	99.77
	5.95	2.39	2.62	2.62	7.56	99.96
	6.02	2.38	2.61	2.61	7.65	99.85
ries	16.95	3.16	2.99	2.99	25.07	103.83
	6.82	3.96	4.09	4.07	10.42	99.50
	7.06	4.05	4.20	4.20	10.71	99.08
	4.07	6.79	7.76	7.94	5.82	92.55

7.80

5.33

8.00

5.35

5.84

8.69

6.80

5.08

5.50

ige

92.31

96.53

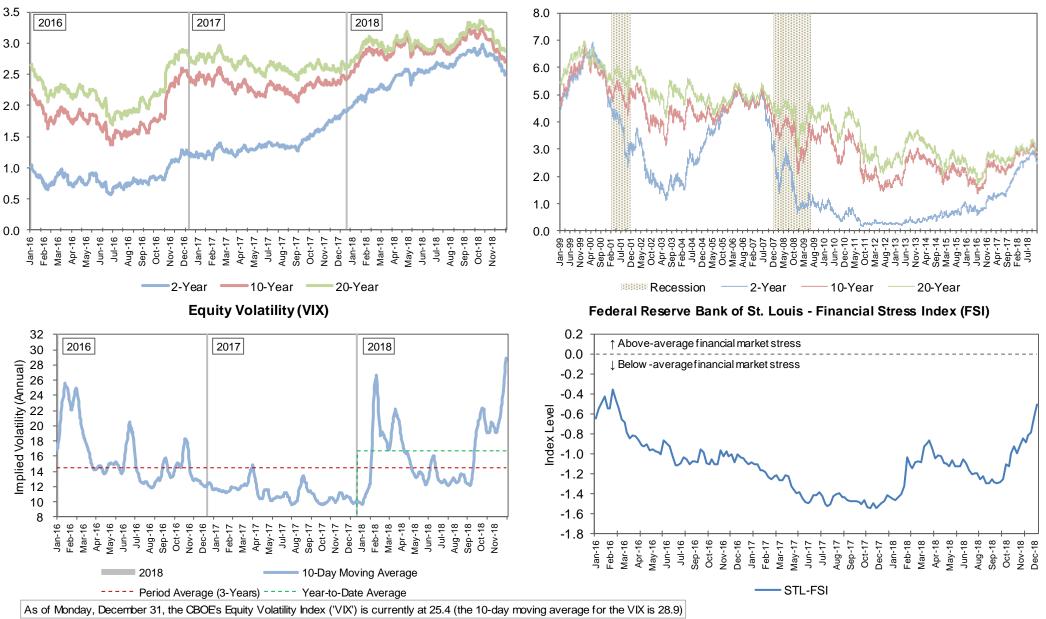
One Year Ago (as of 12/29/17):

U.S. Treasury Yield Curve



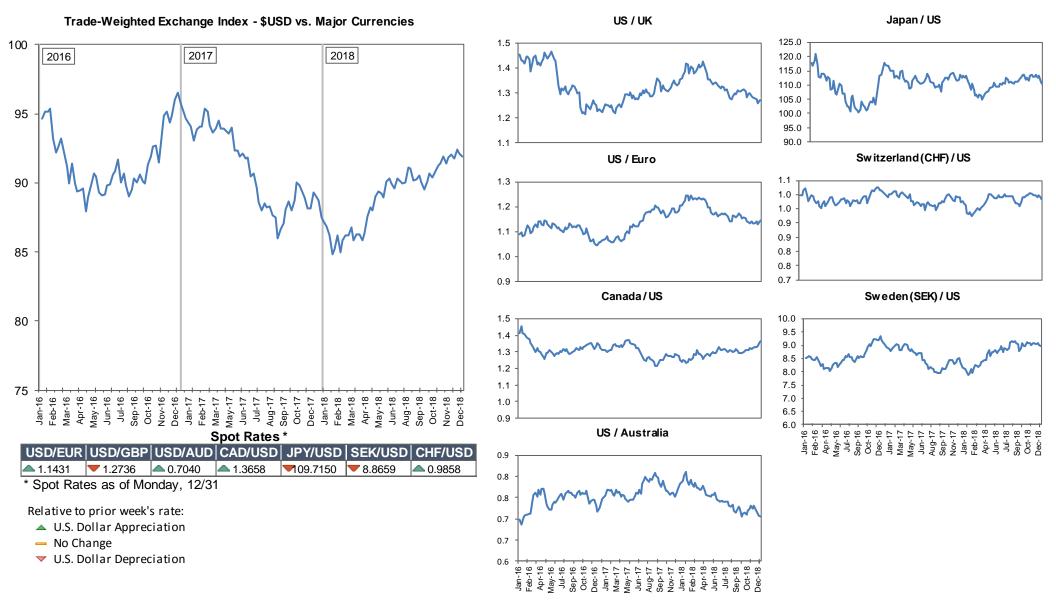
Treasury Yield - Prior 20 Years

Treasury Yields - Prior 3 Years



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)





