



PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS



PERIOD ENDING: SEPTEMBER 30, 2019

Investment Performance Review for

Alameda County Employees' Retirement Association

3rd quarter summary

THE ECONOMIC CLIMATE

- Real GDP grew at a 2.3% rate year-over-year in the second quarter (2.0% quarterly annualized rate). U.S. Q2 consumer spending came in stronger than any time since 2014, while weak business inventory investment acted as a slight drag.
- Trade policies and conflict likely weighed on economic progress. Uncertainty regarding the future of U.S.-China trade relations and supply chain disruptions caused by new tariff impositions are expected to hinder growth in the future.

PORTFOLIO IMPACTS

- U.S. equities outperformed international in Q3 (S&P 500 +1.7%, MSCI EAFE -1.1%) as domestic markets continued to lead. Some convergence of U.S. interest rates with the ultra-low rates of international markets likely supported equity prices over the quarter.
- Core inflation has crept up to cycle-highs in 2019, increasing to 2.4% YoY in September. Headline inflation rose 1.7% YoY, dragged down by falling energy prices. Neither the media nor investors appear to be concerned about rising inflation, as of yet. Investors remain focused on deflationary forces in the global economy.

THE INVESTMENT CLIMATE

- The Federal Open Market Committee cut the range for its benchmark interest rate by 0.25% in both its July and September meetings, bringing the new range for federal funds to 1.75-2.00%.
- Global sovereign bonds rallied, encouraged by muted inflation expectations and dovish guidance from global central banks. Central bankers appealed for fiscal action, citing the limited capacity of monetary policy to sustain further economic expansion.

ASSET ALLOCATION ISSUES

- Risk assets were flat over the quarter. Global equities gained 0.0% and U.S. Treasuries gained 2.4% as domestic interest rates fell. Longer duration exposures continued to outperform.
- The U.S. dollar appreciated 2.6% in Q3 relative to a trade-weighted basket of currencies. Dollar volatility has been suppressed so far in 2019, following large swings experienced during years 2014-2018. Emerging market currencies fell -4.0% in Q3 on the back of U.S. dollar strength. These currencies remain depressed relative to history.

A neutral risk stance may be appropriate in today's environment

U.S. economics summary

- Real GDP grew at a 2.3% rate year-over-year in the second quarter (2.0% quarterly annualized rate). U.S. Q2 consumer spending came in stronger than any time since 2014, while weak business inventory investment acted as a slight drag.
- U.S-China trade remained a major story in Q3. The U.S. scheduled tariff rate hikes on \$250B in already-tariffed Chinese imports, as well as tariff impositions of up to 15% on the remaining \$300B in Chinese imports not currently exposed to duties. The Chinese retaliated with commensurate tariff adjustments. The two sides agreed to continued trade talks in Washington D.C. at the beginning of October.
- Trade conflict has likely weighed on economic progress. Uncertainty regarding the future of U.S.-China trade relations and supply chain disruptions caused by new tariff impositions are expected to act as a drag on growth in the future.
- Core inflation has crept up to cycle-highs, rising 2.4% YoY in September. Headline inflation increased 1.7% YoY, dragged down by falling energy prices.
- The U.S. unemployment rate reached a 50-year low of 3.5% in September. Historically, the rate of unemployment has risen prior to the beginning of each U.S. recession, which suggests the U.S. expansion may still have room to run.
- Despite record unemployment, wage growth remains lukewarm, decelerating from a cycle high of 3.4% achieved in February, to 2.9% in September.
- In October, the IMF cut its 2019 global economic growth forecast from 3.2% to 3.0%, referencing global trade friction as a primary driver.

	Most Recent	12 Months Prior
GDP (YoY)	2.3% 6/30/19	3.2% 6/30/18
Inflation (CPI YoY, Core)	2.4% 9/30/19	2.3% 9/30/18
Expected Inflation (5yr-5yr forward)	1.7% 9/30/19	2.2% 9/30/18
Fed Funds Target Range	1.75 – 2.00% 9/30/19	2.00 – 2.25% 9/30/18
10 Year Rate	1.7% 9/30/19	3.1% 9/30/18
U-3 Unemployment	3.5% 9/30/19	3.7% 9/30/18
U-6 Unemployment	6.9% 9/30/19	7.5% 9/30/18

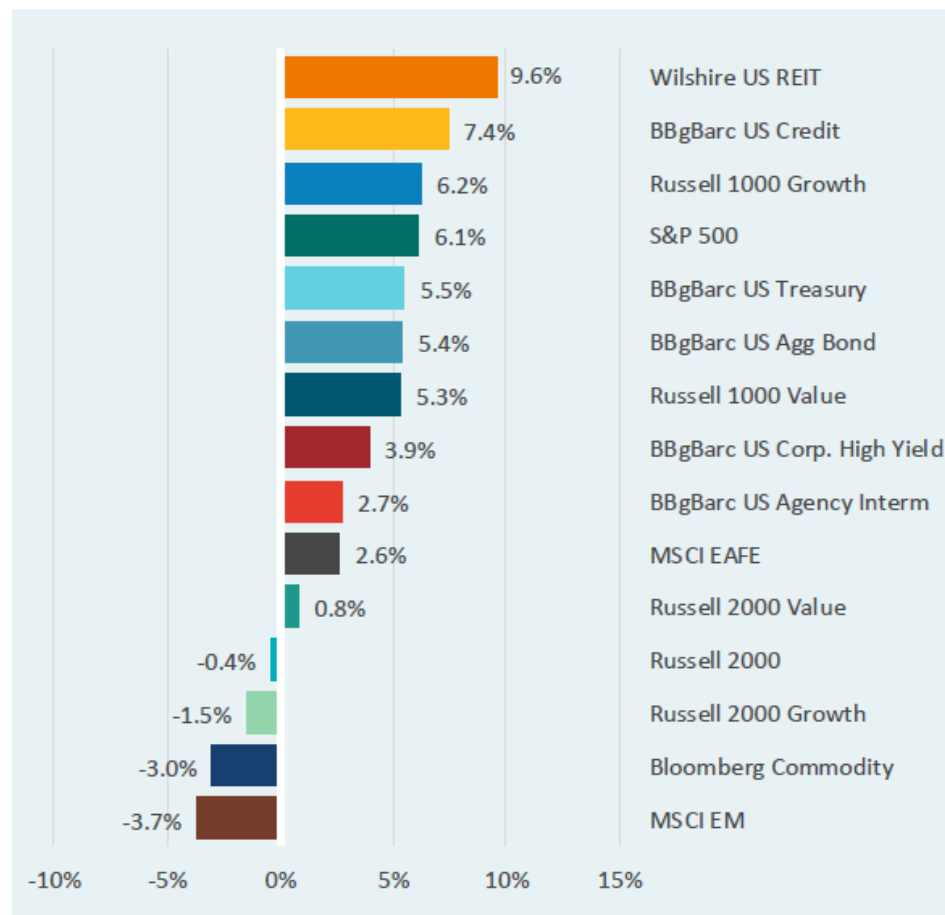
International economics summary

- The Organization for Economic Development cut its 2019 calendar year forecast for global growth from 3.2% to 2.9% and its 2020 calendar year forecast from 3.4% to 3.0%. Driving the downward revisions were trade tensions, which the OECD estimated would reduce 2019 global growth by 0.6%, cue for central banks to step in and attempt to bolster economic growth through more accommodative policy.
- A major theme in the third quarter was the global manufacturing slowdown, which was illuminated by gloomy European manufacturing PMI data. The Markit Eurozone Manufacturing PMI fell to 45.7, further into contractionary territory indicated by a reading below 50. The German reading fell to 41.7. It has yet to be seen whether manufacturing weakness will spill into the larger services sector, where PMIs still indicate business expansion.
- Inflation has remained subdued across international developed markets, and many pundits have viewed the mild inflation data as a
- Unemployment rates continued to tick lower around the globe. In the U.S., unemployment hit a 50-year low at 3.5%.
- U.S-China negotiations will likely continue to impact trade around the world. The U.S. scheduled tariff rate hikes on \$250B in already-tariffed Chinese imports, as well as tariff impositions of up to 15% on the remaining \$300B in Chinese imports not currently exposed to duties. The Chinese retaliated with commensurate tariff adjustments. The two sides agreed to continued trade talks in Washington D.C. at the beginning of October.
- Dormant trade tensions between the U.S. and the E.U. saw a resurgence over the quarter – the U.S. applied tariffs between 10-25% on \$7.5B of imports from the E.U.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.3% 6/30/19	1.7% 9/30/19	3.5% 9/30/19
Eurozone	1.2% 6/30/19	0.8% 9/30/19	7.4% 8/31/19
Japan	1.0% 6/30/19	0.4% 9/30/19	2.3% 5/31/19
BRICS Nations	5.0% 6/30/19	3.1% 9/30/19	5.1% 6/30/19
Brazil	1.0% 6/30/19	2.9% 9/30/19	11.8% 8/31/19
Russia	0.9% 6/30/19	4.0% 9/30/19	4.3% 8/31/19
India	5.8% 3/31/19	4.0% 9/30/19	8.5% 12/31/17
China	6.2% 6/30/19	3.0% 9/30/19	3.6% 6/30/19

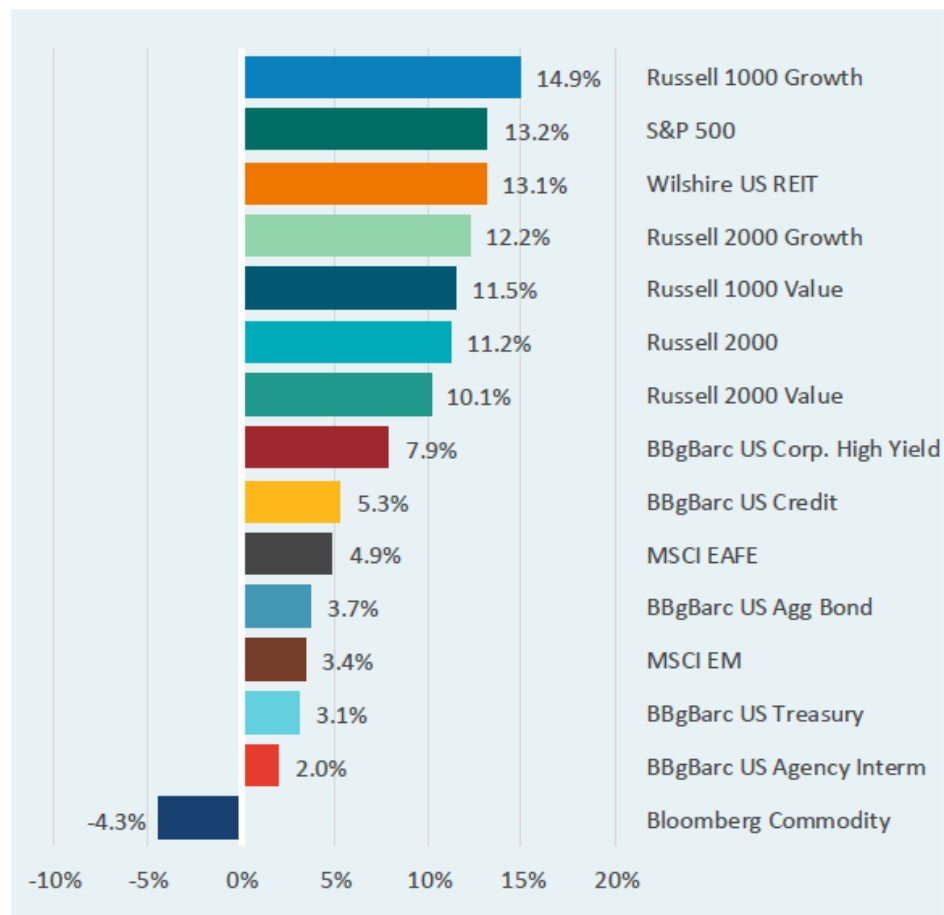
Major asset class returns

SIX MONTHS ENDING SEPTEMBER



Source: Morningstar, as of 9/30/19

TEN YEARS ENDING SEPTEMBER



Source: Morningstar, as of 9/30/19

- The composite fund returned 0.33% for the third quarter of 2019 and ranked in the 76th percentile among public funds greater than \$1 billion (median of 0.6%). The fund matched its policy index return of 0.29% during this time period. Longer term, the five (7.0%), and ten-year (9.02%) returns ranked in the 27th and 19th percentile of large public plans respectively.
- Third quarter results were enhanced by the following factors:
 1. Newton lost 2.71% beating the MSCI Emerging Markets index (-4.11%). The biggest contributor to performance came from stock selection within the consumer discretionary sector, lead by china's New Oriental Education position.
- Third quarter results were hindered by the following factors:
 1. TCW Lost -1.86% for the quarter trailing the Russell 1000 Growth by 3.35% and ranked in the bottom of its peer group. The portfolio's weakest performance came from security specific holdings in the healthcare and consumer discretionary sectors. The Fund's overweight to IT and healthcare also contributed to relative underperformance.
 2. Pzena trailed the Russell 1000 Value (-0.87% vs 1.36%) and ranked in the bottom of its peers. Value started to come back in the beginning of September, but security selection in consumer discretionary, energy, and producer durables sectors hurt relative performance.
 3. Brandywine trailed the FTSE WGBI (-2.65%vs 0.85%). The strategies weak performance during the third quarter was due almost entirely to currency contribution. Performance suffered because of a strong US dollar during the third quarter.

Total Fund
Manager Allocation Analysis (One Quarter)

Period Ending: September 30, 2019

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Absolute Return ¹	\$730,035,694	\$1,105,068	\$9,360,863	\$740,501,625
Alta	\$4,213	\$0	\$0	\$4,213
Applied Research Investments	\$16,992,761	\$0	-\$12,669	\$16,980,092
AQR	\$422,831,549	-\$522,805	-\$12,954,762	\$409,353,982
Arga Investment Management	\$16,516,617	\$0	\$390,350	\$16,906,967
Baird Advisors	\$652,571,483	-\$135,581	\$15,507,606	\$667,943,508
Bivium Cash	\$658	\$0	\$4	\$662
BlackRock MSCI World ex-US Index Fd A	\$436,842,598	\$0	-\$3,887,149	\$432,955,449
BlackRock Russell 1000 Index Fund	\$2,021,534,482	-\$83,000,000	\$28,783,975	\$1,967,318,457
Brandywine	\$345,836,536	-\$233,108	-\$9,157,515	\$336,445,913
Capital Group	\$436,952,447	-\$970,471	-\$5,938,439	\$430,043,538
Cash Account	\$27,002,949	-\$13,451,284	\$61,871	\$13,613,537
Denali Advisors	\$16,608,604	\$0	-\$596,009	\$16,012,595
Dundas Partners	\$17,138,293	\$0	-\$99,044	\$17,039,249
Global Alpha Capital Management	\$6,148,515	\$0	-\$107,803	\$6,040,712
Huber	\$1,768	\$0	-\$4	\$1,763
Kennedy	\$113,983,752	-\$223,283	-\$953,641	\$112,806,828
Loomis Sayles	\$355,774,577	-\$278,627	\$5,296,057	\$360,792,007
Mondrian	\$428,706,424	-\$449,989	-\$11,603,166	\$416,653,270
Newton Emerging Mkt	\$216,731,811	\$0	-\$5,866,677	\$210,865,134
Next Century-SCG	\$135,662,881	-\$132,659,442	-\$2,955,117	\$48,322
OakBrook	\$13	\$66	\$0	\$79
Private Equity	\$521,269,148	\$22,228,743	\$30,863,628	\$574,361,518
Pzena	\$156,113,691	-\$34,193,088	-\$527,179	\$121,393,423
Radin Capital Partners	\$6,046,251	\$0	-\$450,046	\$5,596,205
RVX Asset Management	\$4,128,563	\$1,802	-\$165,760	\$3,964,605
Real Assets	\$293,108,397	\$121,797,120	-\$6,689,272	\$408,216,245
Real Estate	\$588,248,548	-\$13,777,600	\$7,930,235	\$582,401,182
Sec. Lending	\$0	-\$340,053	\$340,053	\$0
TCW	\$158,116,323	-\$38,164,367	-\$1,028,711	\$118,923,246
Templeton	\$228,287,206	\$0	-\$4,048,375	\$224,238,830
Transition Account (Macquarie Capital)	\$1,625,111	\$118,416,610	-\$3,683,931	\$116,357,789
Total	\$8,354,821,862	-\$54,850,287	\$27,809,371	\$8,327,780,947

¹ Preliminary ending market value

Bivium

Manager Allocation Analysis (One Quarter)

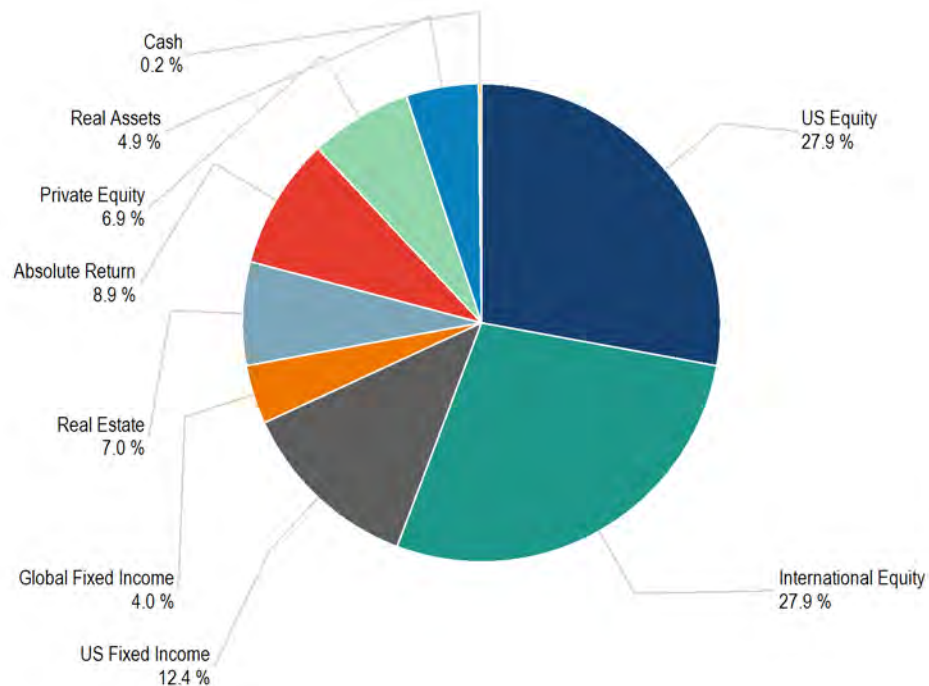
Period Ending: September 30, 2019

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Alta	\$4,213	\$0	\$0	\$4,213
Bivium Cash	\$658	\$0	\$4	\$662
Huber	\$1,768	\$0	-\$4	\$1,763
OakBrook	\$13	\$66	\$0	\$79
Total	\$6,651	\$66	-\$1	\$6,717

Applied Research Investments	\$16,992,761	\$0	-\$12,669	\$16,980,092
Arga Investment Management	\$16,516,617	\$0	\$390,350	\$16,906,967
Denali Advisors	\$16,608,604	\$0	-\$596,009	\$16,012,595
Dundas Partners	\$17,138,293	\$0	-\$99,044	\$17,039,249
Global Alpha Capital Management	\$6,148,515	\$0	-\$107,803	\$6,040,712
Radin Capital Partners	\$6,046,251	\$0	-\$450,046	\$5,596,205
RVX Asset Management	\$4,128,563	\$1,802	-\$165,760	\$3,964,605
Total	\$83,579,604	\$1,802	-\$1,040,981	\$82,540,425

Total Fund Asset Allocation Analysis

Period Ending: September 30, 2019



	Actual	Actual
US Equity	\$2,320,496,992	27.9%
International Equity	\$2,323,008,417	27.9%
US Fixed Income	\$1,028,735,515	12.4%
Global Fixed Income	\$336,445,913	4.0%
Real Estate	\$582,401,184	7.0%
Absolute Return	\$740,501,626	8.9%
Private Equity	\$574,361,518	6.9%
Real Assets	\$408,216,245	4.9%
Private Credit	\$0	0.0%
Cash	\$13,613,537	0.2%
Total	\$8,327,780,947	100.0%

	Actual	Target
US Equity	27.9%	25.0%
International Equity	27.9%	25.0%
US Fixed Income	12.4%	13.0%
Global Fixed Income	4.0%	3.0%
Real Estate	7.0%	8.0%
Absolute Return	8.9%	9.0%
Private Equity	6.9%	8.0%
Real Assets	4.9%	5.0%
Private Credit	0.0%	4.0%
Cash	0.2%	0.0%
Total	100.0%	100.0%

Bivium Portfolio Liquidated U.S. Equities and invested in International Equities

Total Fund Performance Summary

Period Ending: September 30, 2019

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Total Fund (Gross)	0.33	76	3.45	72	3.16	69	8.92	14	7.00	27	8.61	21	9.02	19	9.53	Sep-85
Total Fund (Net)	0.28	81	3.33	73	2.99	73	8.70	17	6.73	34	8.31	32	8.71	34	9.33	
<i>Policy Index¹</i>	0.29	81	3.16	77	2.66	81	8.45	27	7.00	27	8.80	18	9.02	19	9.79	Sep-85
<i>Allocation Index</i>	0.26	81	3.38	73	2.65	81	8.36	31	6.83	31	8.50	23	8.69	35	--	Sep-85
<i>InvMetrics Public DB > \$1B Gross Median</i>	0.60		3.88		3.92		8.02		6.49		7.94		8.34		8.78	Sep-85
US Equity (Gross)	0.88	54	5.43	35	2.74	41	13.86	10	10.81	19	13.19	21	13.26	21	11.60	Sep-85
US Equity (Net)	0.86	54	5.32	38	2.59	43	13.60	14	10.50	29	12.86	41	12.94	39	--	
<i>Russell 3000</i>	1.16	36	5.31	41	2.92	37	12.83	36	10.44	34	13.00	31	13.08	31	11.12	Sep-85
<i>InvMetrics All DB US Eq Gross Median</i>	0.93		5.16		2.14		12.48		10.12		12.70		12.77		10.79	Sep-85
BlackRock Russell 1000 Index Fund (Gross)	1.43	60	5.74	53	3.93	47	--	--	--	--	--	--	--	--	10.54	Apr-18
BlackRock Russell 1000 Index Fund (Net)	1.43	60	5.74	53	3.92	47	--	--	--	--	--	--	--	--	10.53	
<i>Russell 1000</i>	1.42	60	5.73	53	3.87	48	13.19	43	10.62	42	13.21	42	13.23	44	10.48	Apr-18
Large Cap Active Equity (Gross)	-1.36	--	3.45	--	0.13	--	12.90	--	10.02	--	12.81	--	12.77	--	7.75	Mar-00
Large Cap Active Equity (Net)	-1.51	--	2.96	--	-0.44	--	12.38	--	9.56	--	12.35	--	12.34	--	7.31	
<i>Russell 1000</i>	1.42	--	5.73	--	3.87	--	13.19	--	10.62	--	13.21	--	13.23	--	5.76	Mar-00
Pzena (Gross)	-0.87	97	2.70	92	-4.15	94	8.75	80	6.87	77	11.55	57	10.37	88	5.33	Jan-06
Pzena (Net)	-1.03	97	2.27	93	-4.71	95	8.20	85	6.36	83	11.04	70	9.90	91	4.88	
<i>Russell 1000 Value</i>	1.36	62	5.25	51	4.00	40	9.43	71	7.79	64	11.30	64	11.46	65	7.00	Jan-06
TCW (Gross)	-1.86	88	4.18	72	4.71	43	17.10	36	13.35	36	14.12	66	14.70	43	7.54	Jun-99
TCW (Net)	-1.99	89	3.65	77	4.18	48	16.63	44	12.95	43	13.74	74	14.33	57	--	
<i>Russell 1000 Growth</i>	1.49	29	6.20	41	3.71	53	16.89	40	13.39	35	15.02	38	14.94	35	5.56	Jun-99

¹ See Policy Index and Benchmark History.

Total Fund Performance Summary

Period Ending: September 30, 2019

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Small Cap Equity (Gross)	-1.21	--	4.70	--	-3.37	--	12.42	--	10.27	--	12.30	--	12.84	--	13.34	Jul-85
Small Cap Equity (Net)	-1.36	--	4.12	--	-4.18	--	11.44	--	9.33	--	11.33	--	11.94	--	--	
<i>Russell 2000</i>	-2.40	--	-0.36	--	-8.89	--	8.23	--	8.19	--	10.43	--	11.19	--	9.31	Jul-85
Kennedy (Gross)	-0.83	63	1.49	55	-8.11	61	6.38	68	6.68	65	11.24	36	--	--	11.38	Sep-10
Kennedy (Net)	-1.03	67	0.89	62	-8.89	69	5.46	81	5.77	79	10.30	63	--	--	10.49	
<i>Russell 2000 Value</i>	-0.57	59	0.79	64	-8.24	63	6.54	65	7.17	57	9.35	82	10.06	87	9.86	Sep-10
International Equity (Gross)	-2.22	80	0.50	75	0.91	18	8.07	12	4.76	18	6.87	19	5.97	24	8.05	Dec-90
International Equity (Net)	-2.33	84	0.28	80	0.55	20	7.73	16	4.38	27	6.47	29	5.57	38	--	
<i>MSCI ACWI ex USA IMI Gross</i>	-1.62	48	1.31	51	-1.35	50	6.60	41	3.52	51	5.64	60	5.01	61	6.14	Dec-90
<i>InvMetrics All DB ex-US Eq Gross Median</i>	-1.66		1.32		-1.38		6.30		3.54		5.89		5.30		6.57	Dec-90
Bivium Intl Equity (Gross)	-1.25	23	2.41	30	--	--	--	--	--	--	--	--	--	--	7.64	Oct-18
Bivium Intl Equity (Net)	-1.25	23	2.41	30	--	--	--	--	--	--	--	--	--	--	7.55	
<i>MSCI ACWI ex USA Gross</i>	-1.70	46	1.47	51	-0.72	42	6.85	51	3.39	86	5.50	89	4.93	92	8.06	Oct-18
AQR (Gross)	-3.06	91	-2.17	93	-5.90	94	4.84	89	3.14	70	5.98	57	5.36	79	1.62	Oct-07
AQR (Net)	-3.19	93	-2.42	95	-6.28	97	4.35	93	2.63	84	5.48	80	4.87	90	1.14	
<i>MSCI ACWI ex USA Gross</i>	-1.70	45	1.47	60	-0.72	43	6.85	34	3.39	65	5.50	80	4.93	88	1.12	Oct-07
BlackRock MSCI World ex-US Index Fd A (Gross)	-0.89	39	--	--	--	--	--	--	--	--	--	--	--	--	5.04	May-19
BlackRock MSCI World ex-US Index Fd A (Net)	-0.89	39	--	--	--	--	--	--	--	--	--	--	--	--	5.04	
<i>MSCI World ex US Gross</i>	-0.85	38	3.19	31	-0.40	25	7.04	35	3.59	70	6.29	77	5.29	80	5.08	May-19
<i>eV All EAFE Equity Gross Median</i>	-1.21		2.25		-2.87		6.48		4.48		7.11		6.63		4.59	May-19
Capital Group (Gross)	-1.36	35	2.11	45	6.24	5	11.70	5	6.88	20	8.26	24	6.66	53	8.51	Dec-90
Capital Group (Net)	-1.56	39	1.76	51	5.87	7	11.47	5	6.59	22	7.94	30	6.32	61	--	
<i>MSCI ACWI ex USA Gross</i>	-1.70	48	1.47	55	-0.72	42	6.85	50	3.39	69	5.50	82	4.93	83	6.14	Dec-90
<i>MSCI ACWI ex USA Growth Gross</i>	-0.79	20	3.72	24	2.43	16	7.77	35	5.25	36	6.71	57	6.18	62	--	Dec-90

Total Fund Performance Summary

Period Ending: September 30, 2019

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Mondrian (Gross)	-2.70	91	-1.38	74	-1.78	41	5.17	58	2.49	45	5.05	68	4.82	48	6.73	Nov-03
Mondrian (Net)	-2.81	94	-1.68	77	-2.34	45	4.76	72	2.09	60	4.67	81	4.47	78	6.41	
MSCI ACWI ex USA Gross	-1.70	51	1.47	29	-0.72	36	6.85	14	3.39	14	5.50	57	4.93	44	6.64	Nov-03
MSCI ACWI ex USA Value Gross	-2.66	89	-0.85	66	-3.89	55	5.87	31	1.48	78	4.23	92	3.64	94	6.27	Nov-03
Newton Emerging Mkt (Gross)	-2.71	27	--	--	--	--	--	--	--	--	--	--	--	--	2.61	May-19
Newton Emerging Mkt (Net)	-2.74	28	--	--	--	--	--	--	--	--	--	--	--	--	2.57	
MSCI Emerging Markets Gross	-4.11	59	-3.40	67	-1.63	64	6.37	50	2.71	63	2.79	79	3.73	83	1.96	May-19
eV Emg Mkts Equity Gross Median	-3.76		-2.31		0.03		6.34		3.41		4.03		4.94		2.06	May-19
Templeton (Gross)	-1.78	31	-0.02	67	-3.03	35	6.46	56	4.90	70	7.31	74	--	--	5.71	Apr-11
Templeton (Net)	-1.92	34	-0.47	73	-3.64	38	5.80	67	4.21	76	6.56	82	--	--	5.00	
MSCI ACWI ex US Small Cap Gross	-1.09	17	0.29	62	-5.24	49	5.04	73	4.37	76	6.61	82	6.51	96	3.70	Apr-11
Total Fixed Income (Gross)	0.86	84	4.23	56	8.25	54	3.74	54	3.91	37	4.01	27	5.94	20	7.31	Sep-86
Total Fixed Income (Net)	0.81	86	4.12	60	8.02	60	3.54	57	3.72	46	3.80	32	5.74	22	--	
Fixed Income Blend ¹	1.73	47	5.02	36	9.38	34	2.91	79	3.29	64	2.64	75	3.81	83	6.45	Sep-86
InvMetrics All DB Total Fix Inc Gross Median	1.66		4.52		8.39		3.84		3.62		3.24		4.62		7.25	Sep-86
US Fixed Income (Gross)	2.06	46	5.30	39	9.88	38	4.16	37	4.45	31	4.56	25	6.23	19	7.25	Sep-86
US Fixed Income (Net)	2.02	48	5.22	41	9.70	39	3.99	41	4.28	33	4.38	27	6.05	22	--	
BBgBarc US Aggregate TR	2.27	35	5.42	36	10.30	34	2.92	75	3.38	68	2.72	76	3.75	76	6.22	Sep-86
InvMetrics All DB US Fix Inc Gross Median	1.92		4.83		9.13		3.62		3.78		3.38		4.68		6.46	Sep-86
Baird Advisors (Gross)	2.38	44	5.68	42	10.65	41	3.68	22	4.25	9	3.87	9	5.29	8	5.23	Oct-01
Baird Advisors (Net)	2.36	48	5.64	48	10.56	45	3.60	28	4.17	13	3.78	10	5.21	10	5.14	
BBgBarc US Aggregate TR	2.27	69	5.42	69	10.30	65	2.92	91	3.38	87	2.72	90	3.75	92	4.38	Oct-01

¹ See Policy Index and Benchmark History.