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

W Wilshire

As of December 31, 2018

Index Fundamentals

	Gro	wth		Size			Valuation			Ri	isk
Index	5-Year EPS	5-Year Dividend	Ανο	eighted g. Market (\$Million)	Price to Earnings	Price to Book	Current Yield	Return on Equity	Price Residual	Beta	Debt to Equity
Wilshire 5000	8.61	7.12	\$	177,074	20.30	2.47	2.15	30.23	-0.24	1.01	93.84
Standard & Poor's 500	8.44	7.80	\$	194,403	19.80	2.65	2.22	32.20	-0.13	1.00	94.51
Wilshire US Large-Cap	8.72	7.47	\$	194,769	19.90	2.59	2.18	31.57	-0.12	1.00	96.11
Wilshire US Mid-Cap	6.68	4.84	\$	5,839	20.30	2.01	1.95	19.27	-1.19	1.02	88.10
Wilshire US Small-Cap	7.27	3.55	\$	2,591	24.40	1.72	1.90	16.64	-1.35	1.08	71.52
Wilshire US Micro-Cap	10.05	1.78	\$	256	N/A	1.29	1.57	13.21	-2.71	0.87	53.13
Wilshire US Large-Cap Growth	19.15	6.74	\$	239,083	20.20	3.13	1.02	48.33	0.40	1.10	87.94
Wilshire US Mid-Cap Growth	13.65	3.76	\$	5,753	20.90	2.55	0.78	26.72	-0.95	1.12	77.04
Wilshire US Small-Cap Growth	15.13	2.98	\$	2,888	21.70	2.24	0.66	14.49	-1.04	1.18	65.04
Wilshire US Large-Cap Value	-0.43	8.11	\$	155,782	19.60	2.25	3.20	16.76	-0.58	0.92	103.13
Wilshire US Mid-Cap Value	-0.80	6.01	\$	5,934	19.70	1.63	3.24	10.81	-1.45	0.91	100.06
Wilshire US Small-Cap Value	-0.47	4.14	\$	2,287	28.00	1.39	3.16	18.83	-1.68	0.98	78.18
MSCI AC World Index IMI	8.96	8.32	\$	110,489	17.60	1.90	2.68	23.31	-0.12	1.00	81.64
MSCI AC World Index Min Vol	5.72	6.63	\$	63,936	17.80	2.26	2.97	22.73	-0.96	0.66	73.76
MSCI AC World Index x-U.S.	9.91	9.65	\$	56,464	14.80	1.50	3.36	16.60	0.00	1.00	68.95
MSCI World x-U.S.	8.95	7.81	\$	51,512	15.10	1.49	3.63	16.51	0.22	1.00	73.99
MSCIEAFE	9.19	7.91	\$	52,806	14.90	1.47	3.66	16.67	0.71	1.00	73.52
MSCI EAFE Small-Cap	12.03	10.56	\$	2,290	16.70	1.34	2.94	14.51	-0.36	0.82	58.21
MSCI Emerging Markets	12.83	15.23	\$	70,558	14.10	1.52	2.61	16.89	-0.68	1.00	53.92
MSCI Frontier Markets	9.05	7.65	\$	5,574	14.60	1.63	4.06	19.06	-2.67	1.04	46.02
MSCI Europe	5.25	5.80	\$	63,850	16.40	1.59	3.95	18.92	-0.58	1.00	78.26
MSCI Pacific	15.92	11.54	\$	34,803	13.00	1.31	3.19	13.00	3.03	1.00	65.47
Wilshire U.S. RESI	10.92	10.61	\$	17,498	30.60	2.15	4.30	12.43	-3.08	0.60	148.12
Wilshire Global RESI	10.02	8.56	\$	14,566	18.80	1.48	4.15	11.76	-1.84	0.64	116.94
Alerian MLP	2.56	11.40	\$	15,911	20.30	1.09	8.73	12.88	3.23	1.18	117.03

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.

<u>Current Yield</u>: 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.