Total Fund Performance Summary

Period Ending: September 30, 2019

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Loomis Sayles (Gross)	1.49	97	4.60	94	8.39	96	5.06	3	4.82	3	5.83	1	7.91	1	8.22	Dec-00
Loomis Sayles (Net)	1.41	98	4.44	95	8.05	97	4.73	3	4.48	5	5.48	1	7.56	1	7.87	
BBgBarc US Credit BAA TR	3.26	1	8.22	1	13.49	1	5.12	3	4.89	3	4.40	4	6.17	2	6.52	Dec-00
Global Fixed Income (Gross)	-2.65	92	1.10	92	3.47	90	2.31	86	2.23	69	2.37	71	5.04	69	7.14	Nov-01
Global Fixed Income (Net)	-2.72	93	0.89	93	3.11	92	2.03	91	1.94	75	2.07	75	4.73	73	6.83	
FTSE WGBI TR	0.85	48	4.45	33	8.13	34	1.19	99	1.80	80	0.59	91	1.69	99	4.57	Nov-01
InvMetrics All DB Gbl Fix Inc Gross Median	0.75		3.62		7.55		4.05		3.51		3.15		5.36		6.45	Nov-01
Brandywine (Gross)	-2.65	95	1.10	89	3.47	79	2.31	68	2.23	68	2.37	60	5.04	34	7.14	Nov-01
Brandywine (Net)	-2.72	95	0.89	89	3.11	82	2.03	75	1.94	74	2.07	65	4.73	37	6.83	
FTSE WGBI TR	0.85	61	4.45	45	8.13	39	1.19	87	1.80	76	0.59	89	1.69	89	4.57	Nov-01
Absolute Return (Gross)	1.28	22	1.18	56	0.43	53	2.45	74	1.93	69	3.95	67	--	--	3.21	Sep-11
Absolute Return (Net)	1.28	22	1.18	56	0.43	53	2.45	74	1.93	69	3.95	67	--	--	3.21	
HFRI Fund of Funds Composite Index	-0.90	77	0.58	71	0.01	57	3.15	68	1.95	69	3.18	75	2.67	82	3.15	Sep-11
InvMetrics All DB Hedge Funds Gross Median	0.00		1.81		0.62		4.47		3.11		4.67		4.63		4.97	Sep-11
Private Equity (Gross)	5.92	--	12.16	--	12.22	--	14.63	--	14.57	--	15.23	--	14.63	--	4.06	Nov-08
Private Equity (Net)	5.92	--	12.16	--	12.22	--	14.63	--	14.57	--	15.23	--	14.63	--	4.06	
Thomson Reuters C A Global All PE 1 Qtr Lag	2.45	--	5.99	--	4.12	--	10.62	--	7.44	--	9.78	--	11.10	--	7.70	Nov-08
Real Assets (Gross)	-1.32	--	-2.87	--	-12.38	--	-2.17	--	-5.95	--	-6.41	--	--	--	-5.16	Sep-11
Real Assets (Net)	-1.32	--	-2.87	--	-12.38	--	-2.17	--	-5.95	--	-6.41	--	--	--	-5.16	
Real Asset Blend ¹	-3.09	--	-0.76	--	-1.80	--	6.22	--	5.93	--	5.59	--	--	--	5.51	Sep-11

Total Fund Performance Summary

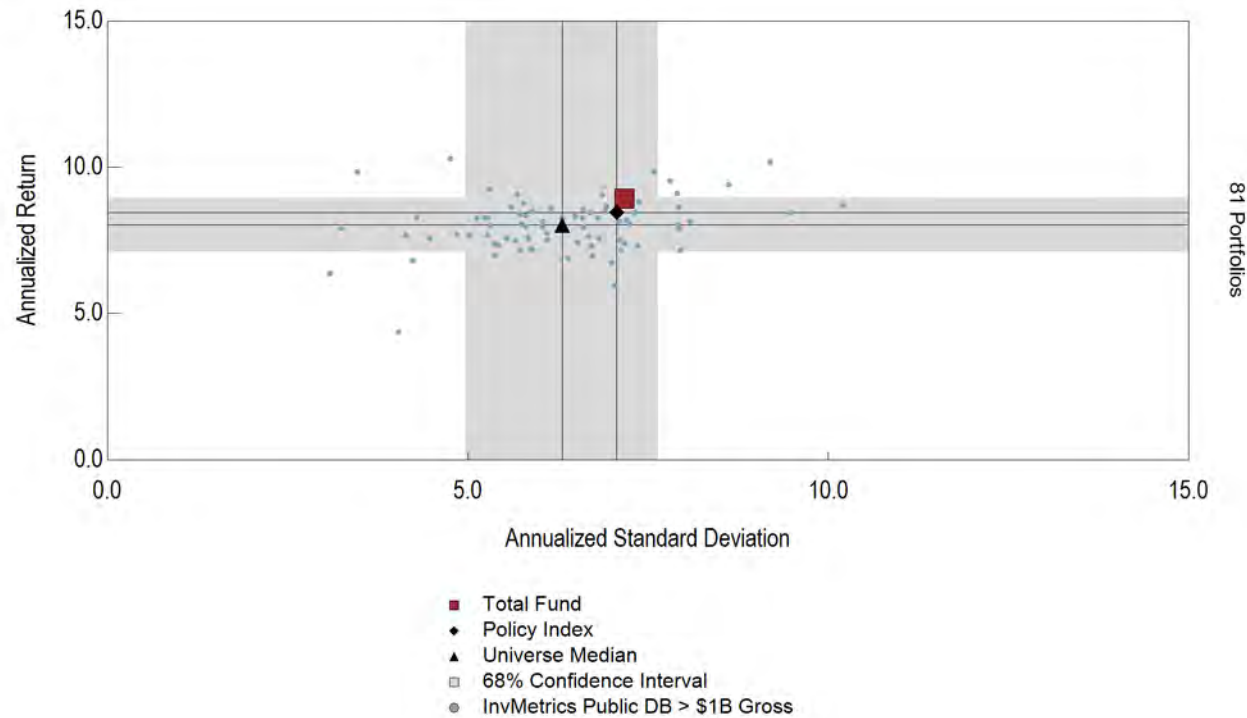
Period Ending: September 30, 2019

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Cash (Gross)	0.33	--	0.82	--	1.92	--	1.44	--	0.93	--	0.68	--	0.52	--	3.15	Sep-85
Cash (Net)	0.33	--	0.82	--	1.92	--	1.44	--	0.93	--	0.68	--	0.52	--	3.15	
91 Day T-Bills	0.50	--	1.08	--	2.26	--	1.54	--	0.97	--	0.71	--	0.52	--	3.25	Sep-85
Real Estate (Gross)	1.37	54	3.10	37	6.71	43	7.89	31	10.37	22	11.33	15	11.00	43	7.10	Mar-86
Real Estate (Net)	1.37	54	3.10	37	6.71	43	7.81	33	9.90	29	10.68	32	10.25	60	6.05	
NCREIF-ODCE	1.31	55	2.31	64	5.59	66	7.30	51	9.34	50	10.29	39	10.86	47	7.28	Mar-86
InvMetrics All DB Real Estate Pub+Priv Gross Median	1.45		2.87		6.15		7.33		9.30		10.06		10.71		7.48	Mar-86

¹ See Policy Index and Benchmark History.

Total Fund
Risk vs. Return (3 Years)

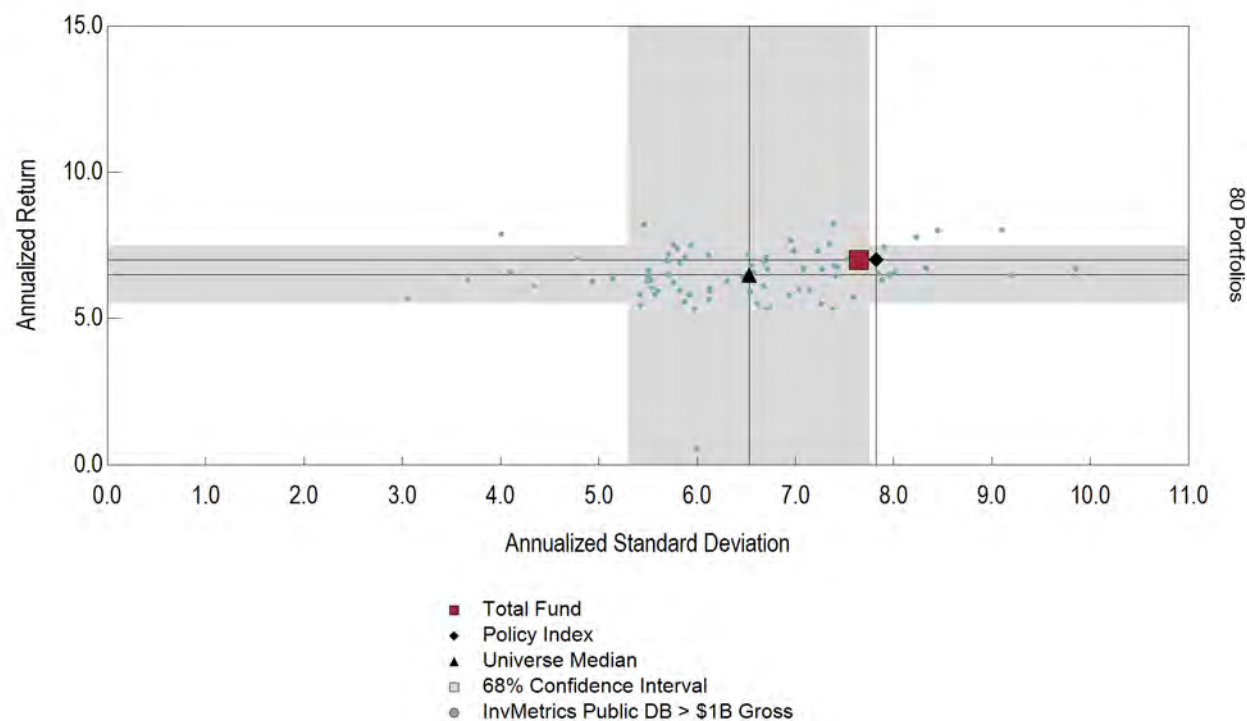
Period Ending: September 30, 2019



	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	8.92%	14	7.18%	78	1.03	50	0.39	39	1.20%	63
Policy Index	8.45%	27	7.06%	72	0.98	62	--	--	0.00%	1
Allocation Index	8.36%	31	7.44%	85	0.92	73	-0.17	79	0.56%	5
InvMetrics Public DB > \$1B Gross Median	8.02%	--	6.31%	--	1.03	--	0.20	--	1.04%	--

Total Fund
Risk vs. Return (5 Years)

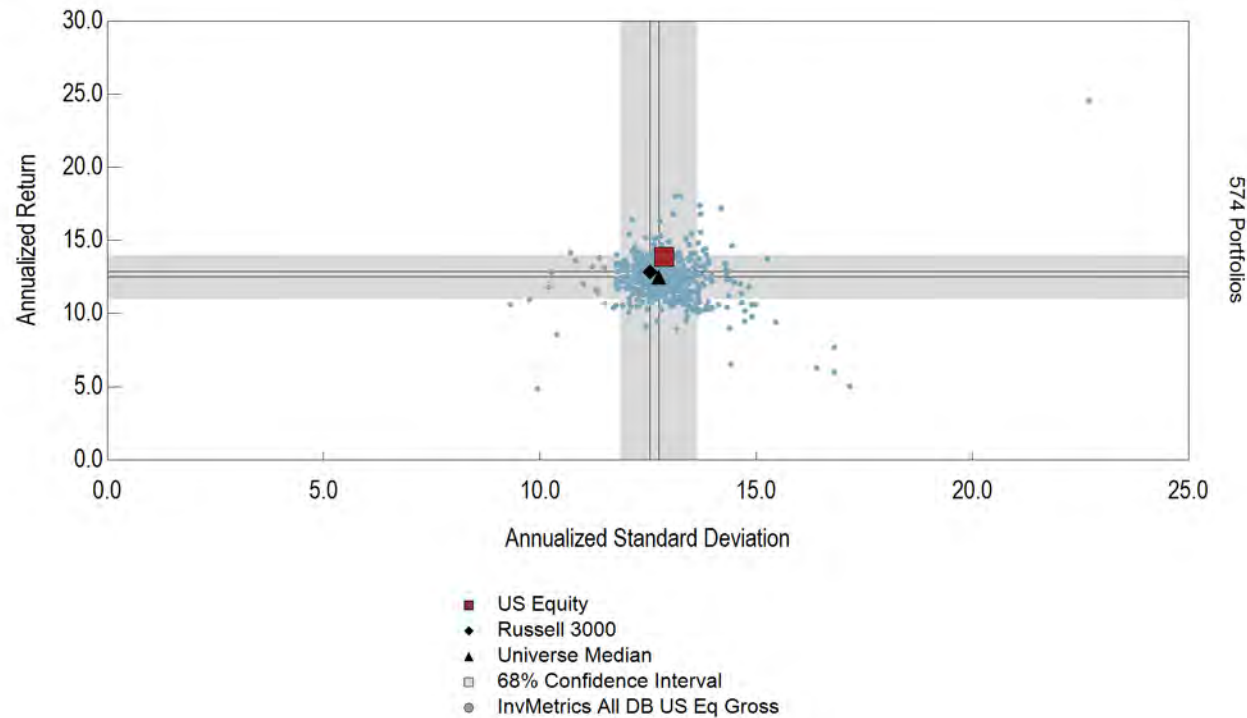
Period Ending: September 30, 2019



	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	7.00%	27	7.65%	86	0.79	66	0.00	68	1.22%	53
Policy Index	7.00%	27	7.82%	86	0.77	72	--	--	0.00%	1
Allocation Index	6.83%	31	7.96%	92	0.74	77	-0.39	84	0.46%	3
InvMetrics Public DB > \$1B Gross Median	6.49%	--	6.53%	--	0.84	--	0.19	--	1.19%	--

US Equity Risk vs. Return (3 Years)

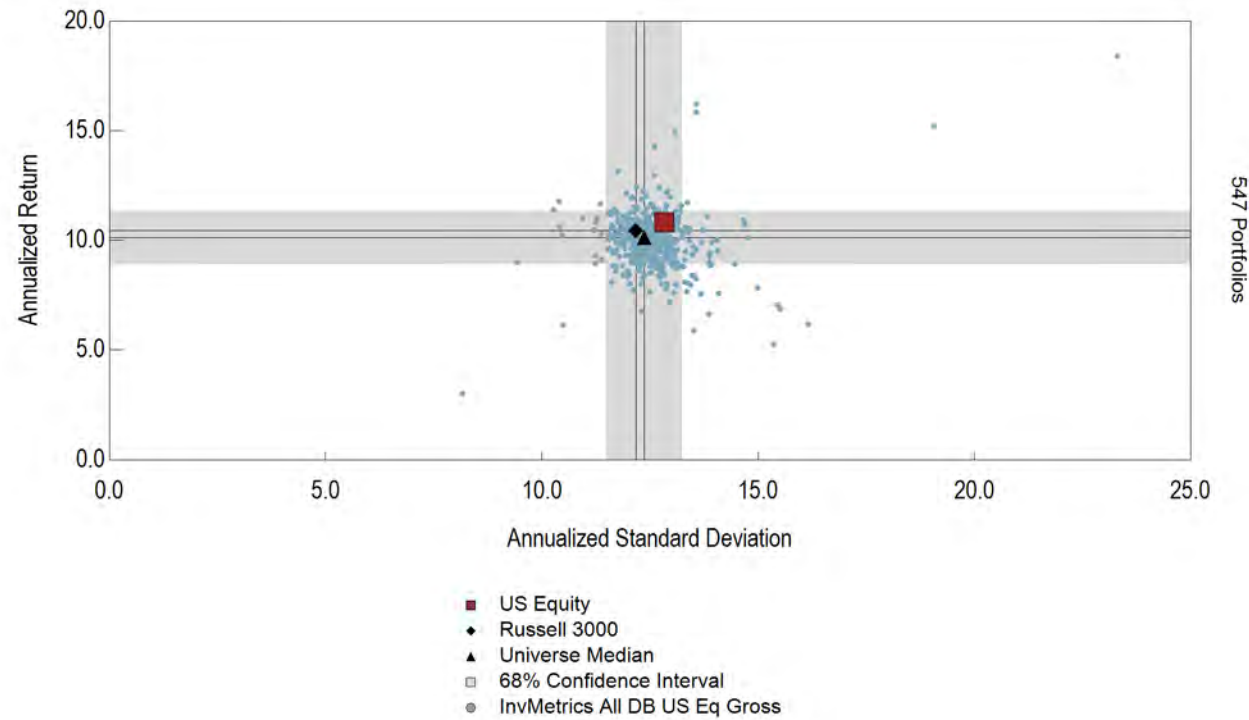
Period Ending: September 30, 2019



	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
US Equity	13.86%	10	12.87%	59	0.96	16	0.77	9	1.35%	34
Russell 3000	12.83%	36	12.54%	36	0.90	35	--	--	0.00%	1
InvMetrics All DB US Eq Gross Median	12.48%	--	12.75%	--	0.86	--	-0.23	--	1.85%	--

US Equity Risk vs. Return (5 Years)

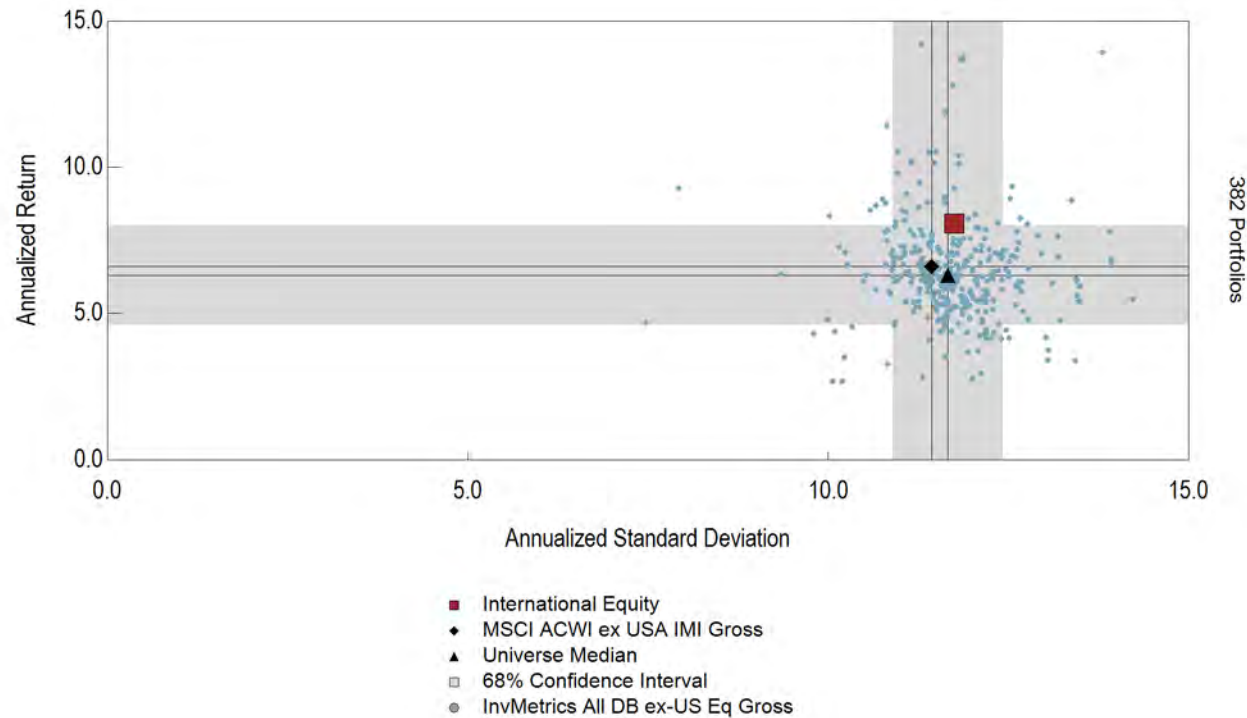
Period Ending: September 30, 2019



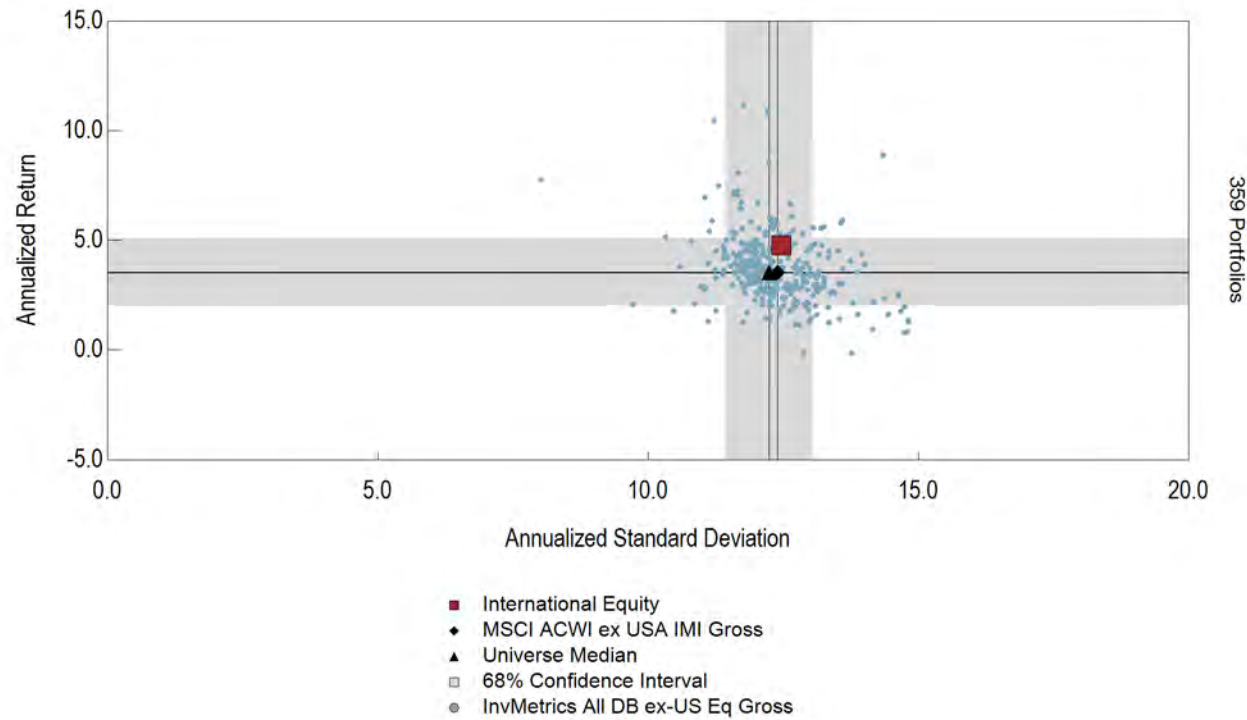
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
US Equity	10.81%	19	12.83%	78	0.77	38	0.18	25	1.96%	51
Russell 3000	10.44%	34	12.17%	34	0.78	31	--	--	0.00%	1
InvMetrics All DB US Eq Gross Median	10.12%	--	12.37%	--	0.74	--	-0.22	--	1.93%	--

International Equity Risk vs. Return (3 Years)

Period Ending: September 30, 2019



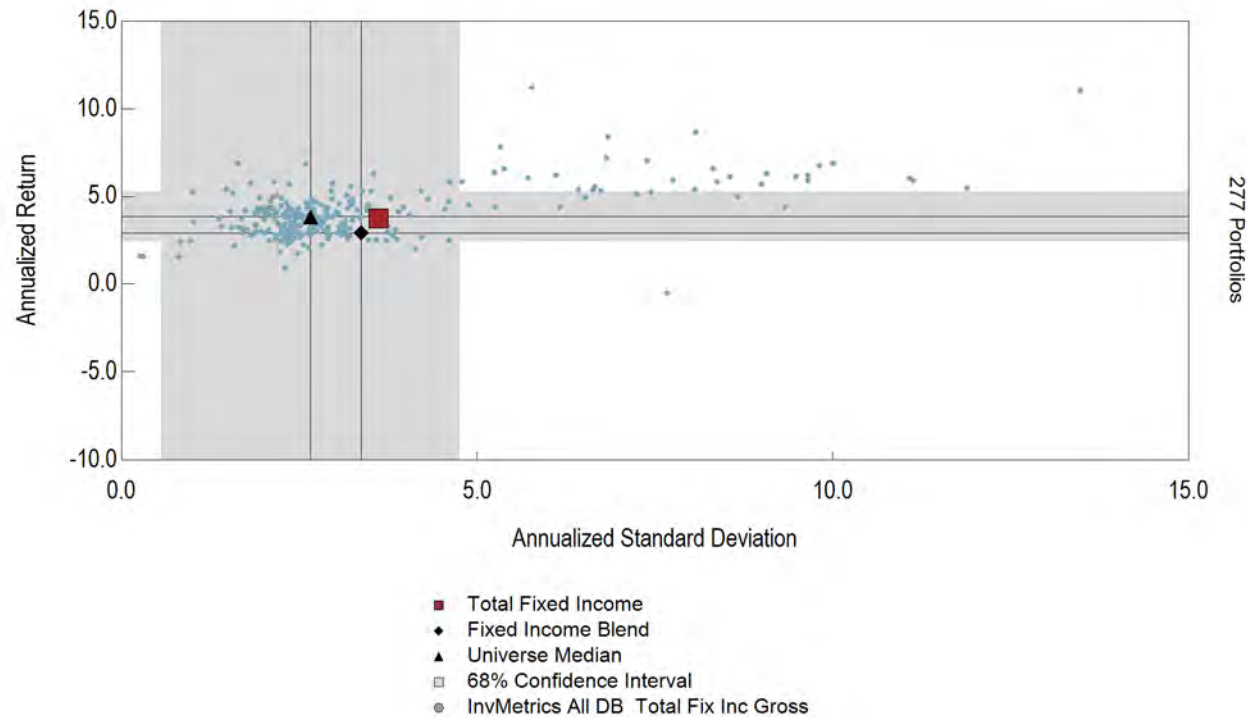
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
International Equity	8.07%	12	11.75%	57	0.56	13	1.01	6	1.46%	13
MSCI ACWI ex USA IMI Gross	6.60%	41	11.44%	35	0.44	37	--	--	0.00%	1
InvMetrics All DB ex-US Eq Gross Median	6.30%	--	11.66%	--	0.41	--	-0.06	--	2.50%	--



	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
International Equity	4.76%	18	12.47%	64	0.30	20	0.87	9	1.43%	6
MSCI ACWI ex USA IMI Gross	3.52%	51	12.39%	61	0.21	52	--	--	0.00%	1
InvMetrics All DB ex-US Eq Gross Median	3.54%	--	12.24%	--	0.21	--	0.16	--	2.81%	--

Total Fixed Income
Risk vs. Return (3 Years)

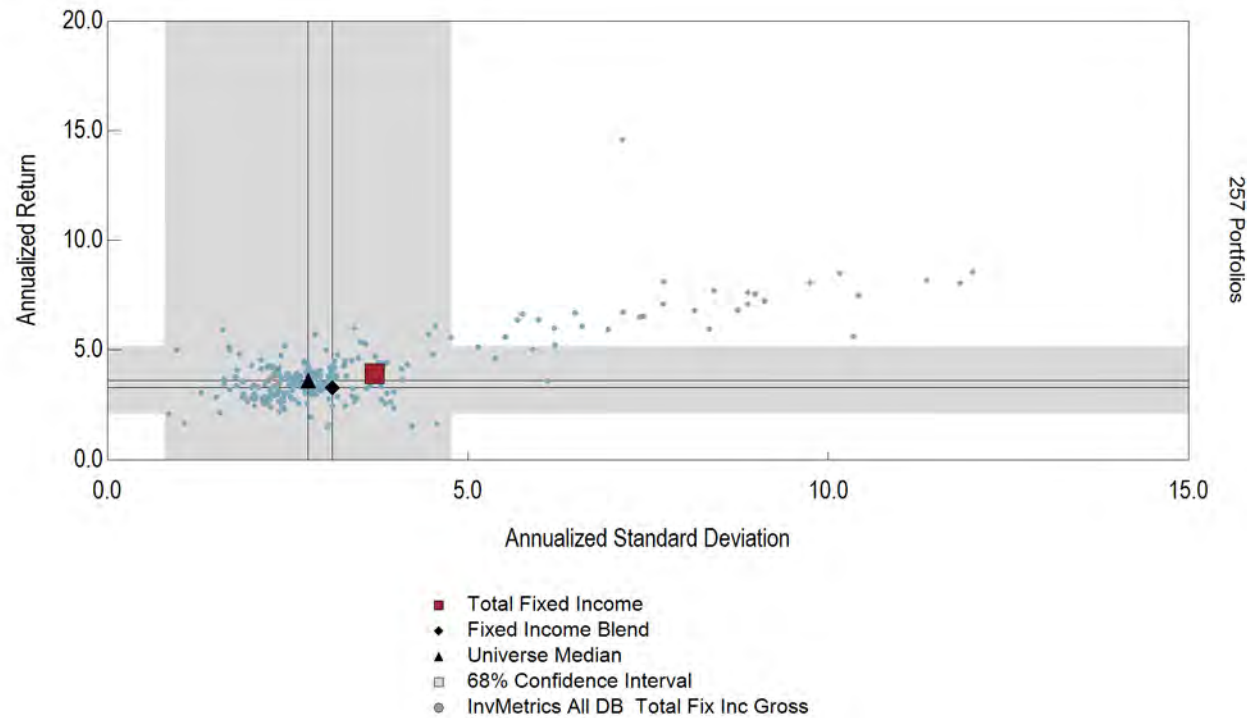
Period Ending: September 30, 2019



	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fixed Income	3.74%	54	3.61%	80	0.61	61	0.50	54	1.66%	51
Fixed Income Blend	2.91%	79	3.37%	76	0.40	89	--	--	0.00%	1
InvMetrics All DB Total Fix Inc Gross Median	3.84%	--	2.66%	--	0.73	--	0.52	--	1.64%	--

Total Fixed Income
Risk vs. Return (5 Years)

Period Ending: September 30, 2019



	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fixed Income	3.91%	37	3.71%	78	0.79	68	0.35	38	1.79%	53
Fixed Income Blend	3.29%	64	3.12%	69	0.74	77	--	--	0.00%	1
InvMetrics All DB Total Fix Inc Gross Median	3.62%	--	2.79%	--	0.89	--	0.23	--	1.73%	--

Equity environment

- U.S. equities outperformed international in Q3 (S&P 500 +1.7%, MSCI EAFE -1.1%) as domestic markets continued to lead. Some convergence of U.S. interest rates with the ultra-low rates of international markets likely supported equity prices over the quarter. We expect further declines in U.S. yields to be supportive of stocks, as low rates bolster earnings and reduce the attractiveness of fixed income.
- The S&P 500 has delivered moderate returns of 4.3% over the past year. Returns have likely been limited by flat earnings growth of 1.7%, and relatively high valuations. In the third quarter, S&P 500 YoY earnings growth is expected to be -4.1%, which would put U.S. equities on track for three consecutive quarters of earnings loss.
- The U.S. dollar appreciated 2.6% in Q3 relative to a trade-weighted basket of currencies, which created volatility and currency losses for unhedged investors.
- A large rotation from momentum stocks into value stocks occurred in Q3. The selloff was a multi-standard deviation event, with performance of the prior five months largely reversed in several days. The fall was likely due to a combination of better than expected economic news, monetary/fiscal stimulus expectations, and extreme positioning in these factors.
- Value stock performance was on par with growth stocks during the third quarter (Russell 1000 Value +1.4%, Russell 1000 Growth +1.5%) while small cap stocks underperformed large stocks (Russell 2000 -2.4%, Russell 1000 +1.4%). Year-to-date, the size factor and value factor have continued their run of underperformance.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (S&P 500)	1.7%		4.3%	
US Small Cap (Russell 2000)	(2.4%)		(8.9%)	
US Large Value (Russell 1000 Value)	1.4%		4.0%	
US Large Growth (Russell 1000 Growth)	1.5%		3.7%	
International Large (MSCI EAFE)	(1.1%)	2.3%	(1.3%)	4.2%
Eurozone (Euro Stoxx 50)	(1.4%)	3.8%	1.3%	11.5%
U.K. (FTSE 100)	(2.2%)	1.4%	(2.7%)	5.4%
Japan (NIKKEI 225)	2.9%	3.6%	(8.2%)	(5.9%)
Emerging Markets (MSCI Emerging Markets)	(4.2%)	(2.2%)	(2.0%)	(0.4%)

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 9/30/19

Domestic equity

U.S. equities outpaced international in the third quarter (S&P 500 +1.7%, MSCI EAFE -1.1%) as domestic markets continued to lead. Some convergence of U.S. interest rates with the ultra-low rates of international markets likely supported equity prices over the quarter. We expect further declines in U.S. yields to be supportive of stocks, as low rates bolster earnings and reduce the attractiveness of fixed income.

The S&P 500 has delivered moderate returns of 4.3% over the past year. Returns have likely been limited by slow earnings growth of 1.7%, and relatively high valuations. In the third quarter, S&P 500 YoY earnings growth is expected to be -4.1%, which would put U.S.

equities on track for three consecutive quarters of earnings loss. Revenue growth in Q3 is expected to be 2.8% YoY. Investors may point to seemingly lofty earnings growth expectations for 2020 as reason for optimism, though in reality this is a fairly average forecast. Growth expectations are typically high initially, and then fall to a more realistic level as time passes.

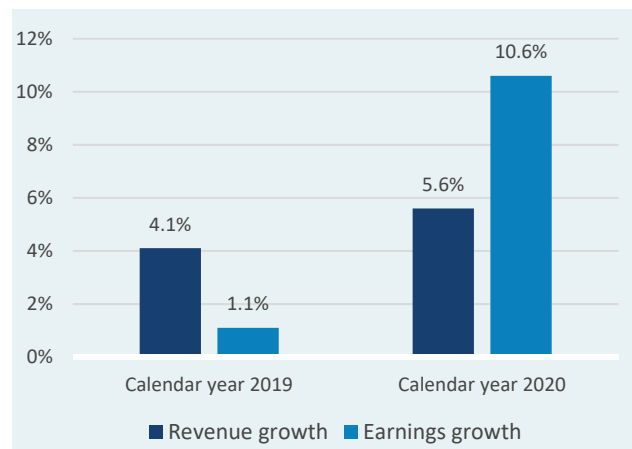
U.S. equities offer lower yields and less attractive valuations relative to other markets around the world, which suggests domestic equities might underperform over the long-term. However, U.S. may continue to outperform over the shorter-term due to relative economic and market strength.

U.S. EQUITIES



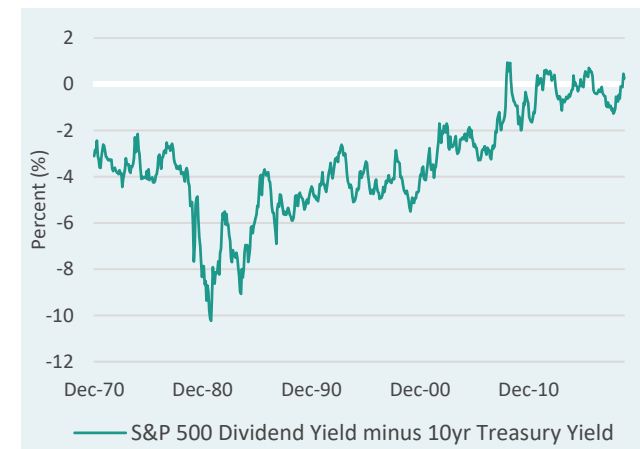
Source: Standard & Poor's, as of 9/30/19

Q3 2019 EARNINGS EXPECTATIONS



Source: FactSet, as of 10/11/19

RELATIVE YIELDS



Source: Standard & Poor's, as of 9/30/19

Domestic equity size & style

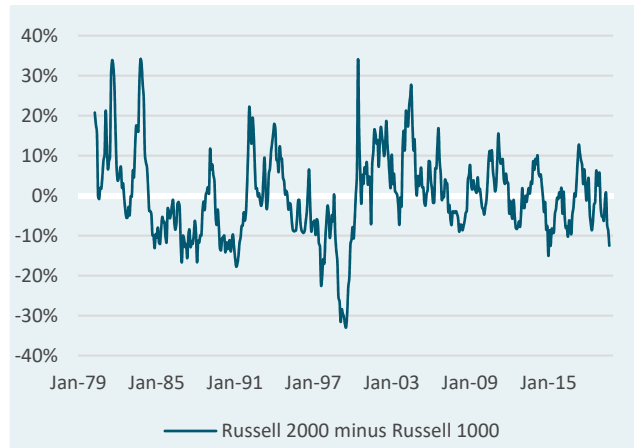
Value stock performance was on par with growth stocks during the third quarter (Russell 1000 Value +1.4%, Russell 1000 Growth +1.5%) while small cap stocks underperformed large stocks (Russell 2000 -2.4%, Russell 1000 +1.4%). Year-to-date, the size factor and value factor have extended their run of weakness.

The impact of sector performance on the value premium was mixed in the third quarter. Financials (+2.0%) and Utilities (+9.3%) outperformed the overall index (S&P 500 +1.7%) which boosted value, but poor Energy (-6.3%) performance counteracted these effects. Information Technology beat the

overall index (+3.3%) which acted as a headwind for value stocks.

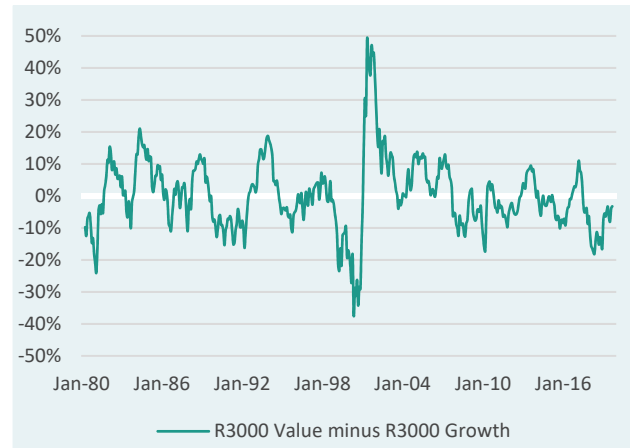
Value stocks have exhibited a long run of underperformance over the past decade. Our view has been that value stocks did not appear attractive, despite persistent performance pain. This was because value stocks had underperformed due to fundamental reasons rather than due to prices becoming stretched. Now, for the first time in this cycle it appears value prices are becoming unusually cheap, as indicated by a large disparity between Russell 1000 Value and Russell 1000 Growth P/E multiples.

SMALL CAP VS LARGE CAP (YOY)



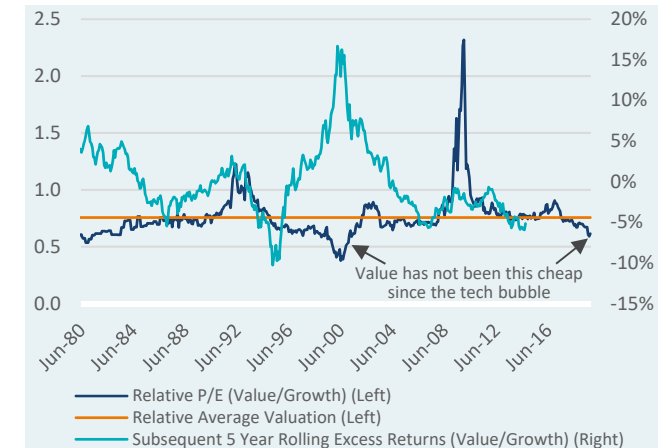
Source: FTSE, as of 9/30/19

VALUE VS GROWTH (YOY)



Source: FTSE, as of 9/30/19

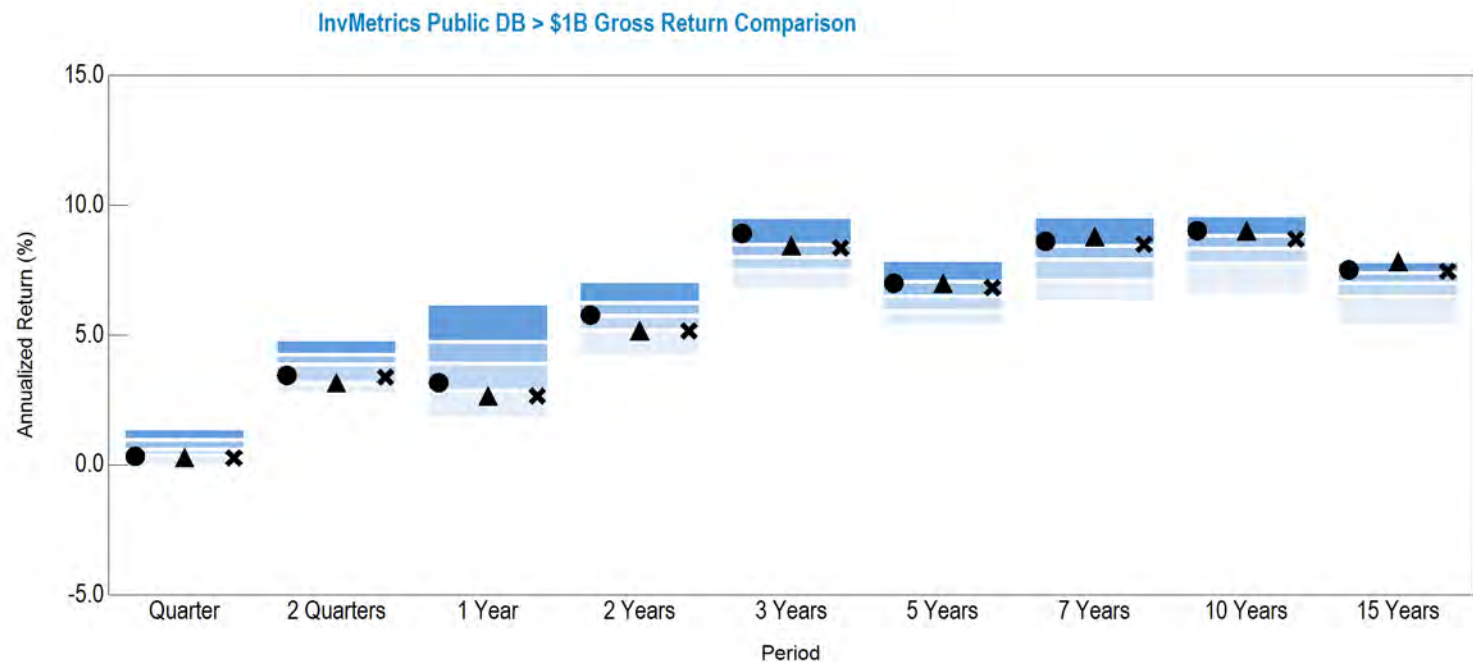
VALUE STARTING TO LOOK CHEAP



Source: Russell, Bloomberg, as of 9/30/19

Total Fund
Peer Universe Comparison

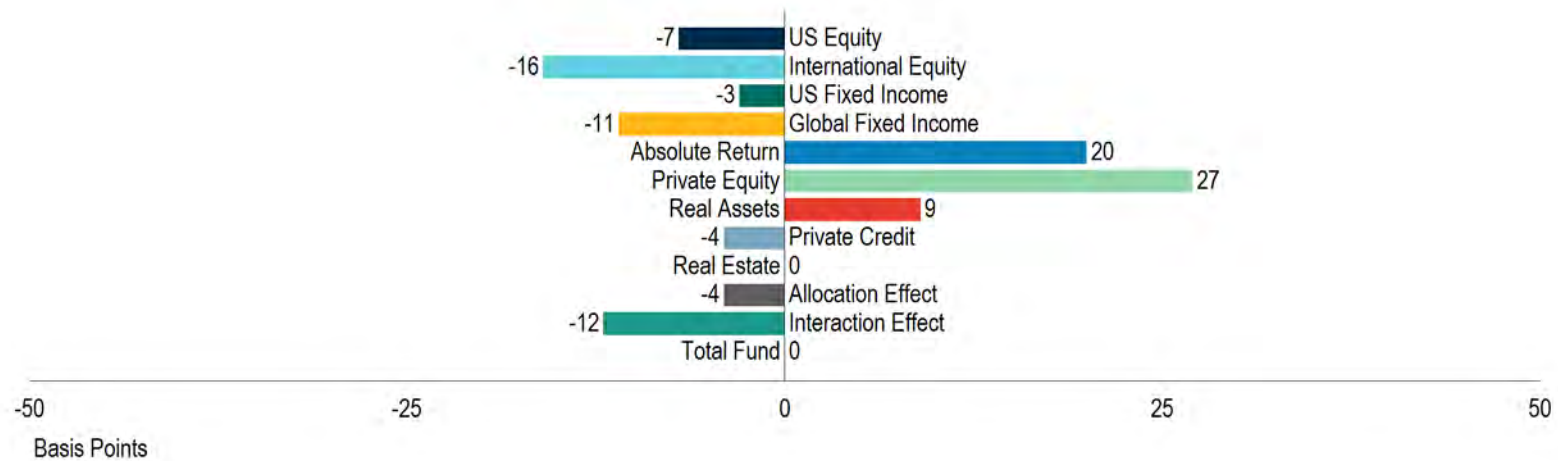
Period Ending: September 30, 2019



	Return (Rank)								
5th Percentile	1.40	4.82	6.19	7.07	9.53	7.89	9.55	9.62	7.84
25th Percentile	0.97	4.26	4.75	6.25	8.50	7.05	8.46	8.83	7.41
Median	0.60	3.88	3.92	5.77	8.02	6.49	7.94	8.34	7.01
75th Percentile	0.36	3.18	2.87	5.20	7.50	5.96	7.11	7.78	6.50
95th Percentile	-0.05	2.72	1.83	4.20	6.80	5.35	6.29	6.60	5.39
# of Portfolios	81	81	81	81	81	80	79	74	70
● Total Fund	0.33 (76)	3.45 (72)	3.16 (69)	5.77 (50)	8.92 (14)	7.00 (27)	8.61 (21)	9.02 (19)	7.51 (18)
▲ Policy Index	0.29 (81)	3.16 (77)	2.66 (81)	5.18 (76)	8.45 (27)	7.00 (27)	8.80 (18)	9.02 (19)	7.82 (6)
✕ Allocation Index	0.26 (81)	3.38 (73)	2.65 (81)	5.16 (77)	8.36 (31)	6.83 (31)	8.50 (23)	8.69 (35)	7.46 (22)

Total Fund
Performance Attribution (One Quarter)

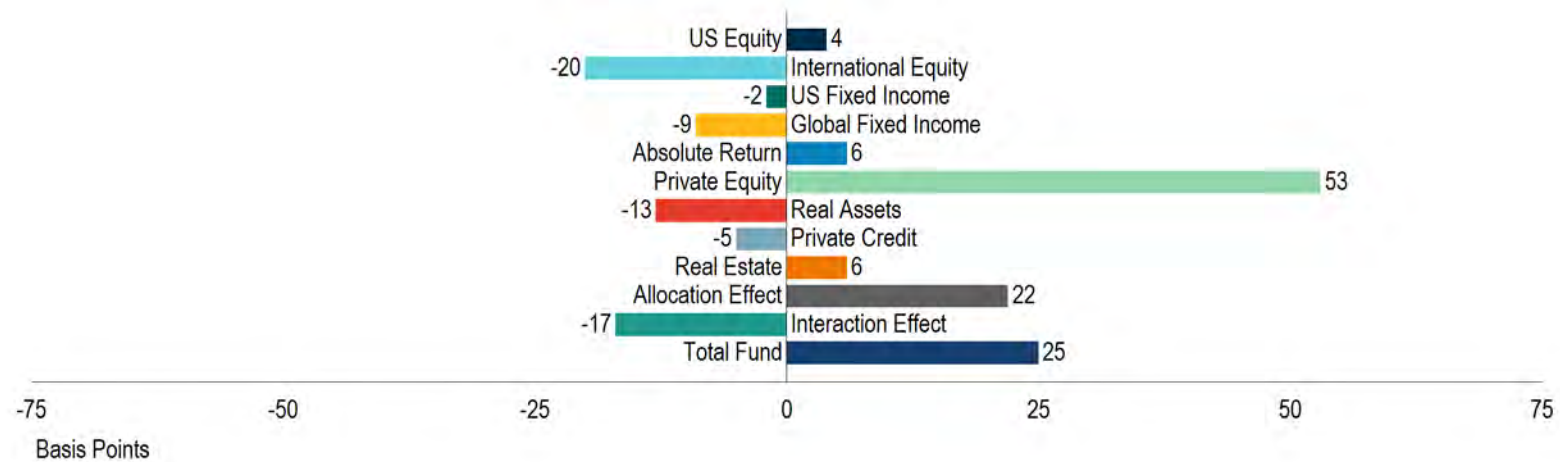
Period Ending: September 30, 2019



	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	0.88%	1.16%	-0.28%	-0.07%	0.06%	-0.01%	-0.02%
International Equity	-2.22%	-1.62%	-0.61%	-0.16%	-0.04%	-0.01%	-0.21%
US Fixed Income	2.06%	2.27%	-0.21%	-0.03%	-0.03%	0.00%	-0.05%
Global Fixed Income	-2.65%	0.85%	-3.50%	-0.11%	0.01%	-0.04%	-0.14%
Absolute Return	1.28%	-0.90%	2.18%	0.20%	0.00%	0.00%	0.19%
Private Equity	5.92%	2.45%	3.47%	0.27%	-0.03%	-0.07%	0.17%
Real Assets	-1.32%	-3.09%	1.77%	0.09%	0.03%	-0.03%	0.09%
Private Credit	0.00%	0.99%	-0.99%	-0.04%	-0.03%	0.04%	-0.03%
Real Estate	1.37%	1.31%	0.06%	0.00%	-0.01%	0.00%	-0.01%
Total	0.34%	0.33%	0.00%	0.17%	-0.04%	-0.12%	0.00%

Total Fund
Performance Attribution (6 Months)