PERFORMANCE UPDATE: NOVEMBER & DECEMBER 2018

Wilshire Consulting OVERVIEW

- W Wilshire
- Wilshire prepared a performance estimate for the Jacksonville Police & Fire Pension Fund
 - Estimate is for the one month periods ending November 30, 2018 and December 31, 2018
- Estimate is calculated by applying beginning month manager weights to underlying benchmark index returns
 - Accounts for underlying style and size positioning
 - » i.e. over(under) weight large or small cap, growth or value in public equity
 - Active management and cash flows are not incorporated into the estimate
- Estimate Summary
 - *Estimated* November 2018 return of 1.09%
 - *Estimated* December 2018 return of -4.95%
 - Estimated Calendar Year 2018 return of -5.34%
 - » Russell 3000 Index Calendar Year 2018 return of -5.24%
 - » MSCI ACWI ex-US Index Calendar Year 2018 return of -14.20%
 - » Bloomberg Aggregate Index Calendar Year 2018 return of 0.01%



Wilshire Consulting PERFORMANCE SUMMARY

Estimate

	One Month	Ending Novemb	oer 30, 2018] [One Month Ending December 31, 2018					
Asset Class	D oture (0()	Market	t Value		D oturn $(0/)$	Market Value *				
	Return (%)	In Millions (\$)	% of Total		Return (%)	In Millions (\$)	% of Total			
Total U.S. Equity Russell 3000 Index <i>Value Added</i>	1.95 <u>2.00</u> -0.05	807.4	43.1		-9.53 <u>-9.31</u> -0.22	730.5	41.0			
Total Non-U.S. Equity MSCI ACWI ex-US Index Value Added	1.12 <u>0.95</u> 0.17	362.7	19.4		-4.17 <u>-4.53</u> 0.36	347.6	19.5			
Total Fixed Income Policy Index <i>Value Added</i>	0.48 <u>0.48</u> 0.00	395.5	21.1		1.61 <u>1.62</u> -0.01	401.9	22.6			
Total MLPs S&P MLP Index <i>Value Added</i>	-1.42 <u>-1.42</u> 0.00	77.5	4.1		-9.04 <u>-9.04</u> 0.00	70.5	4.0			
Total Real Estate NCREIF ODCE NOF Value Added	0.00 <u>0.00</u> 0.00	222.7	11.9		0.00 <u>0.00</u> 0.00	222.7	12.5			
Total Cash	0.18	7.3	0.4] [0.19	7.3	0.4			
Total Fund Policy Index <i>Value Added</i>	1.09 <u>0.99</u> 0.10	1,873.1	100		-4.95 <u>-4.72</u> -0.23	1,780.5	100			

* December ending Market Value does not include City's \$116 million payroll contribution made in December 2018.



PAYROLL CONTRIBUTION

Wilshire Consulting PAYROLL CONTRIBUTION



Overview

- Invest \$116 million from City's advance payroll contribution, in order to leave approximately \$8 million in cash in concert with Staff guidance
- Deploy majority of capital to global public equities, to account for the current 10% underweight to private equity
 - \$40mm to NT S&P 500 Index Fund
 - \$50mm to NT EAFE Index Fund
 - Utilizing passive index funds for this capital helps avoid disrupting active managers or adding to potentially concentrated positions
- Bring Plan's active core bond managers back up to their implied policy targets to serve as diversifier against heightened equity market volatility ¹
 - \$26mm across active core bond managers
- These transactions will have the additional impact on portfolio exposures
 - Slight reduction in U.S. small cap
 - Slight reduction in emerging markets

¹ Individual manager targets implied in Summit's October 2018 Report to the Jacksonville Police & Fire Pension Fund ("Asset Allocation Compliance", page 8).

Wilshire Consulting 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)