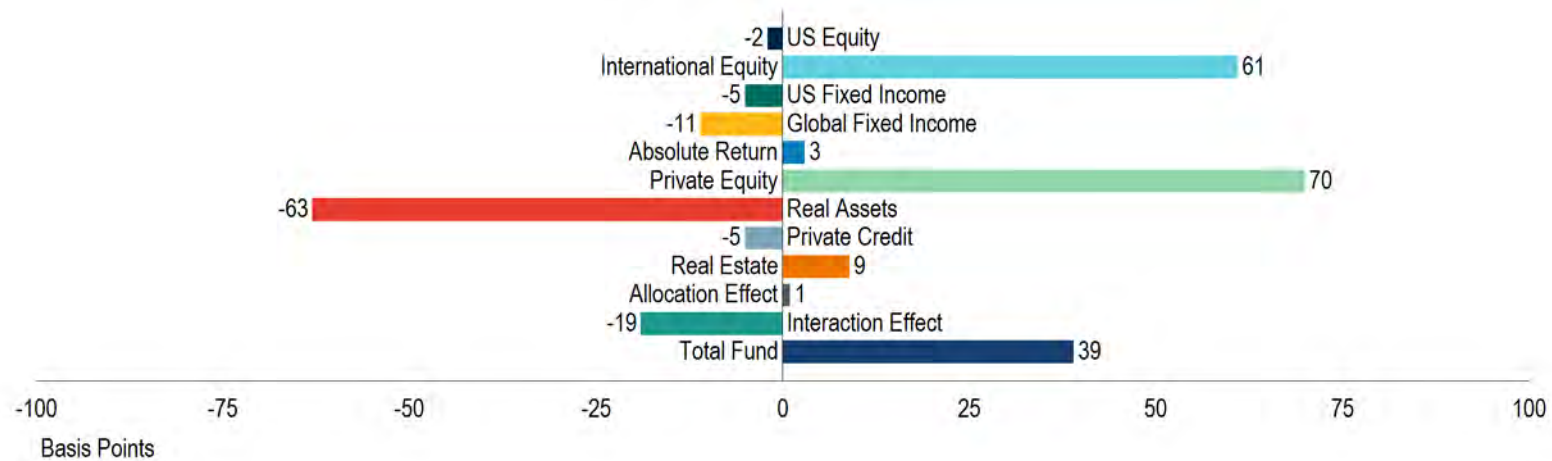
Period Ending: September 30, 2019



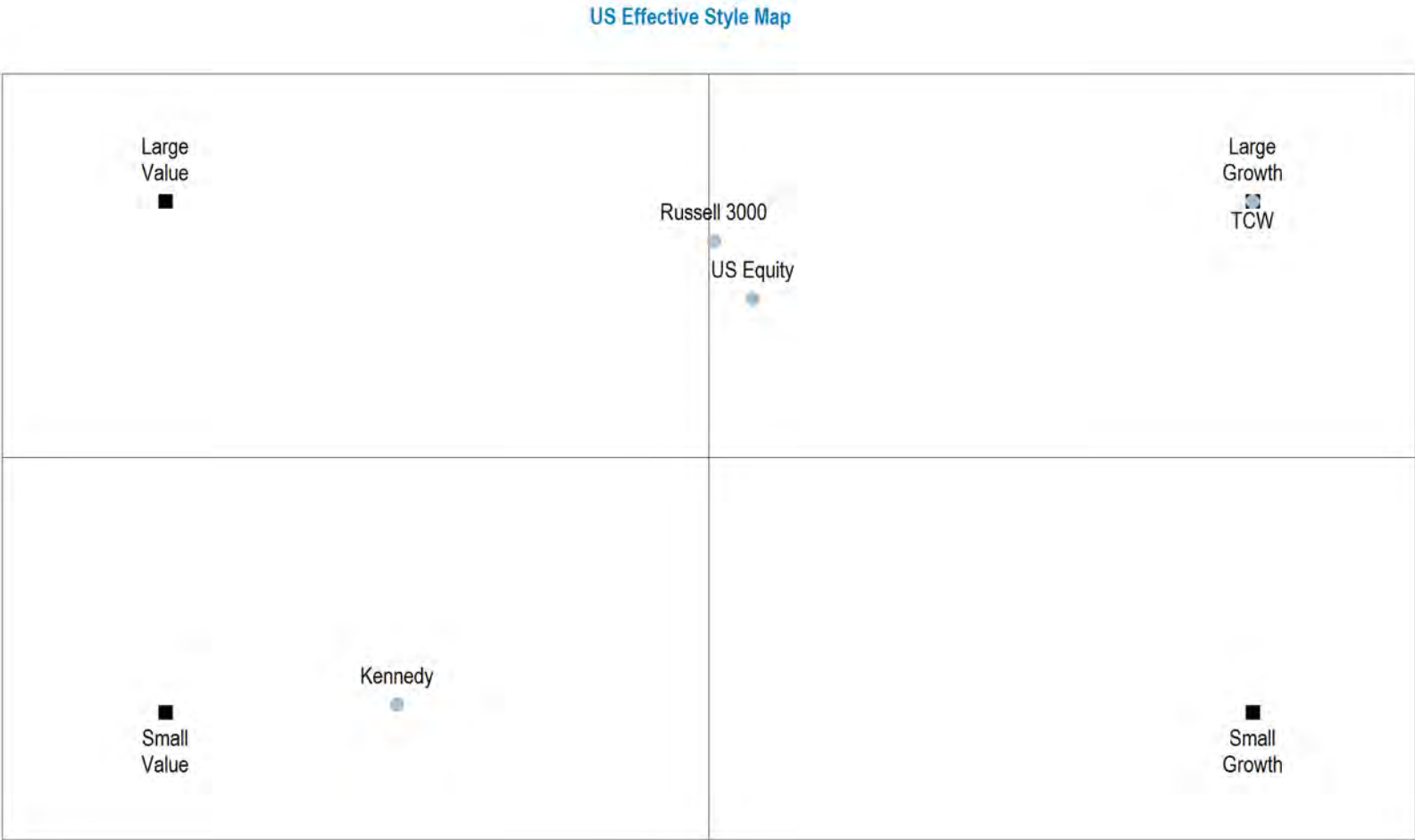
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	5.43%	5.31%	0.13%	0.04%	0.16%	0.00%	0.20%
International Equity	0.50%	1.31%	-0.81%	-0.20%	-0.04%	-0.01%	-0.25%
US Fixed Income	5.30%	5.42%	-0.12%	-0.02%	-0.04%	0.00%	-0.06%
Global Fixed Income	1.10%	4.45%	-3.35%	-0.09%	0.03%	-0.05%	-0.11%
Absolute Return	1.18%	0.58%	0.60%	0.06%	-0.01%	0.00%	0.04%
Private Equity	12.16%	5.99%	6.17%	0.53%	-0.05%	-0.19%	0.29%
Real Assets	-2.87%	-0.76%	-2.10%	-0.13%	0.03%	0.03%	-0.06%
Private Credit	0.00%	2.69%	-2.69%	-0.05%	0.14%	0.05%	0.14%
Real Estate	3.10%	2.31%	0.79%	0.06%	0.00%	-0.01%	0.06%
Total	3.45%	3.20%	0.25%	0.20%	0.22%	-0.17%	0.25%

Total Fund
Performance Attribution (One Year)

Period Ending: September 30, 2019

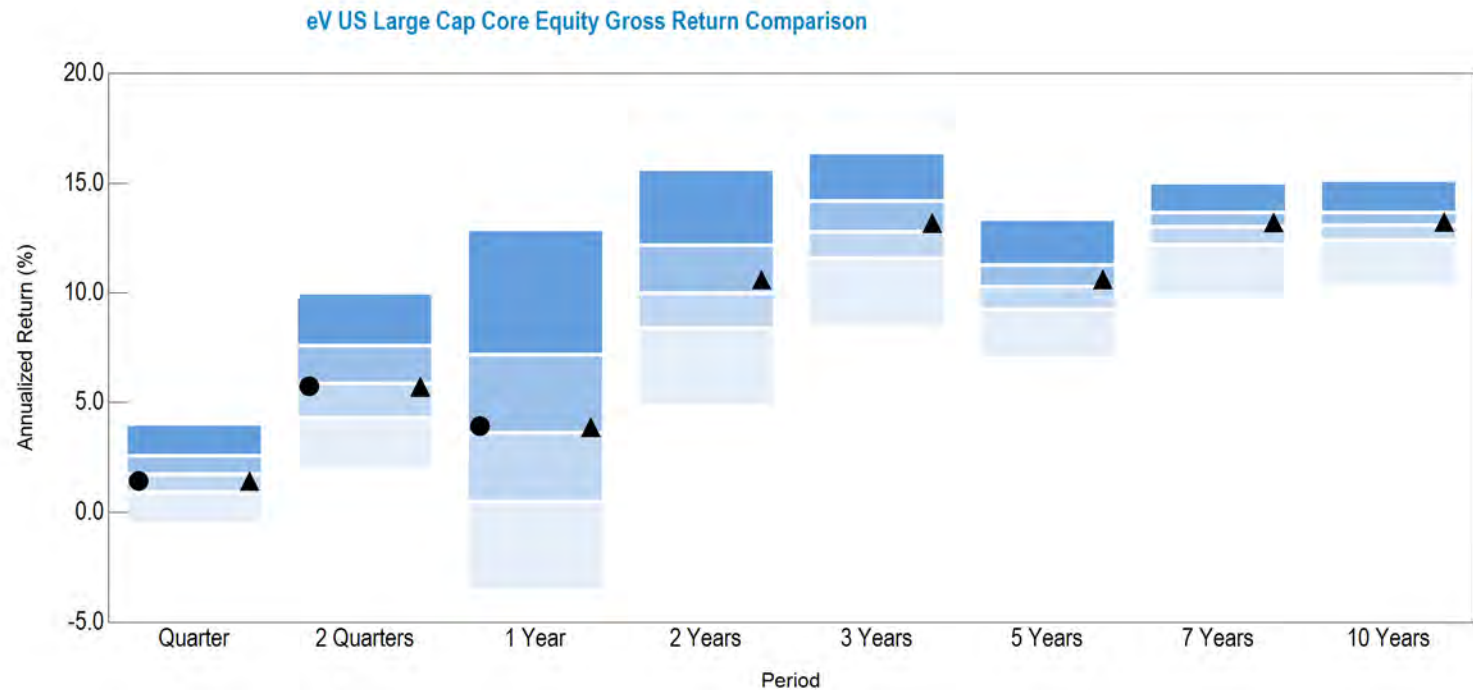


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	2.74%	2.92%	-0.18%	-0.02%	0.01%	-0.02%	-0.03%
International Equity	0.91%	-1.35%	2.26%	0.61%	-0.04%	0.01%	0.58%
US Fixed Income	9.88%	10.30%	-0.42%	-0.05%	-0.09%	0.01%	-0.14%
Global Fixed Income	3.47%	8.13%	-4.66%	-0.11%	0.07%	-0.06%	-0.10%
Absolute Return	0.43%	0.01%	0.42%	0.03%	-0.03%	-0.02%	-0.02%
Private Equity	12.22%	4.12%	8.10%	0.70%	-0.03%	-0.29%	0.39%
Real Assets	-12.38%	-1.80%	-10.58%	-0.63%	0.03%	0.15%	-0.45%
Private Credit	0.00%	3.10%	-3.10%	-0.05%	0.14%	0.05%	0.14%
Real Estate	6.71%	5.59%	1.12%	0.09%	-0.07%	-0.01%	0.01%
Total	3.15%	2.76%	0.39%	0.57%	0.01%	-0.19%	0.39%



Large Cap Core Equity Peer Universe Comparison

Period Ending: September 30, 2019



	Return (Rank)													
5th Percentile	4.03		10.01		12.90		15.63		16.39		13.35		15.03	15.15
25th Percentile	2.61		7.62		7.20		12.18		14.19		11.29		13.66	13.69
Median	1.73		5.88		3.64		10.00		12.79		10.30		13.05	13.09
75th Percentile	0.94		4.33		0.49		8.39		11.60		9.28		12.23	12.42
95th Percentile	-0.49		2.02		-3.55		4.87		8.46		7.03		9.89	10.41
# of Portfolios	294		294		294		290		282		266		241	206
● BlackRock Russell 1000 Index Fund	1.43	(60)	5.74	(53)	3.93	(47)	--	(--)	--	(--)	--	(--)	--	(--)
▲ Russell 1000	1.42	(60)	5.73	(53)	3.87	(48)	10.60	(44)	13.19	(43)	10.62	(42)	13.21	(42)

BlackRock Russell 1000 Index Fund

Equity Only Summary Statistics

Period Ending: September 30, 2019

Characteristics

	Portfolio	Russell 1000
Number of Holdings	1,000	997
Weighted Avg. Market Cap. (\$B)	209.4	208.9
Median Market Cap. (\$B)	9.7	9.8
Price To Earnings	20.8	20.7
Price To Book	3.6	3.6
Price To Sales	2.1	2.1
Return on Equity (%)	24.7	24.6
Yield (%)	1.9	1.9
Beta (holdings; domestic)	1.0	1.0

Top Holdings

MICROSOFT	3.8%
APPLE	3.7%
AMAZON.COM	2.6%
FACEBOOK CLASS A	1.5%
BERKSHIRE HATHAWAY 'B'	1.5%
JP MORGAN CHASE & CO.	1.4%
ALPHABET 'C'	1.3%
ALPHABET A	1.3%
JOHNSON & JOHNSON	1.3%
PROCTER & GAMBLE	1.1%

Best Performers

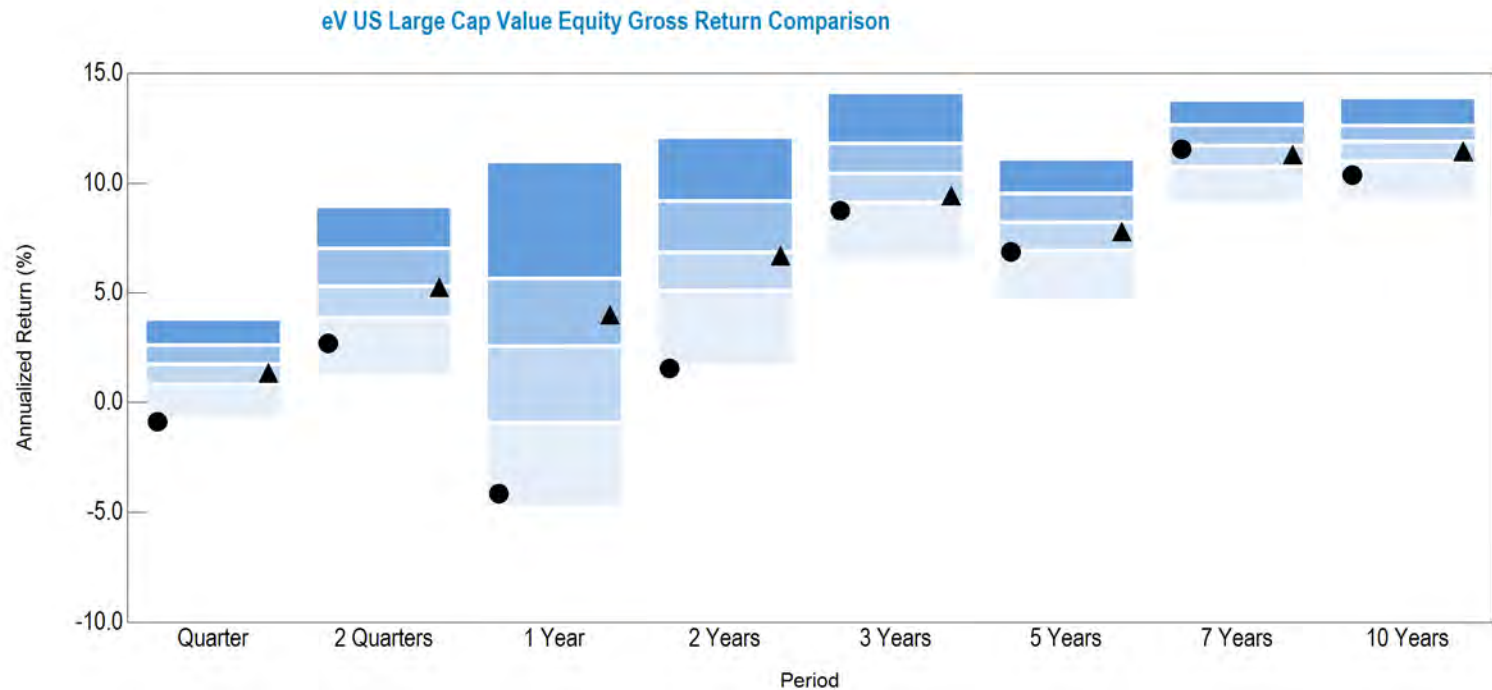
	Return %
INSULET (PODD)	38.2%
CYRUSONE (CONE)	37.9%
KLA (KLAC)	35.7%
NEW YORK COMMUNITY BANCORP (NYCB)	27.6%
ENTEGRIS (ENTG)	26.3%
PILGRIMS PRIDE (PPC)	26.2%
WESTERN DIGITAL (WDC)	25.4%
DOCUSIGN (DOCU)	24.6%
TARGET (TGT)	24.4%
XPO LOGISTICS (XPO)	23.8%

Worst Performers

	Return %
2U (TWOU)	-56.7%
PG&E (PCG)	-56.4%
COVETRUS (CVET)	-51.4%
SAREPTA THERAPEUTICS (SRPT)	-50.4%
NEKTAR THERAPEUTICS (NKTR)	-48.8%
DXC TECHNOLOGY (DXC)	-46.2%
ANTERO RESOURCES (AR)	-45.4%
RANGE RES. (RRC)	-45.0%
PLURALSIGHT A (PS)	-44.6%
FLUOR (FLR)	-42.5%

Large Cap Value Equity Peer Universe Comparison

Period Ending: September 30, 2019



	Return (Rank)							
5th Percentile	3.80	8.95	10.98	12.10	14.12	11.10	13.79	13.90
25th Percentile	2.64	7.04	5.66	9.20	11.84	9.56	12.68	12.65
Median	1.77	5.31	2.57	6.88	10.46	8.23	11.73	11.91
75th Percentile	0.85	3.90	-0.89	5.11	9.15	6.96	10.78	11.05
95th Percentile	-0.68	1.20	-4.75	1.68	6.52	4.61	9.11	9.30
# of Portfolios	314	314	314	313	309	304	289	258
● Pzena	-0.87 (97)	2.70 (92)	-4.15 (94)	1.55 (96)	8.75 (80)	6.87 (77)	11.55 (57)	10.37 (88)
▲ Russell 1000 Value	1.36 (62)	5.25 (51)	4.00 (40)	6.69 (53)	9.43 (71)	7.79 (64)	11.30 (64)	11.46 (65)

Characteristics

	Portfolio	Russell 1000 Value
Number of Holdings	39	760
Weighted Avg. Market Cap. (\$B)	61.9	114.2
Median Market Cap. (\$B)	20.8	9.0
Price To Earnings	13.2	16.7
Price To Book	1.6	2.2
Price To Sales	0.7	1.5
Return on Equity (%)	6.8	14.9
Yield (%)	2.6	2.6
Beta (holdings; domestic)	1.3	1.0

Top Holdings

AMERICAN INTL.GP.	4.1%
CAPITAL ONE FINL.	4.1%
CITIGROUP	4.0%
GENERAL ELECTRIC	3.9%
WELLS FARGO & CO	3.9%
LEAR	3.7%
NATIONAL OILWELL VARCO	3.5%
PVH	3.5%
NEWELL BRANDS (XSC)	3.3%
HEWLETT PACKARD ENTER.	3.2%

Best Performers

	Return %
NEWELL BRANDS (XSC) (NWL)	23.1%
EDISON INTL. (EIX)	13.8%
AXIS CAPITAL HDG. (AXS)	11.9%
WELLS FARGO & CO (WFC)	7.8%
AXA EQUITABLE HOLDINGS (EQH)	6.8%
KKR AND A (KKR)	6.8%
CENOVUS ENERGY (NYS) (CVE)	6.8%
JP MORGAN CHASE & CO. (JPM)	6.0%
AMGEN (AMGN)	5.8%
AMERICAN INTL.GP. (AIG)	5.1%

Worst Performers

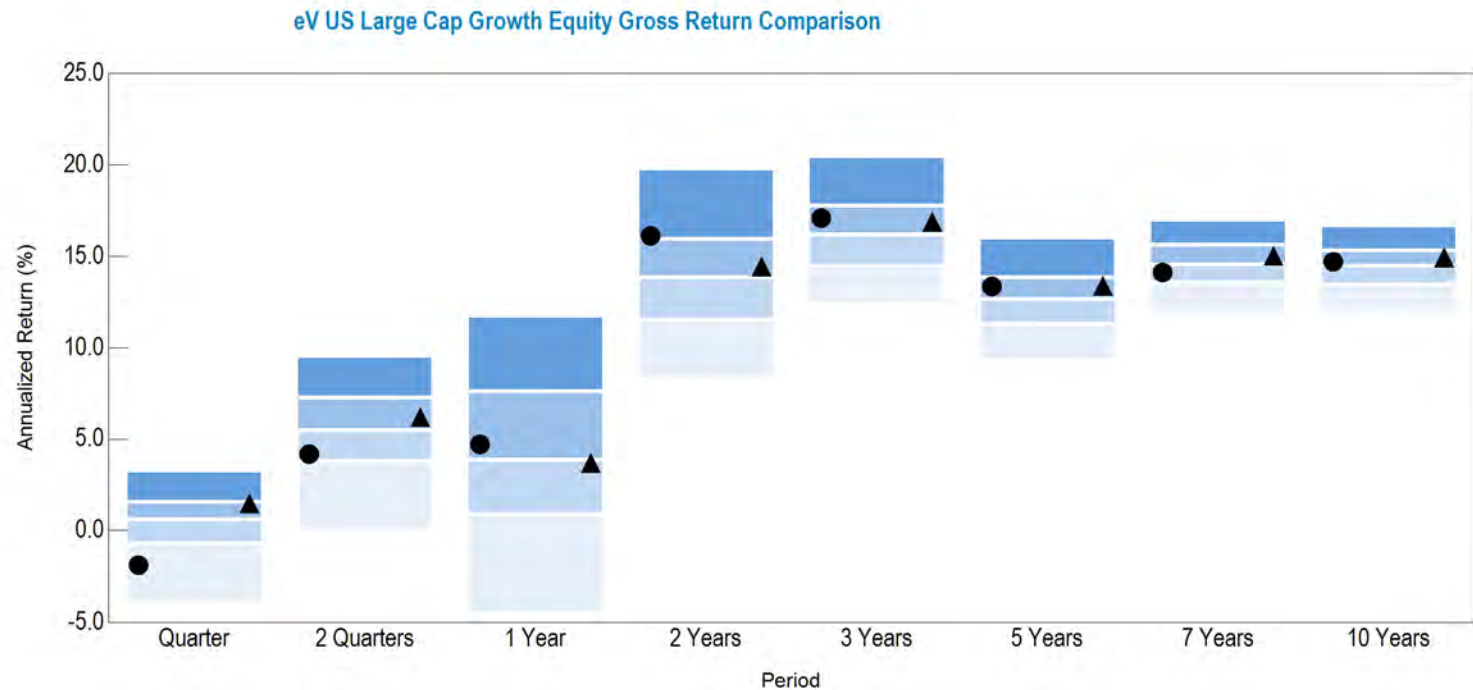
	Return %
HALLIBURTON (HAL)	-16.3%
MOHAWK INDUSTRIES (MHK)	-15.9%
GENERAL ELECTRIC (GE)	-14.8%
LEAR (LEA)	-14.7%
FORD MOTOR (F)	-9.1%
ROYAL DUTCH SHELL A ADR 1:2 (RDS.A)	-8.0%
GILDAN ACTIVEWEAR SBVTG. 'A' (NYS) (GIL)	-7.9%
PVH (PVH)	-6.7%
BAKER HUGHES COMPANY (BKR)	-5.1%
COGNIZANT TECH.SLTN.'A' (CTSH)	-4.6%

Pzena Performance Attribution vs. Russell 1000 Value

	Attribution Effects						Returns		Sector Weights		
	Total	Selection	Allocation		Interaction	Portfolio	Benchmark	Portfolio	Benchmark		
	Effects	Effect	Effect		Effects						
Energy	-0.30%	0.01%	-0.32%		0.00%	-6.60%	-6.70%	12.76%	8.84%		
Materials	0.15%	--	0.15%		--	--	-2.26%	0.00%	4.04%		
Industrials	-0.42%	-0.37%	-0.02%		-0.03%	-6.39%	-1.76%	8.60%	7.89%		
Consumer Discretionary	-1.29%	-0.43%	0.03%		-0.88%	-6.54%	1.65%	16.11%	5.30%		
Consumer Staples	-0.43%	--	-0.43%		--	--	6.85%	0.00%	7.81%		
Health Care	0.66%	0.79%	0.26%		-0.39%	3.14%	-2.05%	7.72%	15.21%		
Financials	0.22%	0.04%	0.15%		0.03%	2.51%	2.33%	38.80%	22.56%		
Information Technology	-0.11%	-0.18%	0.03%		0.04%	-1.60%	0.20%	7.49%	9.76%		
Communication Services	-0.53%	-0.65%	-0.11%		0.23%	-3.51%	5.75%	4.61%	7.07%		
Utilities	-0.09%	0.36%	-0.25%		-0.20%	13.81%	8.25%	2.86%	6.45%		
Real Estate	-0.34%	--	-0.34%		--	--	8.07%	0.00%	5.06%		
Cash	-0.01%	0.00%	-0.01%		0.00%	0.50%	--	1.05%	0.00%		
Portfolio	-2.49%	=	-0.43%	+	-0.85%	+	-1.21%	-1.11%	1.38%	100.00%	100.00%

Large Cap Growth Equity Peer Universe Comparison

Period Ending: September 30, 2019



	Return (Rank)							
5th Percentile	3.28	9.55	11.76	19.79	20.44	16.01	16.98	16.68
25th Percentile	1.61	7.29	7.64	15.97	17.79	13.89	15.67	15.34
Median	0.63	5.50	3.90	13.86	16.23	12.70	14.57	14.50
75th Percentile	-0.70	3.85	0.91	11.57	14.50	11.31	13.61	13.51
95th Percentile	-3.90	0.06	-4.45	8.34	12.46	9.32	12.00	12.03
# of Portfolios	239	239	239	237	231	226	212	202
● TCW	-1.86 (88)	4.18 (72)	4.71 (43)	16.12 (24)	17.10 (36)	13.35 (36)	14.12 (66)	14.70 (43)
▲ Russell 1000 Growth	1.49 (29)	6.20 (41)	3.71 (53)	14.45 (44)	16.89 (40)	13.39 (35)	15.02 (38)	14.94 (35)

Characteristics

	Portfolio	Russell 1000 Growth
Number of Holdings	33	526
Weighted Avg. Market Cap. (\$B)	185.0	300.6
Median Market Cap. (\$B)	58.1	12.2
Price To Earnings	39.0	26.7
Price To Book	8.2	8.0
Price To Sales	5.1	3.1
Return on Equity (%)	28.5	35.4
Yield (%)	0.5	1.2
Beta (holdings; domestic)	1.1	1.0

Top Holdings

VISA 'A'	7.0%
AMAZON.COM	6.2%
ALPHABET 'C'	5.8%
AMERICAN TOWER	5.8%
ADOBE (NAS)	5.4%
FACEBOOK CLASS A	4.9%
SERVICENOW	4.8%
SALESFORCE.COM	4.3%
PAYPAL HOLDINGS	3.8%
MASTERCARD	3.6%

Best Performers

	Return %
ASML HLDG.ADR 1:1 (ASML)	19.5%
EQUINIX REIT (EQIX)	14.9%
ALPHABET 'C' (GOOG)	12.8%
HOME DEPOT (HD)	12.2%
TRANSUNION (TRU)	10.4%
CHUBB (CB)	10.1%
ZOETIS A (ZTS)	9.9%
COSTCO WHOLESALE (COST)	9.3%
AMERICAN TOWER (AMT)	8.6%
S&P GLOBAL (SPGI)	7.8%

Worst Performers

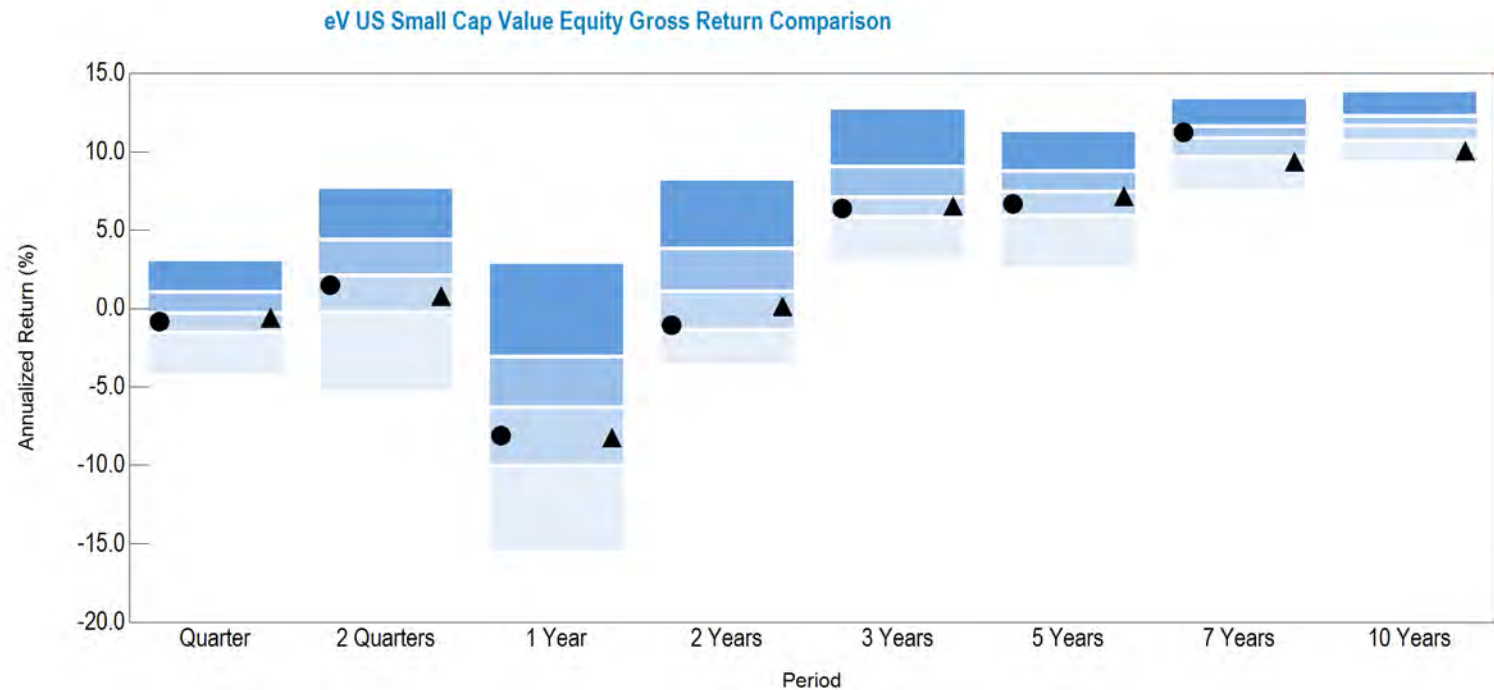
	Return %
CONCHO RESOURCES (CXO)	-34.1%
ALIGN TECHNOLOGY (ALGN)	-33.9%
ULTA BEAUTY (ULTA)	-27.7%
ALEXION PHARMS. (ALXN)	-25.2%
BIOMARIN PHARM. (BMRN)	-21.3%
TRADE DESK CL.A (TTD)	-17.7%
ILLUMINA (ILMN)	-17.4%
PAYPAL HOLDINGS (PYPL)	-9.5%
MONSTER BEVERAGE (MNST)	-9.0%
AMAZON.COM (AMZN)	-8.3%

TCW Performance Attribution vs. Russell 1000 Growth

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.19%	-0.12%	-0.03%	-0.04%	-34.08%	-13.70%	0.80%	0.61%			
Materials	-0.05%	--	-0.05%	--	--	4.17%	0.00%	1.88%			
Industrials	-0.04%	-0.02%	-0.02%	0.00%	2.35%	2.55%	9.33%	11.60%			
Consumer Discretionary	-0.90%	-1.15%	0.04%	0.22%	-7.10%	0.43%	12.44%	15.33%			
Consumer Staples	-0.24%	-0.25%	-0.03%	0.04%	0.58%	4.85%	4.82%	5.78%			
Health Care	-1.10%	-1.45%	0.11%	0.24%	-14.90%	-3.51%	10.64%	12.71%			
Financials	0.42%	0.31%	-0.02%	0.13%	7.72%	0.82%	6.34%	4.48%			
Information Technology	-2.22%	-2.18%	0.02%	-0.07%	-2.84%	3.72%	34.21%	33.18%			
Communication Services	0.24%	0.26%	0.03%	-0.04%	2.37%	0.25%	10.12%	12.07%			
Utilities	0.00%	--	--	--	--	--	0.00%	0.00%			
Real Estate	0.60%	0.09%	0.30%	0.21%	10.81%	7.06%	7.93%	2.37%			
Cash	-0.04%	0.00%	-0.04%	0.00%	0.50%	--	3.38%	0.00%			
Portfolio	-3.52%	=	-4.52%	+	0.31%	+	0.69%	-1.86%	1.66%	100.00%	100.00%

Small Cap Value Equity Peer Universe Comparison

Period Ending: September 30, 2019



	Return (Rank)													
5th Percentile	3.14		7.74		2.96		8.27		12.79		11.36		13.47	
25th Percentile	1.09		4.44		-3.02		3.87		9.07		8.78		11.68	
Median	-0.24		2.15		-6.25		1.14		7.13		7.50		10.91	
75th Percentile	-1.50		-0.18		-9.97		-1.33		5.88		5.95		9.70	
95th Percentile	-4.25		-5.31		-15.55		-3.61		3.08		2.64		7.53	
# of Portfolios	217		217		217		215		213		204		197	
● Kennedy	-0.83	(63)	1.49	(55)	-8.11	(61)	-1.06	(73)	6.38	(68)	6.68	(65)	11.24	(36)
▲ Russell 2000 Value	-0.57	(59)	0.79	(64)	-8.24	(63)	0.16	(63)	6.54	(65)	7.17	(57)	9.35	(82)
													10.06	(87)

Characteristics

	Portfolio	Russell 2000 Value
Number of Holdings	294	1,387
Weighted Avg. Market Cap. (\$B)	2.4	2.0
Median Market Cap. (\$B)	1.3	0.6
Price To Earnings	16.5	14.9
Price To Book	1.8	1.6
Price To Sales	1.0	0.9
Return on Equity (%)	8.3	5.4
Yield (%)	1.8	2.2
Beta (holdings; domestic)	1.1	1.2

Top Holdings

COUSINS PROPERTIES INC	1.0%
IBERIABANK	0.9%
LUMENTUM HOLDINGS	0.9%
SJW GROUP	0.9%
SOUTH JERSEY INDUSTRY	0.9%
BLACK HILLS	0.8%
SPIRE	0.8%
STERLING BANCORP	0.8%
CENTRAL GDN.& PET 'A' NV.	0.8%
MERCURY SYSTEMS	0.8%

Best Performers

	Return %
INFINERA (INFN)	87.3%
ONE STOP SYSTEMS (OSS)	72.2%
PALOMAR HOLDINGS (PLMR)	64.0%
NEOPHOTONICS (NPTN)	45.7%
INVACARE (IVC)	44.9%
CORINDUS VASC.ROBOTICS (CVRS)	43.6%
AMBARELLA (AMBA)	42.4%
CYRUSONE (CONE)	37.9%
CHIPMOS TECHS.ADR 1:20 (IMOS)	37.6%
SYNAPTICS (SYNA)	37.1%

Worst Performers

	Return %
MALLINCKRODT (MNK)	-73.7%
FLUIDIGM (FLDM)	-62.4%
PROPETRO HOLDING (PUMP)	-56.1%
CARS COM (CARS)	-54.5%
CONCERT PHARMACEUTICALS (CNCE)	-51.0%
IMAGEWARE SYSTEMS (IWSY)	-49.2%
ANCHIANO THERAPEUTICS ADR 1:5 (ANCN)	-48.7%
RANGE RES. (RRC)	-45.0%
TRIPLE-S MANAGEMENT 'B' (GTS)	-40.9%
BRIGGS & STRATTON (BGG)	-40.4%

Kennedy Performance Attribution vs. Russell 2000 Value

	Attribution Effects							Returns		Sector Weights		
	Total		Selection		Allocation		Interaction		Portfolio	Benchmark	Portfolio	Benchmark
	Effects		Effect		Effect		Effects					
Energy	-0.65%		-0.28%		-0.28%		-0.09%		-23.79%	-18.15%	6.52%	4.95%
Materials	-0.15%		0.00%		-0.15%		0.00%		-6.18%	-6.14%	6.64%	4.26%
Industrials	-0.07%		-0.02%		-0.04%		-0.01%		-1.71%	-1.51%	14.42%	11.67%
Consumer Discretionary	-0.43%		-0.44%		-0.03%		0.04%		-1.59%	3.58%	7.68%	8.47%
Consumer Staples	0.07%		0.06%		0.01%		0.01%		6.48%	4.13%	2.63%	2.40%
Health Care	-0.17%		-0.18%		0.00%		0.00%		-12.27%	-7.92%	4.05%	4.09%
Financials	-0.06%		-0.06%		-0.02%		0.02%		0.03%	0.22%	21.22%	29.62%
Information Technology	-0.38%		-0.38%		0.04%		-0.05%		-0.24%	3.01%	13.05%	11.61%
Communication Services	0.24%		0.22%		0.17%		-0.14%		-1.14%	-8.39%	0.98%	2.97%
Utilities	-0.21%		-0.18%		-0.06%		0.03%		3.14%	5.45%	6.63%	7.74%
Real Estate	0.59%		0.59%		0.00%		0.00%		9.93%	5.08%	12.15%	12.22%
Cash	0.02%		0.00%		0.02%		0.00%		0.50%	--	4.03%	0.00%
Portfolio	-1.21%	=	-0.67%	+	-0.34%	+	-0.20%		-1.26%	-0.05%	100.00%	100.00%

International developed equity

International equity performance was impacted heavily by currency movements in the third quarter. In local terms, the MSCI EAFE Index delivered a total return of 1.8%, bringing year-to-date performance to 15.7%. For unhedged U.S. investors however, the MSCI EAFE Index generated a quarterly return of -1.1%, dragging the year-to-date figure to 12.8%. Dollar strength reemerged as a powerful force driving returns due in part to widening interest rate differentials between the U.S. and the rest of the world.

Japanese equities outperformed over the period, delivering a

Q3 return of 3.5% in local terms. Unhedged U.S. investors in the MSCI Japan Index received only 3.1%, as the yen depreciated slightly vs. the U.S. dollar over the period.

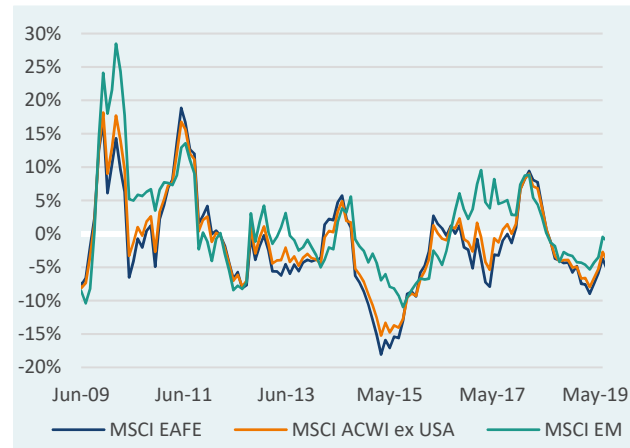
The British pound weakened in July as the new Prime Minister Boris Johnson signaled a much harder line on Brexit than his predecessor's. Toward the end of the quarter, the pound strengthened as markets began pricing a lower likelihood of a "no-deal" Brexit, which many market participants viewed as unfriendly to markets.

INTERNATIONAL DEVELOPED EQUITIES



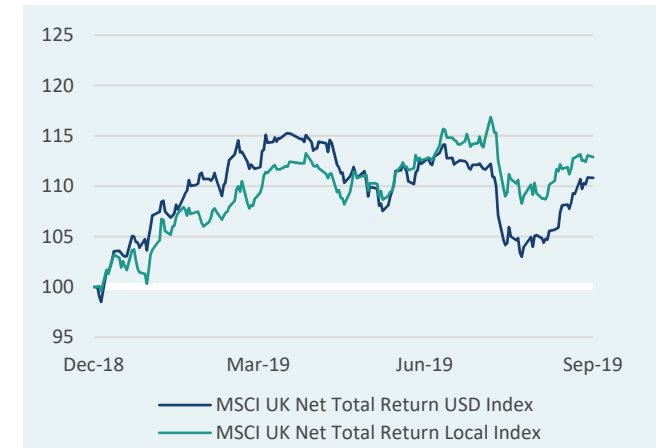
Source: MSCI, as of 9/30/19

EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 9/30/19

U.K. EQUITY PERFORMANCE (YTD)



Source: Bloomberg, as of 9/30/19

Emerging market equity

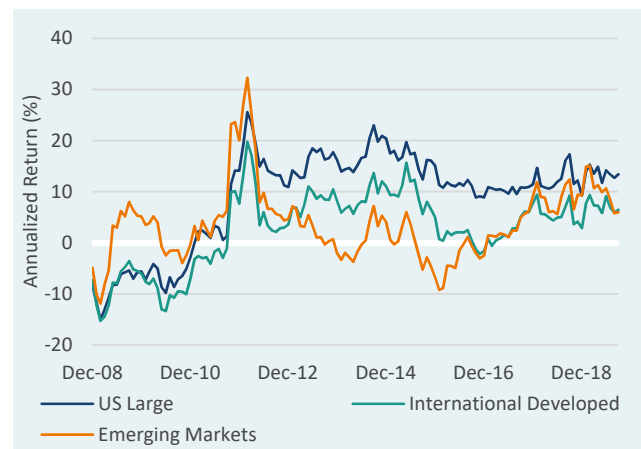
Emerging market equities (MSCI Emerging Markets -4.2%) lagged developed markets (MSCI EAFE -1.1%) over the quarter, while U.S. equities outperformed (S&P 500 +1.7%).

Equity multiples have expanded year-to-date, recovering to the levels of September 2018. Developed and emerging markets continue to appear cheap relative to domestic equity valuations.

We see two opposing forces impacting emerging markets in

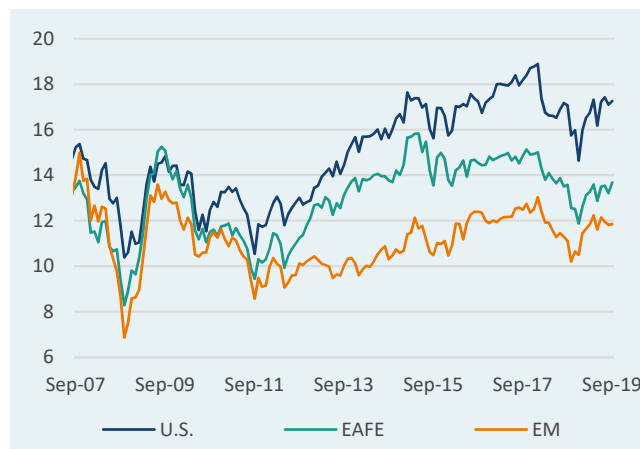
the current environment. The first force is decelerating global growth and a rising probability of recession, which likely bodes poorly for emerging market performance. However, the second force of widespread central bank dovishness may boost emerging market performance in the near term. Specifically, if global growth levels out while central banks unleash another round of easing, there may be material upside to emerging market equities. On balance, we remain moderately bullish on emerging markets, though we are watching developments closely.

EQUITY PERFORMANCE (3-YR ROLLING)



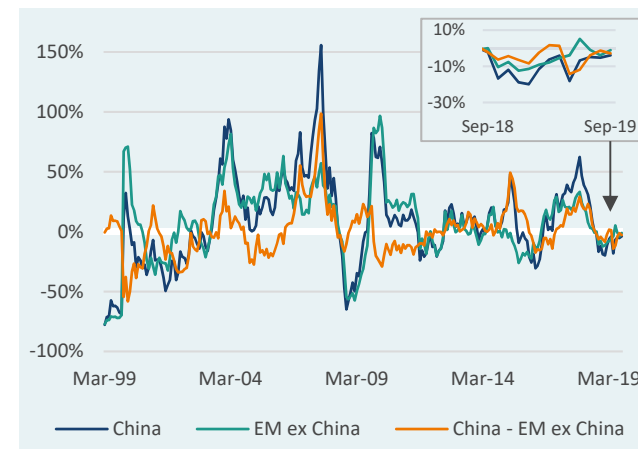
Source: Standard & Poor's, MSCI, as of 9/30/19

FORWARD P/E



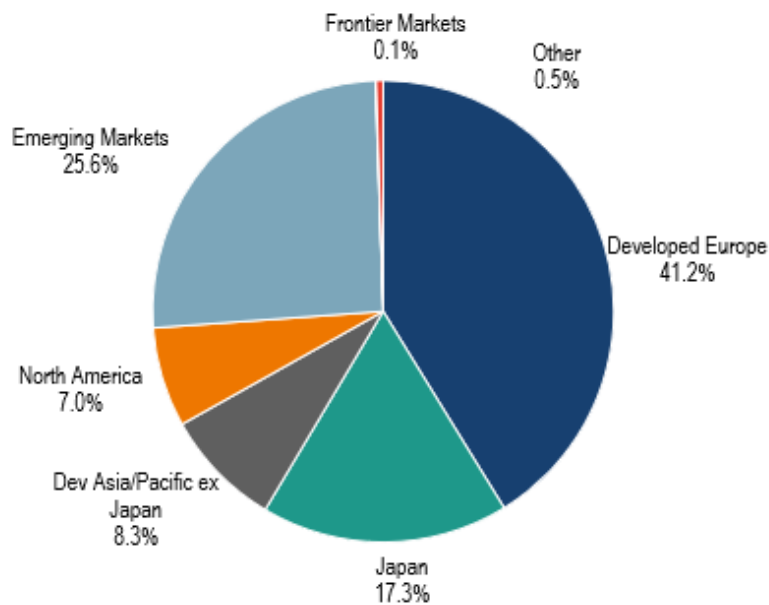
Source: MSCI, as of 9/30/19

CHINA & EM: ROLLING 1-YEAR PERFORMANCE (USD)

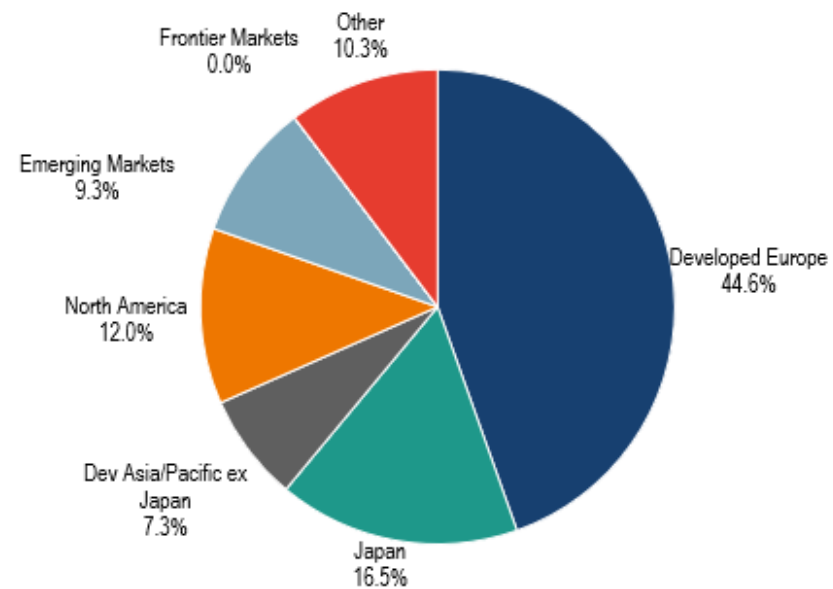


Source: MSCI, as of 9/30/19

International Equity

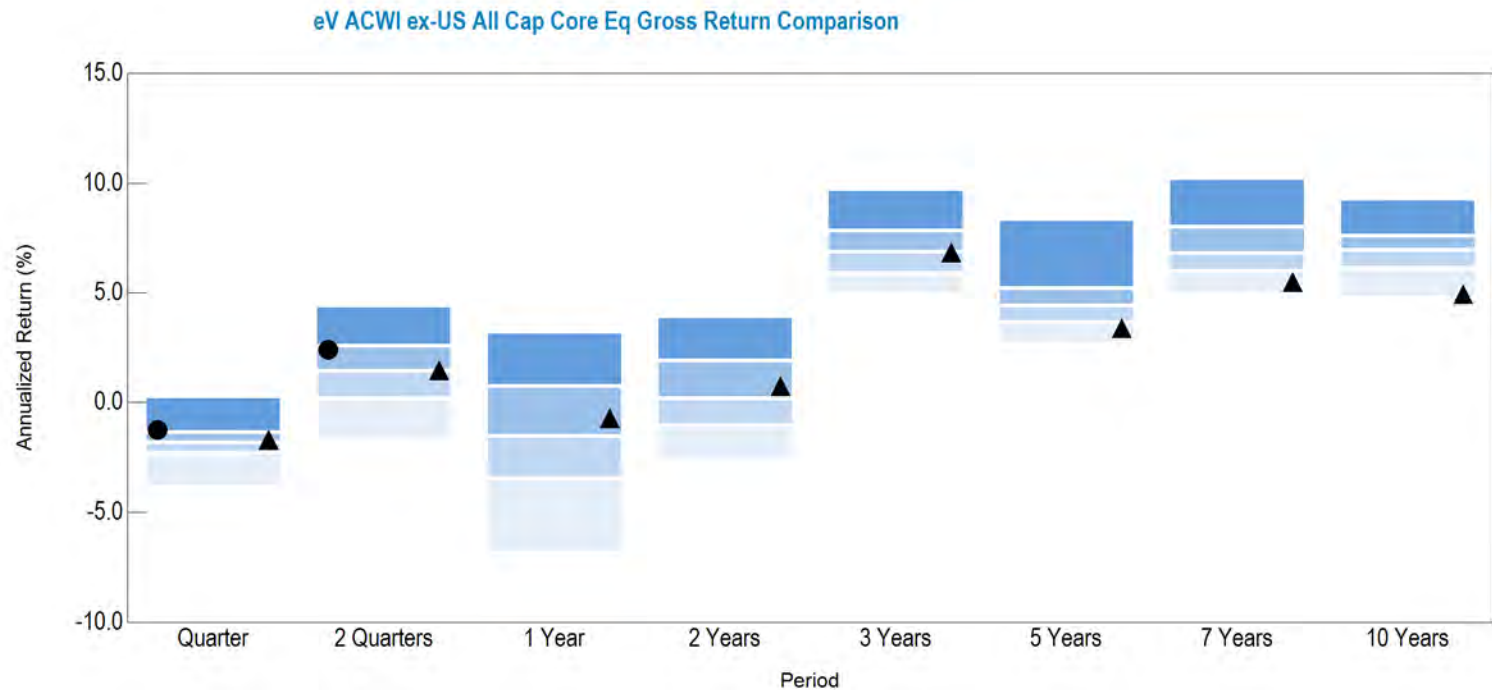


MSCI ACWI ex US IMI



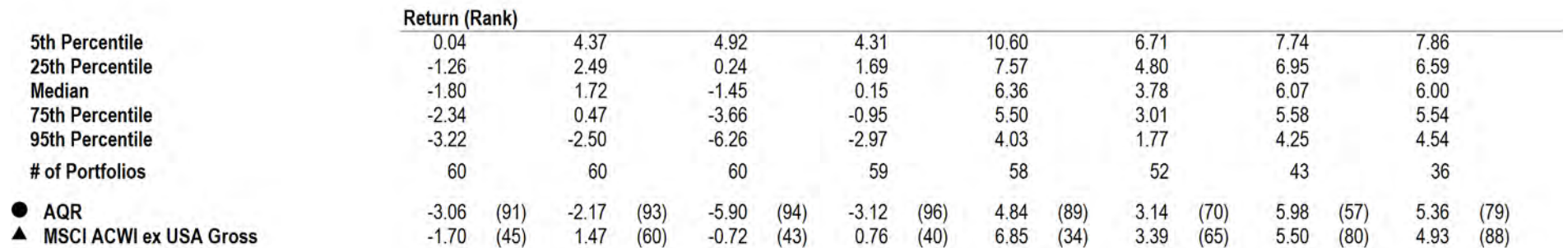
ACWI ex-US Large Cap Core Equity Peer Universe Comparison

Period Ending: September 30, 2019



	Return (Rank)													
5th Percentile	0.28		4.42		3.24		3.93		9.74		8.35		10.21	
25th Percentile	-1.32		2.62		0.78		1.94		7.87		5.24		8.04	
Median	-1.80		1.49		-1.49		0.23		6.89		4.44		6.83	
75th Percentile	-2.26		0.21		-3.43		-1.02		5.93		3.68		6.02	
95th Percentile	-3.80		-1.68		-6.81		-2.61		4.96		2.74		4.95	
# of Portfolios	47		47		47		47		47		43		42	
● Bivium Intl Equity	-1.25	(23)	2.41	(30)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)
▲ MSCI ACWI ex USA Gross	-1.70	(46)	1.47	(51)	-0.72	(42)	0.76	(43)	6.85	(51)	3.39	(86)	5.50	(89)

Period Ending: September 30, 2019



Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	752	2,206
Weighted Avg. Market Cap. (\$B)	51.2	64.0
Median Market Cap. (\$B)	17.1	7.3
Price To Earnings	13.2	15.0
Price To Book	2.3	2.3
Price To Sales	1.0	1.2
Return on Equity (%)	15.3	15.0
Yield (%)	3.5	3.3
Beta (holdings; global)	1.0	0.9

Top Holdings

NESTLE 'R'	3.1%
ROCHE HOLDING	1.9%
ENEL	1.7%
SAP	1.6%
RIO TINTO	1.6%
ALLIANZ	1.6%
NOVO NORDISK 'B'	1.6%
BHP GROUP	1.5%
KONINKLIJKE AHOLD DELHAIZE	1.4%
CONSTELLATION SOFTWARE	1.3%

Best Performers

	Return %
ADVANTEST (J:AB@N)	60.5%
TOKYO ELECTRON (J:RG@N)	36.9%
LENDLEASE GROUP STAPLED UNITS (A:LLCX)	32.2%
RENESAS ELECTRONICS (J:RENE)	30.8%
LONDON STOCK EX.GROUP (UKIR:LSE)	29.4%
BANDAI NAMCO HDG. (J:N@MB)	28.7%
HULIC (J:HULI)	27.2%
OLYMPUS (J:OLYC)	21.4%
VODAFONE GROUP (UKIR:VOD)	21.3%
TREASURY WINE ESTATES (A:TWEX)	20.9%

Worst Performers

	Return %
MICRO FOCUS INTL. (UKIR:MCRO)	-44.4%
AURORA CANNABIS (C:ACB)	-44.0%
CRONOS GROUP (C:CRON)	-43.8%
CANOPY GROWTH (C:WEED)	-43.3%
YANGZIJANG SHIPBUILDING (HOLDINGS) (T:YSHL)	-38.6%
CIMIC GROUP (A:CIMX)	-31.0%
BLACKBERRY (C:BB)	-29.8%
TECK RESOURCES SUBORDINATE VOTING B (C:TECK.B)	-29.7%
EVRAZ (UKIR:EVR)	-28.0%
KERRY PROPERTIES (K:KERP)	-25.5%

AQR Performance Attribution vs. MSCI ACWI ex USA Gross

	Attribution Effects						Returns		Sector Weights			
	Total Effects		Selection Effect		Allocation Effect		Interaction Effects		Portfolio	Benchmark	Portfolio	Benchmark
Energy	-0.08%		-0.19%		0.01%		0.10%		-7.60%	-4.35%	5.99%	7.08%
Materials	-0.57%		-0.57%		0.01%		0.00%		-13.78%	-6.31%	7.15%	7.66%
Industrials	-0.74%		-0.52%		-0.03%		-0.19%		-6.85%	-2.53%	15.01%	12.01%
Consumer Discretionary	0.50%		0.68%		-0.03%		-0.15%		4.87%	-0.80%	7.43%	11.26%
Consumer Staples	0.14%		0.19%		-0.08%		0.03%		3.54%	1.48%	7.14%	9.78%
Health Care	-0.49%		-0.28%		0.23%		-0.44%		-2.21%	1.17%	15.37%	8.26%
Financials	0.81%		0.84%		0.10%		-0.13%		0.17%	-3.36%	15.21%	21.91%
Information Technology	-0.36%		-0.31%		0.05%		-0.10%		-1.67%	2.25%	8.55%	8.53%
Communication Services	0.20%		0.12%		0.08%		0.01%		-1.19%	-2.70%	3.02%	6.88%
Utilities	-0.13%		-0.01%		0.16%		-0.28%		0.02%	1.36%	9.07%	3.39%
Real Estate	-0.30%		-0.16%		-0.04%		-0.10%		-7.42%	-2.94%	5.22%	3.23%
Cash	0.00%		--		--		--		--	--	0.00%	0.00%
Unclassified	-0.13%		0.00%		-0.10%		-0.04%		-13.86%	--	0.86%	0.00%
Portfolio	-1.15%	=	-0.22%	+	0.35%	+	-1.28%		-2.89%	-1.74%	100.00%	100.00%

AQR Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Europe									
Austria	--	-2.99%	0.00%	0.15%	--	0.00%	0.01%	--	0.01%
Belgium	-5.22%	3.44%	1.48%	0.65%	-0.06%	0.06%	-0.03%	-0.08%	-0.11%
Czech Republic*	--	-9.42%	0.00%	0.04%	--	0.00%	0.00%	--	0.00%
Denmark	2.96%	-0.89%	2.35%	1.15%	0.05%	0.03%	-0.06%	0.05%	0.07%
Finland	-3.12%	-1.77%	1.16%	0.67%	-0.01%	0.01%	-0.02%	-0.01%	-0.03%
France	-2.52%	-1.63%	8.08%	7.61%	-0.07%	0.01%	-0.02%	0.00%	-0.08%
Germany	-7.40%	-3.97%	8.24%	5.83%	-0.21%	-0.01%	-0.09%	-0.09%	-0.40%
Greece*	--	-2.87%	0.00%	0.08%	--	0.00%	0.00%	--	0.00%
Hungary*	--	-3.88%	0.00%	0.08%	--	0.00%	0.01%	--	0.00%
Ireland	--	-0.55%	0.00%	0.36%	--	-0.01%	0.02%	--	0.00%
Italy	5.07%	0.19%	2.56%	1.55%	0.08%	0.04%	-0.05%	0.05%	0.12%
Luxembourg	16.45%	-1.70%	0.32%	0.00%	0.00%	0.00%	-0.02%	0.07%	0.05%
Netherlands	3.20%	3.65%	3.37%	1.98%	0.00%	0.10%	-0.07%	0.00%	0.02%
Norway	--	-3.30%	0.00%	0.45%	--	-0.01%	0.03%	--	0.02%
Poland*	--	-11.74%	0.00%	0.30%	--	0.02%	0.02%	--	0.04%
Portugal	--	1.88%	0.00%	0.10%	--	-0.01%	0.00%	--	0.00%
Russia*	--	-1.09%	0.00%	1.06%	--	-0.01%	0.03%	--	0.02%
Spain	1.22%	-3.80%	3.14%	1.99%	0.10%	0.00%	-0.06%	0.06%	0.10%
Sweden	-8.82%	-4.84%	2.56%	1.78%	-0.08%	0.00%	-0.04%	-0.03%	-0.15%
Switzerland	2.67%	0.28%	8.66%	6.22%	0.15%	0.04%	-0.06%	0.06%	0.19%
United Kingdom	-5.64%	-2.47%	12.41%	11.22%	-0.37%	0.00%	-0.03%	-0.04%	-0.43%