Icksonville Police & Fire			Cum	ent Positi	on	r	nanagers; 2/3 deploved du		Feb. and Mar.			Pro-F	orma Pos	ition	
stimated)			cum	enerosia		Vari	ance					1101	onnaros	uon	Variance
	N	1arket Value	Actual	Target		Vun	unce			Ν	/larket Va	مىرا	Actual	Target	vanance
		e-Transaction)	Weight	_	%		\$		Cash Flow		st-Transad		Weight	-	%
U.S. Equity	\$	770,536,166	39.8%	37.0%	2.8%	\$	54,490,088	\$	26,666,667	\$	797,202	2,833	41.2%	37.0%	4.2%
NT S&P 500 Index Fund	\$	211,248,721	10.9%	11.0%	-0.1%	\$	(1,629,843)	\$	26,666,667	\$	237,915	5,388	12.3%	11.0%	1.3%
Eagle Capital Management	\$	200,570,401	10.4%	10.0%	0.4%	\$	7,044,434	\$	-	\$	200,570	0,401	10.4%	10.0%	0.4%
Loomis Sayles	\$	104,880,100	5.4%	5.0%	0.4%	\$	8,117,117	\$	-	\$	104,880	0,100	5.4%	5.0%	0.4%
Sawgrass Asset Management	\$	114,461,368	5.9%	5.0%	0.9%	\$	17,698,385	\$	-	\$	114,461	1,368	5.9%	5.0%	0.9%
Pinnacle	\$	68,320,313	3.5%	3.0%	0.5%	\$	10,262,523	\$	-	\$	68,320	0,313	3.5%	3.0%	0.5%
Wedge Capital Management	\$	71,042,102	3.7%	3.0%	0.7%	\$	12,984,312	\$	-	\$	71,042	2,102	3.7%	3.0%	0.7%
* Brown Investment Advisory	\$	13,161	0.0%	0.0%	0.0%	\$	13,161	\$	-	\$	13	3,161	0.0%	0.0%	0.0%
Non-U.S. Equity	\$	369,303,446	19.1%	20.0%	-0.9%	\$	(17,748,488)	\$	33,333,333	\$	402,636	5,779	20.8%	20.0%	0.8%
NT EAFE Index Fund	\$	16,673,442	0.9%	1.0%	-0.1%	\$	(2,679,155)	\$	33,333,333	\$	50,006	5,775	2.6%	1.0%	1.6%
Silchester	\$	141,599,239	7.3%	7.0%	0.3%	\$	6,131,062	\$	-	\$	141,599	9,239	7.3%	7.0%	0.3%
Baillie Gifford	\$	99,899,862	5.2%	4.0%	1.2%	\$	22,489,475	\$	-	\$	99,899	9,862	5.2%	4.0%	1.2%
Acadian	\$	111,130,903	5.7%	6.0%	-0.3%	\$	(4,984,677)	\$	-	\$	111,130	0,903	5.7%	6.0%	-0.3%
TBD - Int'l Dev. Small Cap	\$	-	0.0%	2.0%	-2.0%	\$	(38,705,193)	\$	-	\$		-	0.0%	2.0%	-2.0%
Fixed Income	\$	405,477,662	21.0%	19.5%	1.5%	Ś	28,102,027	\$	17,333,333	\$	422,810	0.995	21.8%	19.5%	2.3%
NT Aggregate Bond Index	\$	1,842,451	0.1%	1.0%	-0.9%		(17,510,146)	\$		\$	1,842	-	0.1%	1.0%	-0.9%
Neuberger Berman	\$	185,733,246	9.6%	9.0%	0.6%		11,559,876	\$	10,064,516	\$	195,797		10.1%	9.0%	1.1%
Loomis, Sayles & Company	Ś	132,005,798	6.8%	6.5%	0.3%		6,213,920	Ś	7,268,817	Ś	139,274	-	7.2%	6.5%	0.7%
Thompson Siegel Fixed	\$	85,896,167	4.4%	3.0%	1.4%	\$	27,838,377	\$	-	\$	85,896		4.4%	3.0%	1.4%
PIF-t-t-		225 452 000	44.50/	40.0%	A (1)/		24 625 422				005 450		44 504	40.0%	4 60
Real Estate	\$	225,152,090	11.6%	10.0%	1.6%		31,626,123	\$	-	\$	225,152	-	11.6%	10.0%	1.6%
JP Morgan	\$	170,734,419	8.8%	5.0%	3.8%	\$	73,971,436	\$ \$	-	\$	170,734		8.8%	5.0%	3.8%
Principal Global Investments	\$	54,417,671	2.8%	5.0%	-2.2%	\$	(42,345,312)	>	-	\$	54,417	/,6/1	2.8%	5.0%	-2.2%
MLPs/Energy	\$	79,506,765	4.1%	3.0%	1.1%	\$	21,448,975	\$	-	\$	79,506	5,765	4.1%	3.0%	1.19
Harvest Fund Advisors	\$	39,155,304	2.0%	1.5%	0.5%	\$	10,126,409	\$	-	\$	39,155	5,304	2.0%	1.5%	0.5%
Tortoise Capital Advisors	\$	40,351,461	2.1%	1.5%	0.6%	\$	11,322,566	\$	-	\$	40,351	1,461	2.1%	1.5%	0.6%
Private Market Investments	\$	-	0.0%	10.0%	-10.0%	\$	(193,525,967)	\$	-	\$		-	0.0%	10.0%	-10.0%
Cash	\$	85,259,803	4.4%	0.5%	3.9%	\$	75,583,505	\$	(77,333,333)	\$	7,926	5,470	0.4%	0.5%	-0.1%
Total Portfolio	Ś	1,935,259,669	100.0%	100.0%		Ś	-	\$	_	Ś	1,935,259	9.669	100.0%	100.0%	

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