AQR Performance Attribution vs. MSCI ACWI ex USA Gross

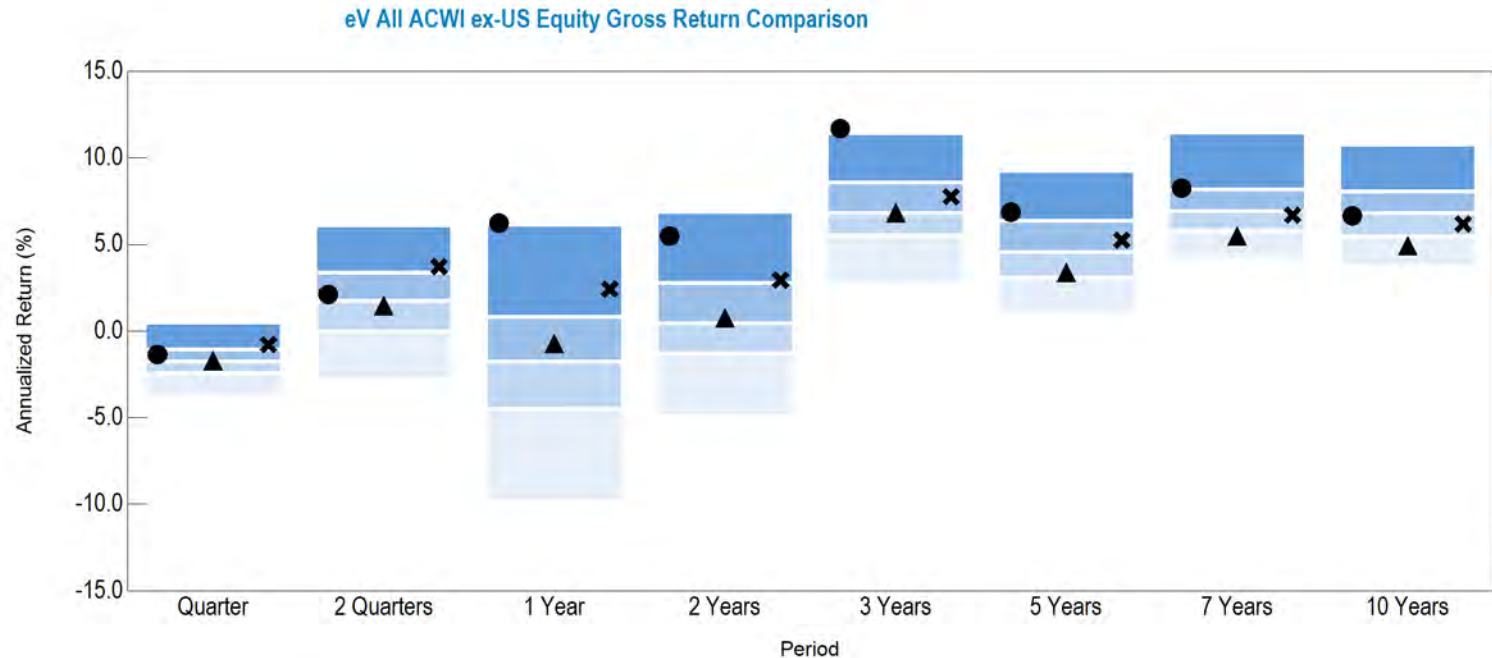
	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
AsiaPacific									
Australia	-8.12%	-1.33%	4.93%	4.82%	-0.34%	0.00%	0.01%	-0.01%	-0.34%
China*	--	-4.66%	0.00%	8.38%	--	0.42%	0.04%	--	0.46%
Hong Kong	-13.23%	-11.94%	3.81%	2.70%	-0.03%	-0.14%	0.00%	-0.01%	-0.19%
India*	--	-5.23%	0.00%	2.39%	--	0.08%	0.06%	--	0.15%
Indonesia*	--	-5.30%	0.00%	0.56%	--	0.03%	0.00%	--	0.03%
Japan	1.25%	3.17%	17.91%	15.97%	-0.31%	0.05%	-0.01%	-0.04%	-0.30%
Korea*	--	-4.72%	0.00%	3.28%	--	0.07%	0.11%	--	0.18%
Malaysia*	--	-6.37%	0.00%	0.57%	--	0.03%	0.01%	--	0.04%
New Zealand	--	-2.73%	0.00%	0.17%	--	-0.01%	0.01%	--	0.01%
Pakistan*	--	1.22%	0.00%	0.01%	--	0.00%	0.00%	--	0.00%
Philippines*	--	-4.53%	0.00%	0.30%	--	0.01%	0.00%	--	0.02%
Singapore	-26.17%	-5.78%	0.93%	0.91%	-0.19%	0.00%	0.00%	0.00%	-0.19%
Taiwan*	--	5.81%	0.00%	2.89%	--	-0.14%	0.00%	--	-0.14%
Thailand*	--	-5.91%	0.00%	0.80%	--	0.06%	0.00%	--	0.05%
Americas									
Argentina*	--	-46.71%	0.00%	0.09%	--	0.04%	0.00%	--	0.04%
Brazil*	--	-4.65%	0.00%	2.01%	--	-0.06%	0.17%	--	0.11%
Canada	-3.83%	0.69%	7.54%	6.82%	-0.31%	0.01%	-0.01%	-0.03%	-0.34%
Chile*	--	-7.47%	0.00%	0.25%	--	0.00%	0.02%	--	0.02%
Colombia*	--	-6.10%	0.00%	0.11%	--	0.00%	0.01%	--	0.01%
Mexico*	--	-1.56%	0.00%	0.68%	--	0.00%	0.02%	--	0.02%
Peru*	--	-9.25%	0.00%	0.11%	--	0.01%	0.00%	--	0.01%

AQR
Equity Performance Attribution

Period Ending: September 30, 2019

AQR Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Other									
Egypt*	--	7.44%	0.00%	0.04%	--	0.00%	0.00%	--	0.00%
Israel	--	-3.60%	0.00%	0.39%	--	0.02%	-0.01%	--	0.02%
Qatar*	--	-0.66%	0.00%	0.26%	--	0.00%	0.00%	--	0.00%
Saudi Arabia*	--	-9.73%	0.00%	0.38%	--	0.04%	0.00%	--	0.04%
South Africa*	--	-12.21%	0.00%	1.56%	--	0.10%	0.10%	--	0.20%
Turkey*	--	11.59%	0.00%	0.13%	--	-0.01%	0.00%	--	-0.01%
United Arab Emirates*	--	0.69%	0.00%	0.17%	--	0.00%	0.00%	--	0.00%
Totals									
Americas	-3.83%	-1.34%	7.54%	10.07%	-0.42%	-0.02%	0.21%	0.11%	-0.13%
Europe	-2.25%	-1.79%	54.34%	43.26%	-0.20%	0.13%	-0.42%	-0.05%	-0.54%
Asia/Pacific	-3.34%	-1.30%	27.58%	43.74%	-0.97%	0.16%	0.23%	0.36%	-0.22%
Other	--	-7.62%	0.00%	2.93%	--	0.16%	0.09%	--	0.25%
Cash	0.50%	--	10.54%	0.00%	0.00%	-0.03%	0.00%	0.00%	-0.03%
Unclassified	--	--	0.00%	0.00%	--	0.00%	0.00%	--	0.00%
Total	-2.38%	-1.70%	100.00%	100.00%	-1.59%	0.39%	0.11%	0.42%	-0.68%
Totals									
Developed	-2.72%	-0.85%	89.46%	73.47%	-1.33%	0.16%	-0.48%	-0.29%	-1.94%
Emerging*	--	-4.06%	0.00%	26.53%	--	0.71%	0.58%	--	1.30%
Cash	0.50%	--	10.54%	0.00%	0.00%	-0.03%	0.00%	0.00%	-0.03%



	Return (Rank)													
5th Percentile	0.49		6.11		6.13		6.88		11.43		9.23		11.46	
25th Percentile	-1.03		3.41		0.86		2.80		8.61		6.38		8.21	
Median	-1.75		1.78		-1.73		0.48		6.84		4.60		6.95	
75th Percentile	-2.43		-0.01		-4.47		-1.27		5.56		3.09		5.83	
95th Percentile	-3.75		-2.82		-9.85		-4.84		2.77		1.02		4.22	
# of Portfolios	286		286		286		281		277		246		213	
● Capital Group	-1.36	(35)	2.11	(45)	6.24	(5)	5.49	(10)	11.70	(5)	6.88	(20)	8.26	(24)
▲ MSCI ACWI ex USA Gross	-1.70	(48)	1.47	(55)	-0.72	(42)	0.76	(47)	6.85	(50)	3.39	(69)	5.50	(82)
✕ MSCI ACWI ex USA Growth Gross	-0.79	(20)	3.72	(24)	2.43	(16)	2.95	(24)	7.77	(35)	5.25	(36)	6.71	(57)
													6.18	(62)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	191	2,206
Weighted Avg. Market Cap. (\$B)	63.4	64.0
Median Market Cap. (\$B)	17.2	7.3
Price To Earnings	18.4	15.0
Price To Book	3.1	2.3
Price To Sales	1.9	1.2
Return on Equity (%)	17.6	15.0
Yield (%)	2.1	3.3
Beta (holdings; global)	1.0	0.9

Top Holdings

AIRBUS	2.7%
OCADO GROUP	2.7%
HDFC BANK ADR 1:3	2.4%
ENEL	2.3%
ASTRAZENECA	2.3%
AIA GROUP	2.3%
TAIWAN SEMICON.MNFG.	2.1%
PING AN INSURANCE (GROUP) OF CHINA 'H'	2.1%
ICICI BK.ADR 1:2	2.1%
SAMSUNG ELECTRONICS	1.9%

Best Performers

	Return %
ALTICE EUROPE (H:ATC)	45.5%
INTELLIGENT SYSTEMS (INS)	44.3%
GREENE KING (UKIR:GNK)	38.3%
TOKYO ELECTRON (J:RG@N)	36.9%
CAPITA (UKIR:CPI)	33.0%
NAGACORP (K:NAGA)	30.0%
LONDON STOCK EX.GROUP (UKIR:LSE)	29.4%
HDFC LIFE INSURANCE COMPANY (IN:HDS)	26.2%
TMX GROUP (C:X)	24.5%
AKBANK (TK:AKB)	22.3%

Worst Performers

	Return %
LOMA NEGRA SPN.ADR 1:5 (LOMA)	-50.9%
BORR DRILLING (N:BDRR)	-46.4%
MICRO FOCUS INTL. (UKIR:MCRO)	-44.4%
VALARIS A (VAL)	-43.6%
NOAH HOLDINGS 'A' 2:1 ADR (NOAH)	-31.4%
GOLAR LNG (NAS) (GLNG)	-29.7%
DISCOVERY (R:DSYJ)	-28.9%
SURYA CITRA MEDIA (ID:SCM)	-28.3%
AIB GROUP (UKIR:A5G)	-27.5%
MODERN TIMES GROUP MTG B (W:MOTB)	-26.0%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Attribution Effects						Returns		Sector Weights		
	Total Effects	Selection Effect	Allocation Effect	Interaction		Portfolio	Benchmark	Portfolio	Benchmark		
Energy	0.18%	-0.28%	0.11%	0.35%		-7.33%	-4.37%	2.33%	7.11%		
Materials	0.36%	-0.04%	0.19%	0.21%		-4.86%	-6.29%	3.34%	7.69%		
Industrials	0.17%	0.26%	0.00%	-0.09%		-1.08%	-2.48%	12.23%	12.07%		
Consumer Discretionary	-0.28%	-0.09%	0.03%	-0.22%		-2.20%	-0.74%	15.26%	11.32%		
Consumer Staples	0.11%	0.21%	-0.07%	-0.04%		3.29%	1.68%	7.54%	9.40%		
Health Care	0.09%	0.14%	-0.03%	-0.02%		2.44%	1.15%	7.47%	8.30%		
Financials	-0.05%	-0.32%	-0.01%	0.27%		-3.53%	-3.36%	22.34%	22.00%		
Information Technology	-0.07%	-0.09%	0.12%	-0.09%		1.35%	2.35%	11.86%	8.54%		
Communication Services	0.10%	0.08%	0.02%	0.00%		-1.72%	-2.74%	5.69%	6.92%		
Utilities	0.23%	0.27%	0.01%	-0.04%		7.84%	1.38%	3.60%	3.40%		
Real Estate	-0.18%	-0.06%	-0.05%	-0.07%		-4.73%	-2.97%	5.48%	3.25%		
Cash	-0.01%	0.00%	-0.01%	0.00%		0.50%	--	2.86%	0.00%		
Portfolio	0.64%	=	0.07%	+	0.31%	+	0.26%	-1.06%	-1.70%	100.00%	100.00%

Capital Group
Equity Performance Attribution

Period Ending: September 30, 2019

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	--	-2.99%	0.00%	0.15%	--	0.00%	0.01%	--	0.01%
Belgium	18.73%	3.44%	0.12%	0.65%	0.10%	-0.04%	0.02%	-0.09%	0.00%
Czech Republic*	--	-9.42%	0.00%	0.04%	--	0.00%	0.00%	--	0.00%
Denmark	7.21%	-0.89%	3.30%	1.15%	0.10%	0.06%	-0.11%	0.18%	0.23%
Finland	--	-1.77%	0.00%	0.67%	--	-0.01%	0.03%	--	0.02%
France	-2.72%	-1.63%	11.49%	7.61%	-0.09%	0.08%	-0.16%	-0.04%	-0.22%
Germany	-1.76%	-3.97%	6.63%	5.83%	0.14%	0.00%	-0.04%	0.02%	0.11%
Greece*	--	-2.87%	0.00%	0.08%	--	0.00%	0.00%	--	0.00%
Hungary*	--	-3.88%	0.00%	0.08%	--	0.00%	0.01%	--	0.00%
Ireland	-19.00%	-0.55%	0.28%	0.36%	-0.07%	0.00%	0.01%	0.02%	-0.05%
Italy	9.20%	0.19%	2.11%	1.55%	0.15%	0.02%	-0.03%	0.05%	0.19%
Netherlands	13.88%	3.65%	2.10%	1.98%	0.22%	0.01%	-0.03%	0.01%	0.22%
Norway	-7.21%	-3.30%	0.55%	0.45%	-0.02%	0.00%	0.00%	0.00%	-0.03%
Poland*	--	-11.74%	0.00%	0.30%	--	0.02%	0.02%	--	0.04%
Portugal	--	1.88%	0.00%	0.10%	--	-0.01%	0.00%	--	0.00%
Russia*	-6.09%	-1.09%	1.03%	1.06%	-0.08%	0.00%	0.03%	0.00%	-0.05%
Spain	6.27%	-3.80%	1.33%	1.99%	0.21%	0.00%	0.02%	-0.07%	0.16%
Sweden	-2.41%	-4.84%	1.04%	1.78%	0.05%	0.00%	0.04%	-0.02%	0.07%
Switzerland	-1.93%	0.28%	2.94%	6.22%	-0.14%	-0.06%	0.08%	0.07%	-0.05%
United Kingdom	2.41%	-2.47%	13.70%	11.22%	0.56%	0.00%	-0.09%	0.12%	0.59%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
AsiaPacific									
Australia	-6.87%	-1.33%	0.27%	4.82%	-0.28%	-0.08%	0.18%	0.26%	0.08%
China*	-7.31%	-4.66%	6.48%	8.38%	-0.24%	0.10%	0.02%	0.05%	-0.07%
Hong Kong	-9.14%	-11.94%	8.67%	2.70%	0.08%	-0.75%	-0.03%	0.18%	-0.52%
India*	-4.47%	-5.23%	5.20%	2.39%	0.00%	-0.10%	-0.03%	0.00%	-0.13%
Indonesia*	-4.20%	-5.30%	2.65%	0.56%	0.01%	-0.12%	-0.01%	0.02%	-0.10%
Japan	1.29%	3.17%	10.33%	15.97%	-0.30%	-0.15%	0.02%	0.11%	-0.33%
Korea*	0.28%	-4.72%	1.95%	3.28%	0.17%	0.03%	0.04%	-0.07%	0.17%
Malaysia*	--	-6.37%	0.00%	0.57%	--	0.03%	0.01%	--	0.04%
New Zealand	-1.22%	-2.73%	0.12%	0.17%	0.00%	0.00%	0.00%	0.00%	0.00%
Pakistan*	--	1.22%	0.00%	0.01%	--	0.00%	0.00%	--	0.00%
Philippines*	-5.00%	-4.53%	0.26%	0.30%	0.00%	0.00%	0.00%	0.00%	0.00%
Singapore	-5.86%	-5.78%	0.86%	0.91%	0.00%	0.00%	0.00%	0.00%	0.00%
Taiwan*	14.29%	5.81%	3.09%	2.89%	0.25%	0.01%	0.00%	0.02%	0.27%
Thailand*	7.10%	-5.91%	0.14%	0.80%	0.10%	0.05%	0.00%	-0.09%	0.06%
Americas									
Argentina*	--	-46.71%	0.00%	0.09%	--	0.04%	0.00%	--	0.04%
Brazil*	-7.82%	-4.65%	3.48%	2.01%	-0.16%	0.04%	0.04%	-0.11%	-0.19%
Canada	10.10%	0.69%	0.86%	6.82%	0.65%	-0.07%	0.08%	-0.57%	0.09%
Chile*	--	-7.47%	0.00%	0.25%	--	0.00%	0.02%	--	0.02%
Colombia*	--	-6.10%	0.00%	0.11%	--	0.00%	0.01%	--	0.01%
Mexico*	3.38%	-1.56%	0.54%	0.68%	0.01%	0.00%	0.02%	0.00%	0.03%
Peru*	--	-9.25%	0.00%	0.11%	--	0.01%	0.00%	--	0.01%
United States	-6.74%	1.60%	2.52%	0.00%	0.00%	0.02%	0.00%	-0.21%	-0.19%

Capital Group
Equity Performance Attribution

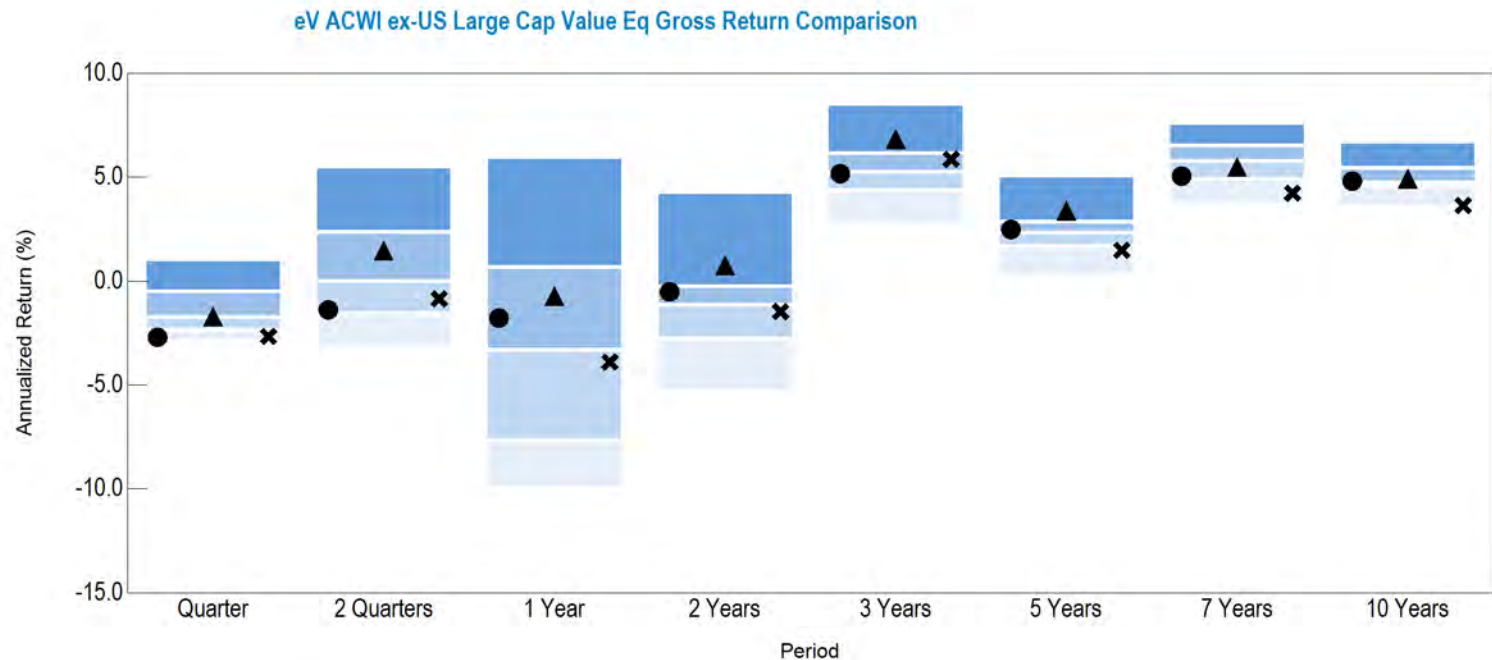
Period Ending: September 30, 2019

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Other									
Egypt*	--	7.44%	0.00%	0.04%	--	0.00%	0.00%	--	0.00%
Israel	1.37%	-3.60%	1.13%	0.39%	0.02%	-0.04%	0.02%	0.03%	0.02%
Qatar*	--	-0.66%	0.00%	0.26%	--	0.00%	0.00%	--	0.00%
Saudi Arabia*	--	-9.73%	0.00%	0.38%	--	0.04%	0.00%	--	0.04%
South Africa*	-15.63%	-12.21%	1.51%	1.56%	-0.06%	0.00%	0.01%	0.00%	-0.05%
Turkey*	22.32%	11.59%	0.44%	0.13%	0.01%	0.02%	0.01%	0.03%	0.08%
United Arab Emirates*	--	0.69%	0.00%	0.17%	--	0.00%	0.00%	--	0.00%
Totals									
Americas	-4.57%	-1.34%	7.40%	10.07%	-0.43%	-0.02%	0.16%	0.12%	-0.18%
Europe	1.06%	-1.79%	46.63%	43.26%	1.30%	0.04%	-0.20%	0.10%	1.24%
Asia/Pacific	-2.76%	-1.30%	40.03%	43.74%	-0.82%	0.04%	0.21%	0.07%	-0.51%
Other	-3.97%	-7.62%	3.08%	2.93%	0.07%	-0.01%	0.04%	0.00%	0.10%
Cash	0.50%	--	2.86%	0.00%	0.00%	-0.01%	0.00%	0.00%	-0.01%
Unclassified	--	--	0.00%	0.00%	--	0.00%	0.00%	--	0.00%
Total	-1.06%	-1.70%	100.00%	100.00%	0.10%	0.04%	0.21%	0.29%	0.64%
Totals									
Developed	-0.35%	-0.85%	70.37%	73.47%	0.43%	-0.03%	0.03%	-0.02%	0.41%
Emerging*	-3.10%	-4.06%	26.77%	26.53%	0.06%	-0.01%	0.19%	0.00%	0.25%
Cash	0.50%	--	2.86%	0.00%	0.00%	-0.01%	0.00%	0.00%	-0.01%

ACWI ex-US Large Cap Value Equity Peer Universe Comparison

Period Ending: September 30, 2019



	Return (Rank)													
5th Percentile	1.03		5.50		5.96		4.27		8.53		5.07		7.61	
25th Percentile	-0.48		2.38		0.70		-0.24		6.18		2.87		6.55	
Median	-1.69		0.01		-3.26		-1.11		5.28		2.36		5.83	
75th Percentile	-2.33		-1.51		-7.64		-2.75		4.39		1.72		4.95	
95th Percentile	-2.88		-3.15		-9.92		-5.27		2.84		0.26		3.71	
# of Portfolios	22		22		22		22		22		21		17	
● Mondrian	-2.70	(91)	-1.38	(74)	-1.78	(41)	-0.51	(45)	5.17	(58)	2.49	(45)	5.05	(68)
▲ MSCI ACWI ex USA Gross	-1.70	(51)	1.47	(29)	-0.72	(36)	0.76	(19)	6.85	(14)	3.39	(14)	5.50	(57)
✕ MSCI ACWI ex USA Value Gross	-2.66	(89)	-0.85	(66)	-3.89	(55)	-1.47	(53)	5.87	(31)	1.48	(78)	4.23	(92)

Mondrian Equity Only Summary Statistics

Period Ending: September 30, 2019

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	52	2,206
Weighted Avg. Market Cap. (\$B)	47.4	64.0
Median Market Cap. (\$B)	29.1	7.3
Price To Earnings	15.0	15.0
Price To Book	1.6	2.3
Price To Sales	0.7	1.2
Return on Equity (%)	8.4	15.0
Yield (%)	4.5	3.3
Beta (holdings; global)	1.0	0.9

Top Holdings

UNITED OVERSEAS BANK	3.1%
TELIA COMPANY	3.0%
GLAXOSMITHKLINE	3.0%
SAINT GOBAIN	2.9%
CK HUTCHISON HOLDINGS	2.9%
SANOFI	2.9%
SSE	2.9%
ALLIANZ	2.9%
ROYAL DUTCH SHELL A	2.9%
LLOYDS BANKING GROUP	2.9%

Best Performers

	Return %
FUJITSU (J:FT@N)	15.9%
OTSUKA HOLDINGS (J:OTHD)	14.5%
SSE (UKIR:SSE)	14.3%
KONINKLIJKE AHOLD DELHAIZE (H:AD)	12.7%
KYUSHU RAILWAY (J:KRWK)	10.8%
ZURICH INSURANCE GROUP (S:ZURN)	9.9%
ENEL (I:ENEL)	9.2%
TOKIO MARINE HOLDINGS (J:MIHO)	8.4%
GLAXOSMITHKLINE (UKIR:GSK)	8.4%
SOCIETE GENERALE (F:SSE)	8.3%

Worst Performers

	Return %
ISS (DK:ISS)	-18.1%
WOOD GROUP (JOHN) (UKIR:WG.)	-16.5%
EVONIK INDUSTRIES (D:EVK)	-15.0%
FUJIFILM HOLDINGS (J:FP@N)	-12.6%
BANCO SANTANDER (E:SAN)	-12.3%
CONTINENTAL (D:CON)	-11.9%
COCA-COLA BOTTLERS JAPAN HOLDINGS (J:KITK)	-11.5%
DAIMLER (D:DAI)	-11.1%
BMW PREF. (D:BMW3)	-10.6%
SINGAPORE TELECOM (T:TELC)	-10.5%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Attribution Effects							Returns		Sector Weights	
	Total	Selection	Allocation		Interaction	Portfolio	Benchmark	Portfolio	Benchmark		
	Effects	Effect	Effect	Effects							
Energy	-0.53%	-0.20%	-0.06%		-0.26%	-8.49%	-4.35%	9.66%	7.08%		
Materials	0.28%	-0.56%	0.25%		0.58%	-15.04%	-6.31%	1.67%	7.66%		
Industrials	-0.42%	-0.28%	-0.02%		-0.11%	-4.69%	-2.53%	15.18%	12.01%		
Consumer Discretionary	-0.55%	-0.47%	0.01%		-0.08%	-5.07%	-0.80%	12.35%	11.26%		
Consumer Staples	-0.14%	-0.25%	-0.16%		0.27%	-1.20%	1.48%	5.00%	9.78%		
Health Care	0.28%	0.16%	0.10%		0.02%	3.48%	1.17%	11.38%	8.26%		
Financials	0.58%	0.60%	0.07%		-0.09%	-1.09%	-3.36%	18.14%	21.91%		
Information Technology	-0.33%	-0.57%	-0.09%		0.32%	-2.79%	2.25%	5.66%	8.53%		
Communication Services	0.01%	0.21%	-0.05%		-0.15%	-1.45%	-2.70%	10.11%	6.88%		
Utilities	0.65%	0.30%	0.17%		0.18%	10.03%	1.36%	8.36%	3.39%		
Real Estate	0.12%	0.12%	0.03%		-0.03%	0.79%	-2.94%	2.21%	3.23%		
Cash	0.00%	--	--		--	--	--	0.00%	0.00%		
Unclassified	-0.01%	0.00%	0.00%		0.00%	-1.43%	--	0.30%	0.00%		
Portfolio	-0.07%	=	-0.94%	+	0.23%	+	0.64%	-1.81%	-1.74%	100.00%	100.00%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Europe									
Austria	--	-2.99%	0.00%	0.15%	--	0.00%	0.01%	--	0.01%
Belgium	--	3.44%	0.00%	0.65%	--	-0.05%	0.03%	--	-0.02%
Czech Republic*	--	-9.42%	0.00%	0.04%	--	0.00%	0.00%	--	0.00%
Denmark	-18.12%	-0.89%	1.86%	1.15%	-0.21%	0.02%	-0.02%	-0.13%	-0.33%
Finland	--	-1.77%	0.00%	0.67%	--	-0.01%	0.03%	--	0.02%
France	4.70%	-1.63%	7.02%	7.61%	0.50%	-0.01%	0.01%	-0.04%	0.46%
Germany	-8.07%	-3.97%	11.18%	5.83%	-0.25%	-0.03%	-0.21%	-0.23%	-0.72%
Greece*	--	-2.87%	0.00%	0.08%	--	0.00%	0.00%	--	0.00%
Hungary*	--	-3.88%	0.00%	0.08%	--	0.00%	0.01%	--	0.00%
Ireland	--	-0.55%	0.00%	0.36%	--	-0.01%	0.02%	--	0.00%
Italy	2.35%	0.19%	6.02%	1.55%	0.04%	0.17%	-0.21%	0.10%	0.10%
Netherlands	-4.86%	3.65%	3.81%	1.98%	-0.16%	0.13%	-0.08%	-0.15%	-0.27%
Norway	--	-3.30%	0.00%	0.45%	--	-0.01%	0.03%	--	0.02%
Poland*	--	-11.74%	0.00%	0.30%	--	0.02%	0.02%	--	0.04%
Portugal	--	1.88%	0.00%	0.10%	--	-0.01%	0.00%	--	0.00%
Russia*	--	-1.09%	0.00%	1.06%	--	-0.01%	0.03%	--	0.02%
Spain	-6.03%	-3.80%	4.06%	1.99%	-0.05%	-0.01%	-0.08%	-0.05%	-0.19%
Sweden	0.84%	-4.84%	2.79%	1.78%	0.11%	0.00%	-0.07%	0.06%	0.10%
Switzerland	0.06%	0.28%	6.39%	6.22%	-0.01%	0.00%	0.00%	0.00%	-0.01%
United Kingdom	-0.59%	-2.47%	21.48%	11.22%	0.22%	-0.01%	-0.34%	0.20%	0.06%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
AsiaPacific									
Australia	4.12%	-1.33%	1.22%	4.82%	0.27%	-0.07%	0.14%	-0.20%	0.14%
China*	--	-4.66%	0.00%	8.38%	--	0.42%	0.04%	--	0.46%
Hong Kong	-9.27%	-11.94%	2.64%	2.70%	0.07%	0.01%	0.00%	0.00%	0.08%
India*	--	-5.23%	0.00%	2.39%	--	0.08%	0.06%	--	0.15%
Indonesia*	--	-5.30%	0.00%	0.56%	--	0.03%	0.00%	--	0.03%
Japan	0.42%	3.17%	22.80%	15.97%	-0.44%	0.18%	-0.02%	-0.19%	-0.47%
Korea*	--	-4.72%	0.00%	3.28%	--	0.07%	0.11%	--	0.18%
Malaysia*	--	-6.37%	0.00%	0.57%	--	0.03%	0.01%	--	0.04%
New Zealand	--	-2.73%	0.00%	0.17%	--	-0.01%	0.01%	--	0.01%
Pakistan*	--	1.22%	0.00%	0.01%	--	0.00%	0.00%	--	0.00%
Philippines*	--	-4.53%	0.00%	0.30%	--	0.01%	0.00%	--	0.02%
Singapore	-4.26%	-5.78%	5.28%	0.91%	0.01%	-0.20%	-0.09%	0.07%	-0.21%
Taiwan*	--	5.81%	0.00%	2.89%	--	-0.14%	0.00%	--	-0.14%
Thailand*	--	-5.91%	0.00%	0.80%	--	0.06%	0.00%	--	0.05%
Americas									
Argentina*	--	-46.71%	0.00%	0.09%	--	0.04%	0.00%	--	0.04%
Brazil*	--	-4.65%	0.00%	2.01%	--	-0.06%	0.17%	--	0.11%
Canada	1.47%	0.69%	1.52%	6.82%	0.05%	-0.06%	0.07%	-0.04%	0.02%
Chile*	--	-7.47%	0.00%	0.25%	--	0.00%	0.02%	--	0.02%
Colombia*	--	-6.10%	0.00%	0.11%	--	0.00%	0.01%	--	0.01%
Mexico*	--	-1.56%	0.00%	0.68%	--	0.00%	0.02%	--	0.02%
Peru*	--	-9.25%	0.00%	0.11%	--	0.01%	0.00%	--	0.01%

Mondrian
Equity Performance Attribution

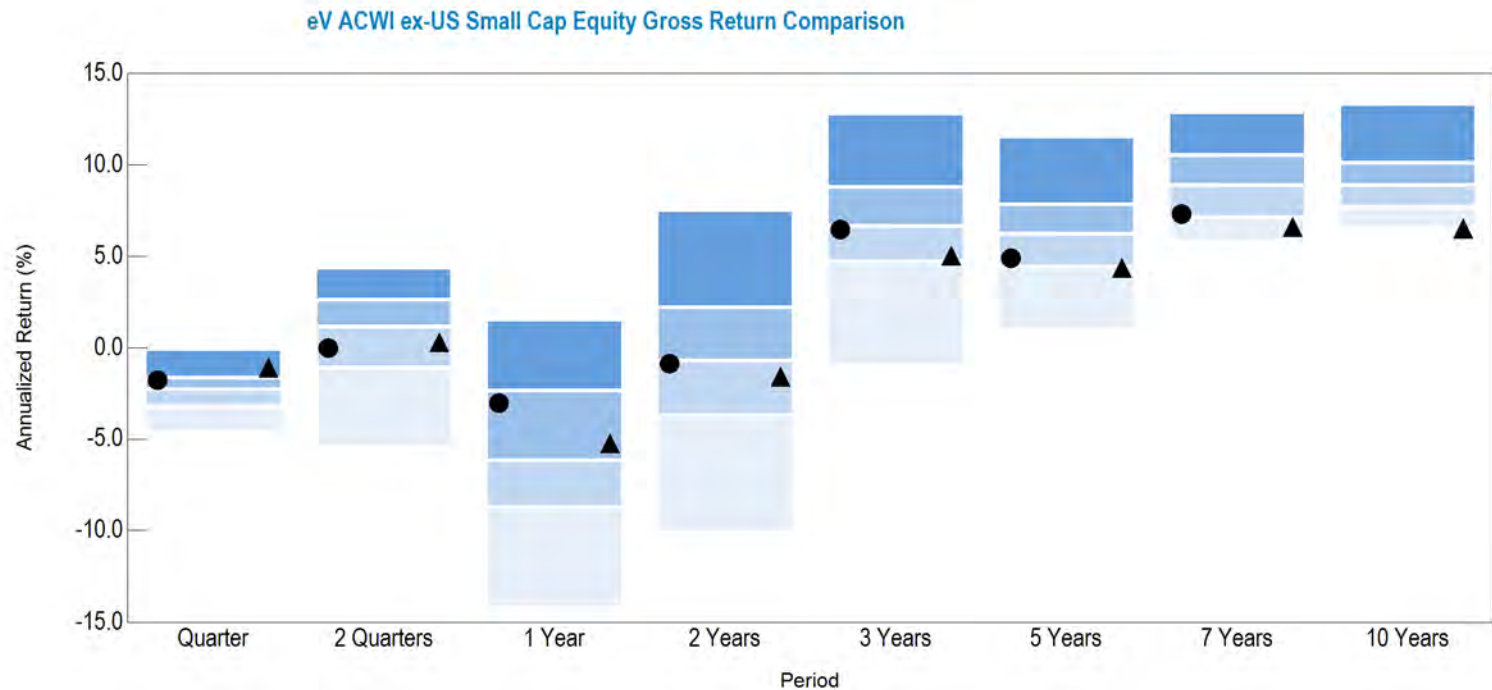
Period Ending: September 30, 2019

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Other									
Egypt*	--	7.44%	0.00%	0.04%	--	0.00%	0.00%	--	0.00%
Israel	--	-3.60%	0.00%	0.39%	--	0.02%	-0.01%	--	0.02%
Qatar*	--	-0.66%	0.00%	0.26%	--	0.00%	0.00%	--	0.00%
Saudi Arabia*	--	-9.73%	0.00%	0.38%	--	0.04%	0.00%	--	0.04%
South Africa*	--	-12.21%	0.00%	1.56%	--	0.10%	0.10%	--	0.20%
Turkey*	--	11.59%	0.00%	0.13%	--	-0.01%	0.00%	--	-0.01%
United Arab Emirates*	--	0.69%	0.00%	0.17%	--	0.00%	0.00%	--	0.00%
Totals									
Americas	1.47%	-1.34%	1.52%	10.07%	0.12%	-0.07%	0.28%	-0.10%	0.23%
Europe	-2.01%	-1.79%	64.61%	43.26%	-0.08%	0.25%	-0.83%	-0.04%	-0.70%
Asia/Pacific	-1.01%	-1.30%	31.95%	43.74%	-0.04%	0.12%	0.26%	0.01%	0.34%
Other	--	-7.62%	0.00%	2.93%	--	0.16%	0.09%	--	0.25%
Cash	0.50%	--	1.92%	0.00%	0.00%	-0.01%	0.00%	0.00%	-0.01%
Unclassified	--	--	0.00%	0.00%	--	0.00%	0.00%	--	0.00%
Total	-1.59%	-1.70%	100.00%	100.00%	0.00%	0.45%	-0.20%	-0.13%	0.11%
Totals									
Developed	-1.63%	-0.85%	98.08%	73.47%	-0.47%	0.24%	-0.79%	-0.16%	-1.18%
Emerging*	--	-4.06%	0.00%	26.53%	--	0.71%	0.58%	--	1.30%
Cash	0.50%	--	1.92%	0.00%	0.00%	-0.01%	0.00%	0.00%	-0.01%

ACWI ex-US Small Cap Equity Peer Universe Comparison

Period Ending: September 30, 2019



	Return (Rank)															
5th Percentile	-0.09		4.37		1.54		7.53		12.80		11.55		12.87		13.34	
25th Percentile	-1.62		2.65		-2.33		2.23		8.80		7.86		10.58		10.15	
Median	-2.26		1.19		-6.15		-0.67		6.68		6.24		8.92		8.91	
75th Percentile	-3.17		-1.07		-8.69		-3.65		4.76		4.46		7.16		7.73	
95th Percentile	-4.58		-5.36		-14.15		-10.09		-0.95		0.99		5.87		6.57	
# of Portfolios	51		51		51		49		48		40		31		24	
● Templeton	-1.78	(31)	-0.02	(67)	-3.03	(35)	-0.87	(55)	6.46	(56)	4.90	(70)	7.31	(74)	--	(--)
▲ MSCI ACWI ex US Small Cap Gross	-1.09	(17)	0.29	(62)	-5.24	(49)	-1.57	(60)	5.04	(73)	4.37	(76)	6.61	(82)	6.51	(96)

Characteristics

	Portfolio	MSCI ACWI ex US Small Cap Gross
Number of Holdings	105	4,168
Weighted Avg. Market Cap. (\$B)	2.3	2.3
Median Market Cap. (\$B)	1.4	0.8
Price To Earnings	15.4	15.0
Price To Book	2.1	2.1
Price To Sales	1.0	0.9
Return on Equity (%)	12.2	11.7
Yield (%)	2.6	2.8
Beta (holdings; global)	1.0	0.9

Top Holdings

TECHNOGYM	2.1%
ONESPAWORLD HOLDINGS	2.1%
HUHTAMAKI	2.0%
BARCO NEW	1.9%
TECHTRONIC INDS.	1.9%
INTERPUMP GROUP	1.8%
RATIONAL	1.8%
GREGGS	1.7%
MEITEC	1.7%
FUJI OIL HOLDINGS	1.7%

Best Performers

	Return %
IDOM (J:GULL)	64.1%
ASICS (J:FD@N)	57.6%
SQUARE ENIX HOLDINGS (J:ENIX)	52.0%
KING YUAN ELTN. (TW:KYE)	36.0%
POSTNL (H:PNL)	34.5%
NISSEI ASB MACHINE (J:NASB)	33.4%
ZOJIRUSHI (J:ZOJR)	23.8%
CHICONY ELECTRONICS (TW:CHY)	19.8%
SAO PAULO ALPARGATAS PN (BR:AL4)	16.8%
BELLWAY (UKIR:BWY)	16.3%

Worst Performers

	Return %
GOODBABY INTL.HOLDINGS (K:GBIH)	-33.6%
MAISONS DU MONDE (F:MDM)	-32.2%
MATAS (DK:MAT)	-32.1%
CHINA ZHENG TONG AUTO SVS. (K:CZTA)	-27.8%
XXL (N:XXL)	-25.5%
DE LA RUE ORD (UKIR:DLAR)	-25.1%
DESCENTE (J:DCNT)	-24.7%
VALUE PARTNERS GROUP (K:VALP)	-24.4%
CCC (PO:CCC)	-23.4%
THULE GROUP (W:THULE)	-23.3%

Templeton Performance Attribution vs. MSCI ACWI ex US Small Cap Gross

	Attribution Effects					Returns		Sector Weights					
	Total Effects	Selection Effect	Allocation Effect	Currency Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark				
Energy	0.01%	-0.30%	0.08%	0.05%	0.18%	-13.59%	-5.10%	1.42%	3.48%				
Materials	0.30%	0.11%	0.15%	0.09%	-0.05%	-3.61%	-4.25%	5.58%	10.22%				
Industrials	0.17%	0.36%	-0.14%	-0.18%	0.13%	-1.21%	-3.06%	26.73%	19.58%				
Consumer Discretionary	-1.28%	-0.45%	0.09%	-0.42%	-0.50%	-4.36%	-0.34%	25.86%	12.26%				
Consumer Staples	-0.40%	-0.22%	-0.01%	-0.12%	-0.06%	-5.75%	-1.32%	8.00%	6.36%				
Health Care	0.08%	-0.14%	0.05%	0.12%	0.05%	-4.19%	-3.29%	4.68%	7.19%				
Financials	0.13%	0.04%	0.00%	0.08%	0.00%	-2.41%	-3.56%	10.56%	10.73%				
Information Technology	0.19%	0.07%	0.08%	0.03%	0.02%	3.94%	2.66%	12.73%	10.21%				
Communication Services	0.50%	1.49%	-0.05%	0.13%	-1.07%	33.87%	0.06%	1.33%	4.73%				
Utilities	0.03%	--	-0.10%	0.13%	--	--	0.53%	0.00%	3.40%				
Real Estate	-0.37%	-0.17%	-0.58%	0.23%	0.14%	3.26%	4.91%	2.05%	11.83%				
Cash	0.00%	--	--	--	--	--	--	0.00%	0.00%				
Unclassified	-0.02%	0.00%	0.00%	0.00%	-0.02%	-0.30%	-1.08%	1.05%	0.00%				
Portfolio	-0.66%	=	0.80%	+	-0.42%	+	0.14%	+	-1.18%	-1.74%	-1.08%	100.00%	100.00%

Templeton Performance Attribution vs. MSCI ACWI ex US Small Cap Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	--	-3.12%	0.00%	0.64%	--	0.00%	0.03%	--	0.03%
Belgium	-0.79%	4.16%	2.81%	1.52%	-0.08%	0.09%	-0.05%	-0.07%	-0.10%
Czech Republic*	--	0.60%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Denmark	-22.99%	-7.28%	1.48%	1.30%	-0.21%	-0.01%	0.00%	-0.03%	-0.25%
Finland	-1.01%	-5.72%	2.36%	0.98%	0.05%	-0.04%	-0.06%	0.07%	0.01%
France	-11.11%	-2.59%	1.21%	2.49%	-0.22%	0.00%	0.06%	0.11%	-0.05%
Germany	-3.69%	-4.71%	6.67%	4.23%	0.05%	-0.05%	-0.11%	0.03%	-0.08%
Greece*	--	-0.95%	0.00%	0.16%	--	0.00%	0.01%	--	0.00%
Hungary*	--	-7.22%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Ireland	--	-7.84%	0.00%	0.33%	--	0.02%	0.01%	--	0.03%
Italy	1.56%	-1.40%	3.91%	2.53%	0.08%	0.02%	-0.07%	0.04%	0.08%
Luxembourg	-2.26%	-1.08%	1.20%	0.00%	0.00%	0.00%	-0.05%	0.01%	-0.04%
Netherlands	0.54%	-2.55%	6.04%	1.98%	0.07%	-0.01%	-0.20%	0.15%	0.02%
Norway	-25.50%	-6.29%	0.26%	1.61%	-0.33%	0.02%	0.09%	0.28%	0.06%
Poland*	-23.42%	-17.63%	0.68%	0.23%	-0.01%	-0.06%	-0.02%	-0.03%	-0.12%
Portugal	--	-14.95%	0.00%	0.27%	--	0.03%	0.01%	--	0.04%
Russia*	--	-6.72%	0.00%	0.24%	--	0.01%	0.01%	--	0.02%
Spain	0.48%	-6.47%	1.42%	1.61%	0.12%	0.01%	0.00%	-0.01%	0.11%
Sweden	-17.04%	-3.89%	5.69%	4.23%	-0.59%	0.01%	-0.04%	-0.20%	-0.83%
Switzerland	-2.22%	-1.49%	3.68%	3.46%	-0.04%	0.00%	0.02%	0.00%	-0.03%
United Kingdom	-1.62%	-1.07%	7.01%	12.65%	-0.07%	-0.04%	0.19%	0.03%	0.10%

Templeton Performance Attribution vs. MSCI ACWI ex US Small Cap Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
AsiaPacific									
Australia	--	-0.64%	0.00%	5.62%	--	-0.11%	0.23%	--	0.12%
China*	-11.46%	-7.74%	0.51%	2.28%	-0.08%	0.16%	0.00%	0.07%	0.14%
Hong Kong	-10.86%	-7.69%	8.13%	1.42%	-0.05%	-0.59%	-0.02%	-0.21%	-0.87%
India*	-16.14%	-9.67%	1.23%	3.23%	-0.21%	0.17%	0.05%	0.13%	0.14%
Indonesia*	14.89%	-6.17%	0.65%	0.52%	0.11%	-0.01%	0.00%	0.03%	0.13%
Japan	6.88%	4.06%	20.68%	21.85%	0.62%	-0.03%	0.00%	-0.03%	0.55%
Korea*	-9.96%	-10.01%	1.96%	3.43%	0.00%	0.12%	0.05%	0.00%	0.17%
Malaysia*	--	-2.36%	0.00%	0.68%	--	0.02%	0.01%	--	0.03%
New Zealand	--	-1.67%	0.00%	0.73%	--	-0.03%	0.05%	--	0.02%
Pakistan*	--	-1.83%	0.00%	0.11%	--	0.01%	0.00%	--	0.00%
Philippines*	--	-8.69%	0.00%	0.21%	--	0.02%	0.00%	--	0.02%
Singapore	--	-1.62%	0.00%	1.29%	--	0.01%	0.03%	--	0.04%
Taiwan*	9.81%	4.84%	7.29%	4.08%	0.20%	0.11%	0.00%	0.16%	0.47%
Thailand*	--	-7.35%	0.00%	1.08%	--	0.10%	0.00%	--	0.09%
Americas									
Argentina*	--	-39.07%	0.00%	0.17%	--	0.07%	0.00%	--	0.07%
Brazil*	-3.84%	0.98%	3.84%	1.67%	-0.09%	0.18%	-0.17%	-0.11%	-0.20%
Canada	-3.27%	1.74%	5.85%	6.85%	-0.35%	-0.02%	0.02%	0.05%	-0.30%
Chile*	--	-9.53%	0.00%	0.33%	--	0.01%	0.02%	--	0.04%
Colombia*	--	-1.87%	0.00%	0.06%	--	0.00%	0.01%	--	0.00%
Mexico*	--	-0.71%	0.00%	0.60%	--	0.00%	0.02%	--	0.01%
United States	-3.99%	1.60%	5.42%	0.00%	0.00%	0.01%	0.00%	-0.30%	-0.29%

Templeton
Equity Performance Attribution

Period Ending: September 30, 2019

Templeton Performance Attribution vs. MSCI ACWI ex US Small Cap Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Other									
Egypt*	--	-0.56%	0.00%	0.13%	--	0.01%	0.00%	--	0.00%
Israel	--	8.08%	0.00%	1.15%	--	-0.05%	-0.03%	--	-0.08%
Qatar*	--	-1.09%	0.00%	0.24%	--	0.01%	0.00%	--	0.01%
Saudi Arabia*	--	7.09%	0.00%	0.25%	--	-0.01%	0.00%	--	-0.01%
South Africa*	--	-3.26%	0.00%	1.14%	--	-0.03%	0.08%	--	0.05%
Turkey*	--	9.26%	0.00%	0.26%	--	-0.01%	-0.01%	--	-0.02%
United Arab Emirates*	--	6.78%	0.00%	0.13%	--	-0.01%	0.00%	--	-0.01%
Totals									
Americas	-3.67%	0.33%	15.11%	9.68%	-0.41%	0.10%	-0.12%	-0.23%	-0.67%
Europe	-4.69%	-2.81%	44.44%	40.51%	-0.74%	-0.01%	-0.18%	-0.07%	-1.00%
Asia/Pacific	2.23%	-0.16%	40.45%	46.52%	0.74%	0.02%	0.40%	-0.10%	1.06%
Other	--	3.11%	0.00%	3.29%	--	-0.10%	0.04%	--	-0.05%
Total	-1.74%	-1.08%	100.00%	100.00%	-0.41%	0.01%	0.14%	-0.40%	-0.66%
Totals									
Developed	-2.14%	-0.20%	83.83%	78.73%	-1.74%	0.05%	0.10%	-0.11%	-1.71%
Emerging*	0.33%	-4.33%	16.17%	21.27%	1.09%	0.18%	0.04%	-0.26%	1.05%

Interest rate environment

- Global sovereign bonds rallied, encouraged by muted inflation expectations and dovish guidance from global central banks. Central bankers appealed for fiscal action, citing the limited capacity of monetary policy to sustain further economic expansion.
- The Federal Open Market Committee cut the range for its benchmark interest rate by 0.25% in both its July and September meetings, bringing the new range for federal funds to 1.75-2.00%.
- FOMC members appear divided on the likely future path of interest rates. Per the September dot plot, 8 of 17 members expect one further 0.25% cut by the end of 2020, 2 expect no change, and 7 expect either one or two 0.25% rate hikes.
- The European Central Bank delivered a fresh stimulus package in September, in line with expectations. The ECB cut its main deposit rate from -0.40% to -0.50%

and announced it would restart asset purchases of €20 billion per month, beginning November 1st.

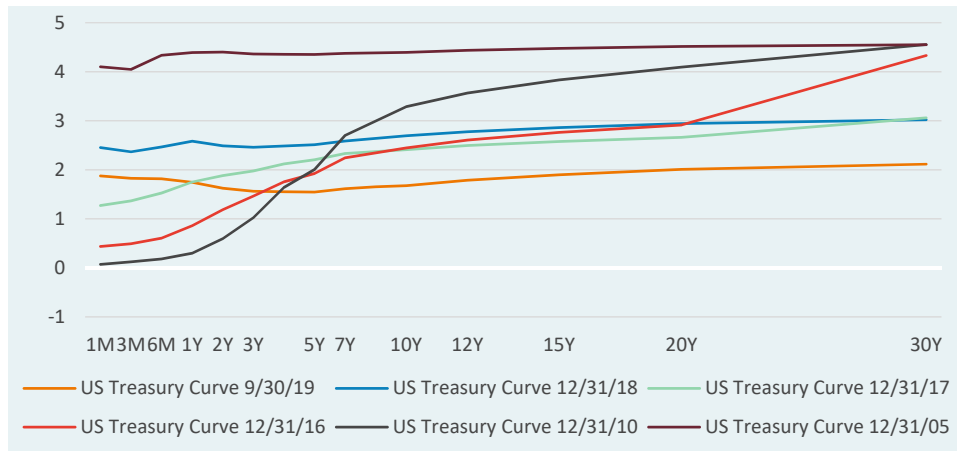
- Global sovereign yields continued to plummet. In Germany, 10-year bond yields touched fresh all-time lows, and the entire German sovereign curve moved below 0%. In Italy, 10-year bond yields fell 1.28% to 0.82%, boosted by the formation of a new coalition government between the Democratic Party and the Five-Star Movement.
- Repo rates, which represent the overnight rate paid by short-term borrowers of cash, surged as overnight liquidity was constrained. The New York Fed intervened, injecting over \$300 billion into money markets over the course of a few weeks. Fed officials viewed the brief spike in repo rates as a financial “plumbing” issue, which could justify an “organic resumption of balance sheet growth”, not to be confused with crisis-era QE policy.

Area	Short Term (3M)	10-Year
United States	1.81%	1.66%
Germany	(0.57%)	(0.57%)
France	(0.59%)	(0.27%)
Spain	(0.54%)	0.15%
Italy	(0.28%)	0.82%
Greece	0.65%	1.35%
U.K.	0.78%	0.49%
Japan	(0.32%)	(0.21%)
Australia	1.06%	1.02%
China	2.33%	3.14%
Brazil	5.04%	7.05%
Russia	6.58%	7.01%

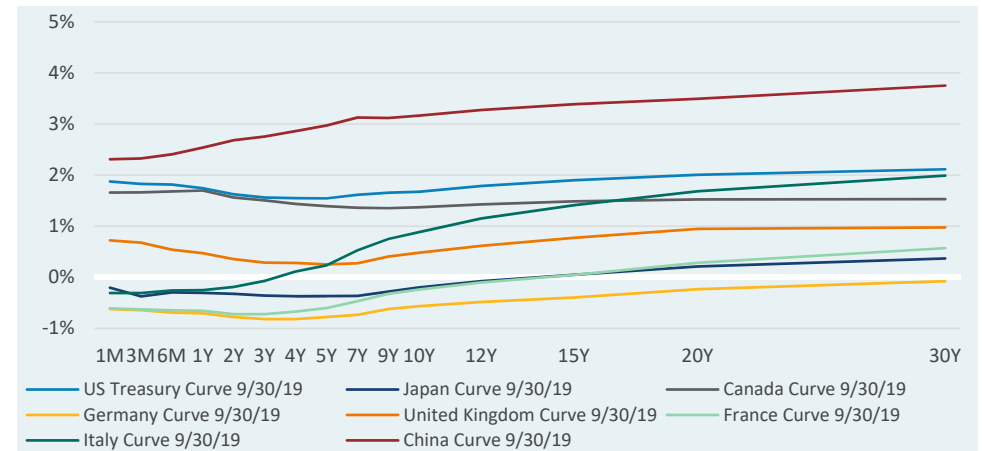
Source: Bloomberg, as of 9/30/19

Yield environment

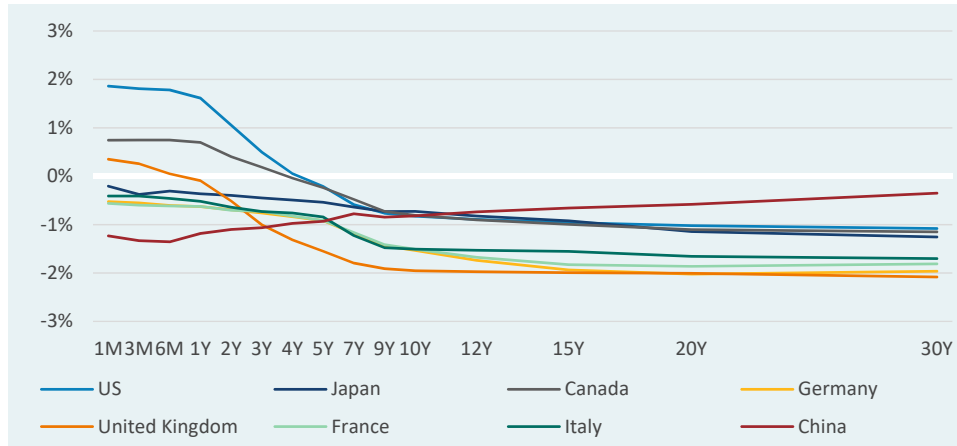
U.S. YIELD CURVE



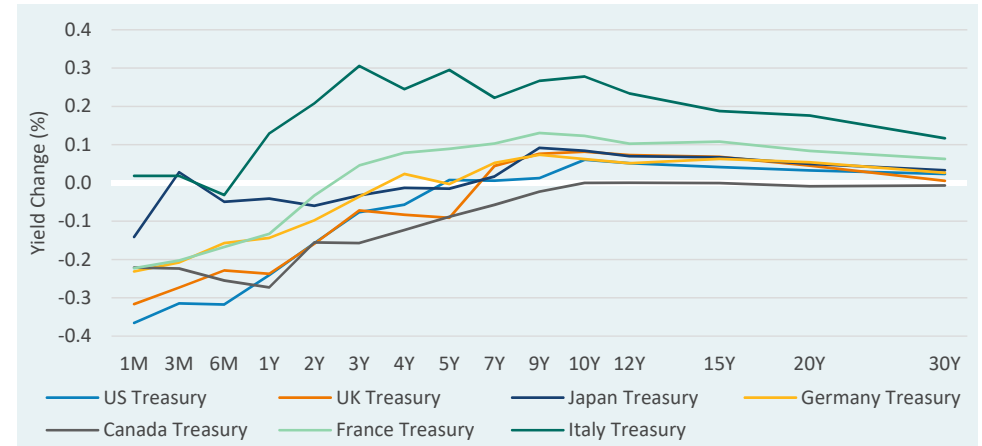
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 9/30/19

Currency

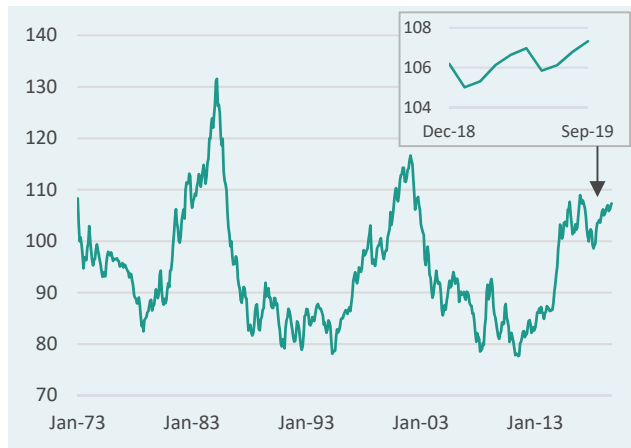
The U.S. dollar appreciated 2.6% in Q3 relative to a trade-weighted basket of currencies. Dollar volatility has been suppressed so far in 2019, following large swings experienced during years 2014-2018. Investors are pricing in a 78% chance of one more 0.25% rate cut by the end of 2019, and a 25% chance of 0.50% in rate cuts. The market continues to price in more aggressive easing than what the Federal Reserve has indicated, which may contribute to volatility if actual easing measures underwhelm the market.

A variety of market scenarios may lead to U.S. dollar

weakness in the short-term, including: aggressive easing by the Federal Reserve which leads to a convergence of U.S. and international interest rates levels, further upside surprise to U.S. inflation, and/or weakening U.S. economic conditions which brings the U.S. more in line with other developed economies.

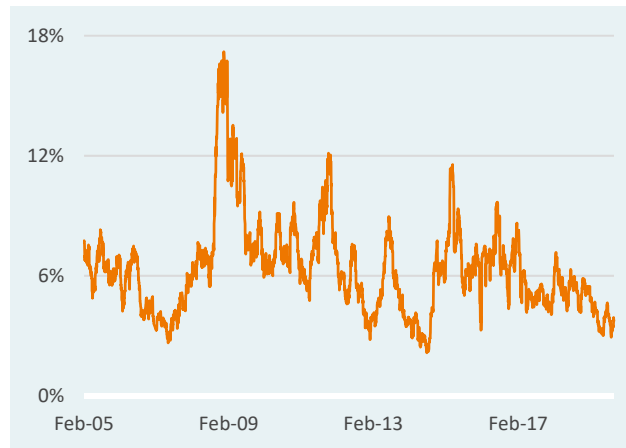
Emerging market currencies fell -4% quarter, on the back of U.S. dollar strength. These currencies remain very depressed relative to history.

U.S. DOLLAR TRADE WEIGHTED INDEX



Source: Federal Reserve, Verus, as of 9/30/19

BLOOMBERG DOLLAR SPOT INDEX REALIZED 30-DAY VOLATILITY



Source: Bloomberg, as of 9/30/19

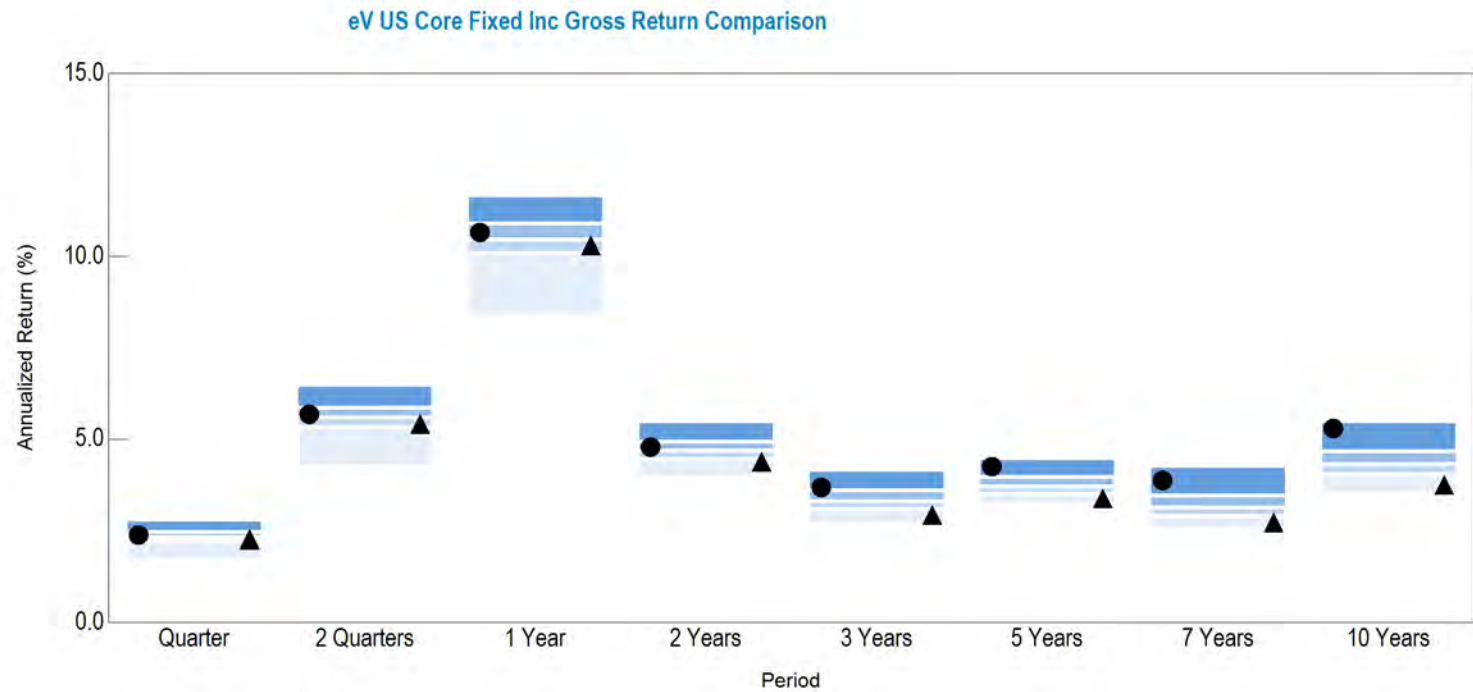
JPM EMERGING MARKET CURRENCY INDEX



Source: Bloomberg, JPMorgan, as of 9/30/19

Core Fixed Income
Peer Universe Comparison

Period Ending: September 30, 2019



	Return (Rank)							
5th Percentile	2.79	6.48	11.67	5.49	4.15	4.47	4.25	5.48
25th Percentile	2.48	5.87	10.92	4.94	3.62	3.98	3.47	4.69
Median	2.34	5.61	10.48	4.70	3.32	3.72	3.14	4.33
75th Percentile	2.23	5.34	10.10	4.46	3.10	3.53	2.90	4.04
95th Percentile	1.71	4.28	8.41	3.98	2.68	3.20	2.54	3.52
# of Portfolios	216	216	216	215	214	211	209	195
● Baird Advisors	2.38 (44)	5.68 (42)	10.65 (41)	4.78 (39)	3.68 (22)	4.25 (9)	3.87 (9)	5.29 (8)
▲ BBgBarc US Aggregate TR	2.27 (69)	5.42 (69)	10.30 (65)	4.38 (81)	2.92 (91)	3.38 (87)	2.72 (90)	3.75 (92)

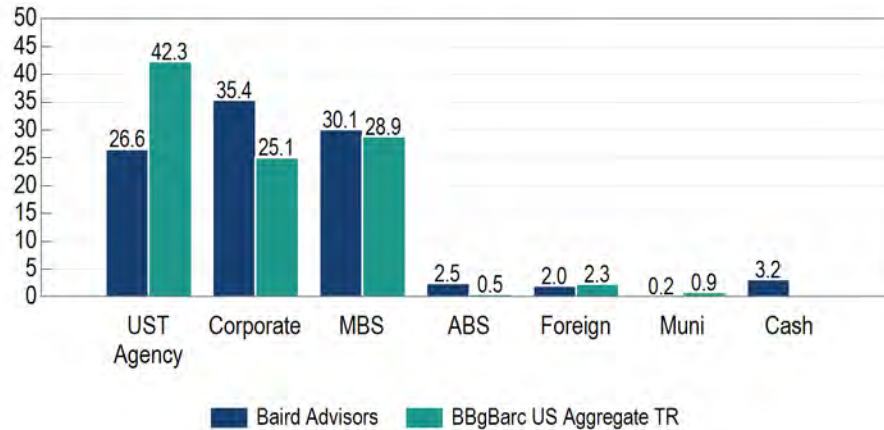
PERFORMANCE BY QUALITY

	NUMBER OF ISSUES	FINAL MARKET VALUE (\$000)	FINAL MARKET VALUE %	QUARTERLY RETURN %	QUARTERLY CONTRIBUTION TO TOTAL RETURN %
Cash & Equiv	1	21,374	3.2	0.54	0.02
Govt & Agency	104	343,991	51.5	2.47	1.27
AAA	23	57,443	8.6	2.24	0.19
AA	7	9,351	1.4	1.94	0.03
A	36	74,810	11.2	2.54	0.28
BAA	62	143,608	21.5	2.95	0.63
Below BAA	17	17,367	2.6	1.30	0.03
Other	0	-	0.0	0.00	0.00
Total Account	250	\$667,944	100.0	2.46	2.46

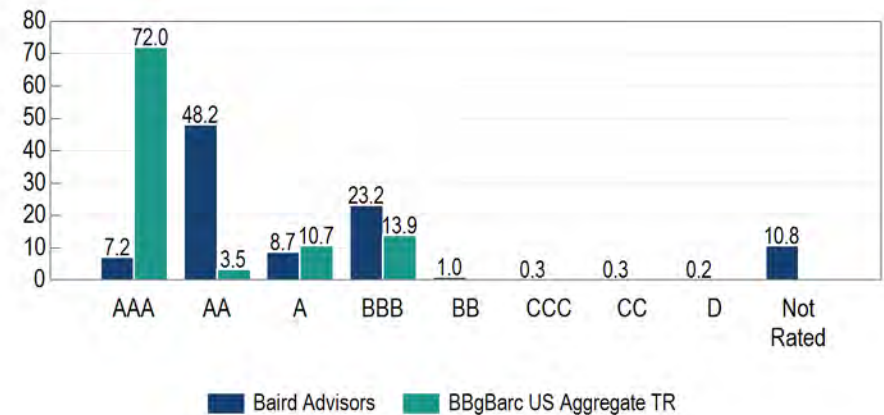
PERFORMANCE BY DURATION

	NUMBER OF ISSUES	FINAL MARKET VALUE (\$000)	FINAL MARKET VALUE %	QUARTERLY RETURN %	QUARTERLY CONTRIBUTION TO TOTAL RETURN %
Under 1 Year	27	45,420	6.8	0.64	0.04
1 - 3 Years	77	199,715	29.9	0.99	0.30
3 - 6 Years	86	219,085	32.8	1.47	0.48
Over 6 Years	60	203,723	30.5	5.36	1.63
Total Account	250	\$667,944	100.0	2.46	2.46

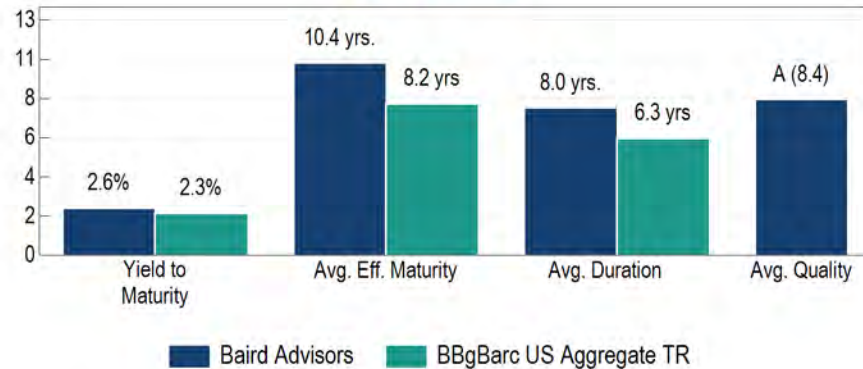
US Sector Allocation
Baird Advisors



Credit Quality Allocation
Baird Advisors

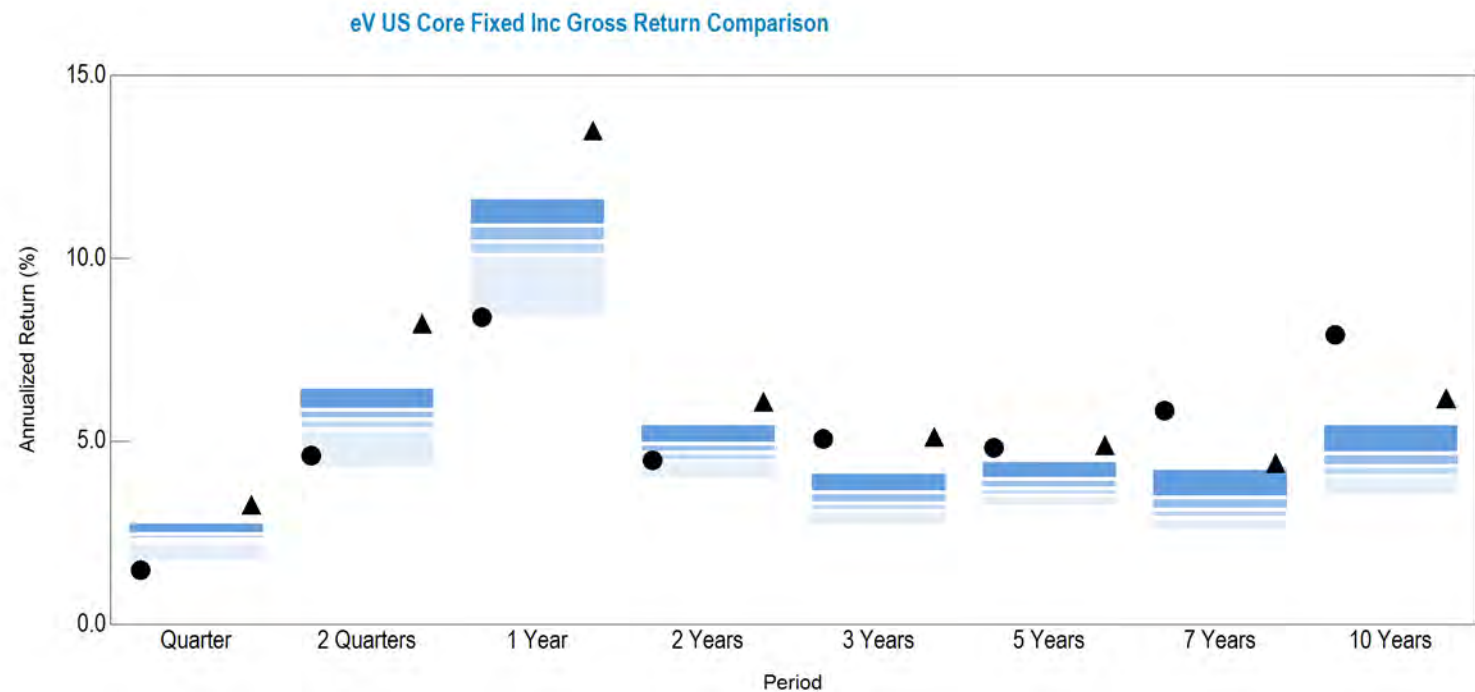


Characteristics
Baird Advisors



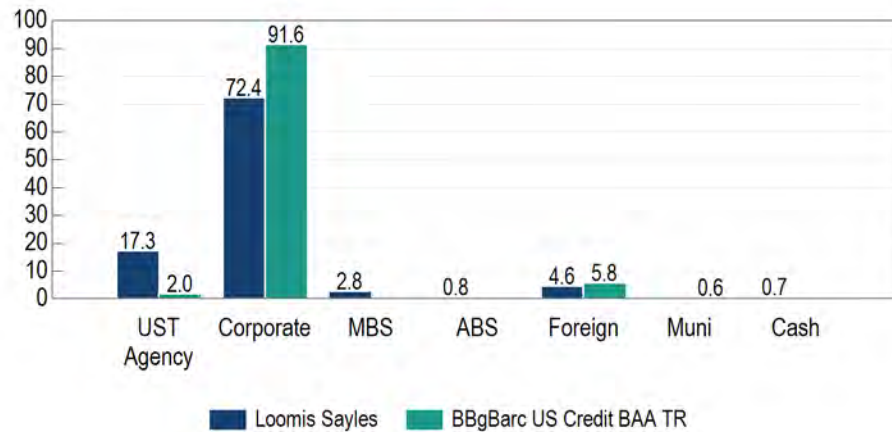
Core Fixed Income Peer Universe Comparison

Period Ending: September 30, 2019

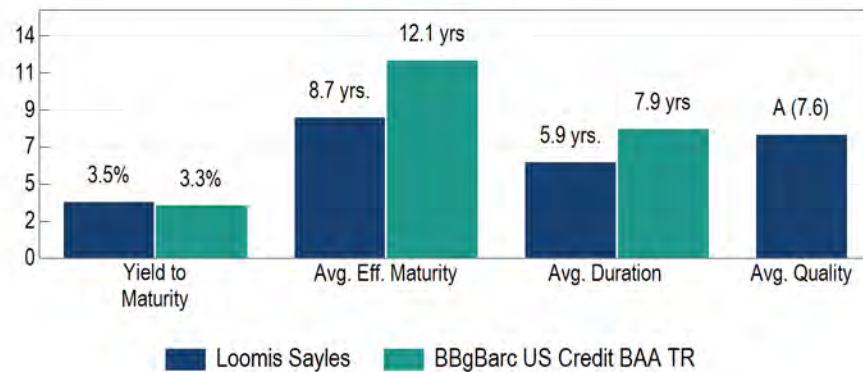


	Return (Rank)															
5th Percentile	2.79		6.48		11.67		5.49		4.15		4.47		4.25		5.48	
25th Percentile	2.48		5.87		10.92		4.94		3.62		3.98		3.47		4.69	
Median	2.34		5.61		10.48		4.70		3.32		3.72		3.14		4.33	
75th Percentile	2.23		5.34		10.10		4.46		3.10		3.53		2.90		4.04	
95th Percentile	1.71		4.28		8.41		3.98		2.68		3.20		2.54		3.52	
# of Portfolios	216		216		216		215		214		211		209		195	
● Loomis Sayles	1.49	(97)	4.60	(94)	8.39	(96)	4.48	(74)	5.06	(3)	4.82	(3)	5.83	(1)	7.91	(1)
▲ BBgBarc US Credit BAA TR	3.26	(1)	8.22	(1)	13.49	(1)	6.08	(3)	5.12	(3)	4.89	(3)	4.40	(4)	6.17	(2)

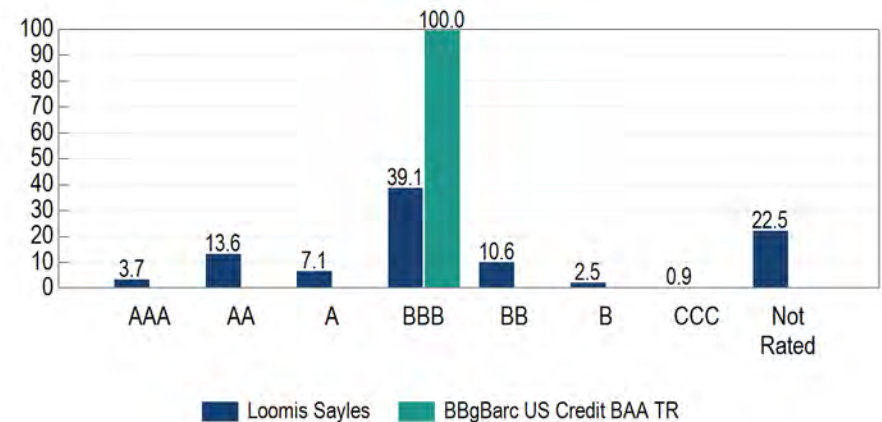
US Sector Allocation
Loomis Sayles



Characteristics
Loomis Sayles



Credit Quality Allocation
Loomis Sayles



Summary

Account Return	1.42
Benchmark Return	3.25
Excess Return	-1.83
Sector Allocation	0.00
Security Selection	-1.88
Trading	0.04
Pricing Differences	0.00
Compounding	0.00

Details

Scheme	Average Weight Account	Average Weight Benchmark	Return Account	Return Benchmark	Contribution to Return Account	Contribution to Return Benchmark	Sector Allocation Effect	Security Selection Effect	Total Effect
Total	100.00	100.00	1.38	3.26	1.38	3.26	0.00	-1.88	-1.88
Argentine Peso	0.41	0.00	-54.89	3.26	-0.31	0.00	0.00	-0.33	-0.33
Canadian Dollar	0.02	0.00	-1.66	3.26	0.00	0.00	0.00	0.00	0.00
Hungarian Forint	0.18	0.00	-2.28	3.26	-0.01	0.00	0.00	-0.02	-0.02
Malaysian Ringgit	0.70	0.00	-0.36	3.26	0.00	0.00	0.00	-0.03	-0.03
Mexican Peso	0.00	0.00	0.70	3.26	0.00	0.00	0.00	0.00	0.00
Norwegian Krone	0.66	0.00	-5.77	3.26	-0.04	0.00	0.00	-0.06	-0.06
Polish Zloty	0.18	0.00	-3.12	3.26	-0.01	0.00	0.00	-0.02	-0.02
South African Rand	0.00	0.00	0.00	3.26	0.00	0.00	0.00	0.00	0.00
US Dollar	97.84	100.00	1.80	3.26	1.76	3.26	0.00	-1.42	-1.42

Loomis Sayles
Performance Attribution Analysis

Period Ending: September 30, 2019

Summary

Account Return	1.42
Benchmark Return	3.25
Excess Return	-1.83
Sector Allocation	0.00
Security Selection	-1.88
Trading	0.04
Pricing Differences	0.00
Compounding	0.00

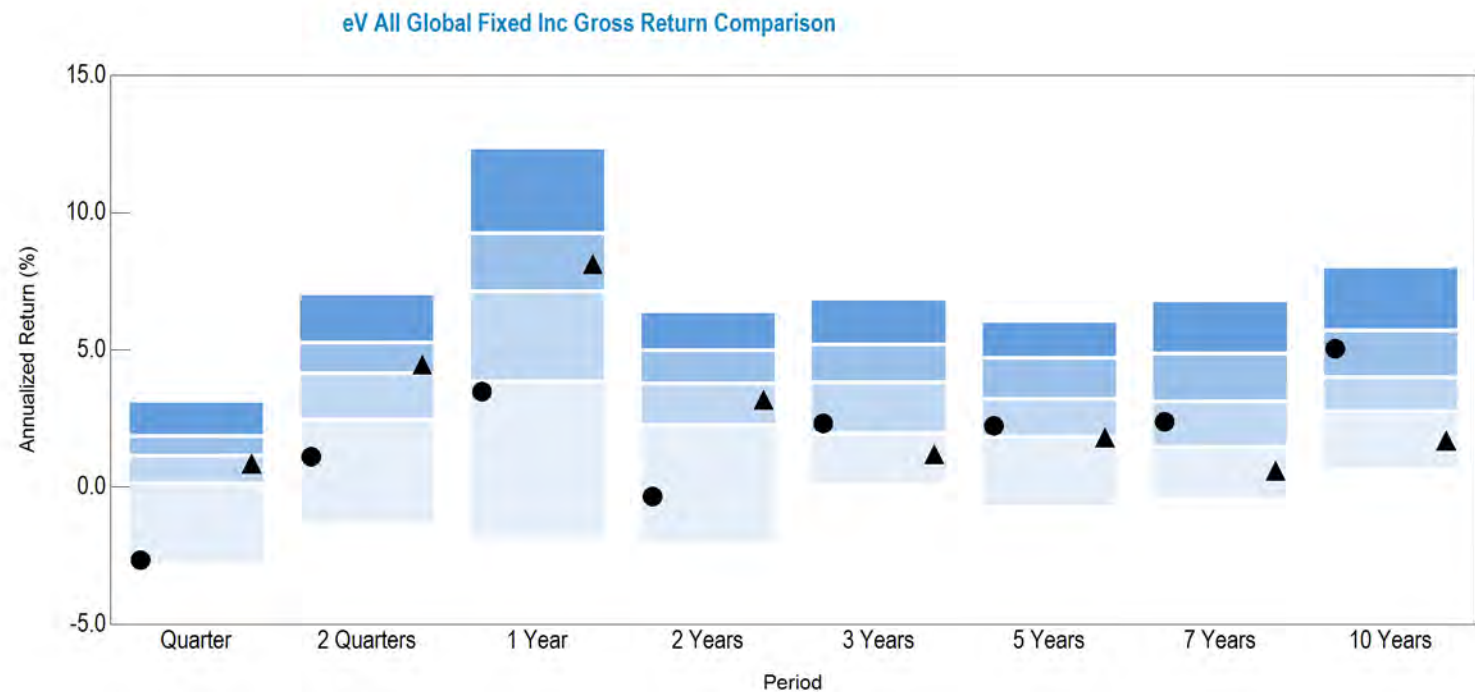
Details

Scheme	Average Weight Account	Average Weight Benchmark	Return Account	Return Benchmark	Contribution to Return Account	Contribution to Return Benchmark	Sector Allocation Effect	Security Selection Effect	Total Effect
Total	100.00	100.00	1.38	3.26	1.38	3.26	-0.85	-1.03	-1.88
No Value	0.09	0.00	-8.72	3.26	-0.07	0.00	0.00	-0.07	-0.07
Less than 1.0	11.08	0.61	-0.78	1.09	-0.10	0.01	-0.24	-0.22	-0.47
1.0 - 2.0	16.03	7.76	0.18	0.97	0.03	0.08	-0.21	-0.13	-0.35
2.0 - 3.0	8.69	8.27	-1.01	1.19	-0.09	0.10	-0.01	-0.20	-0.21
3.0 - 4.0	6.34	8.14	-0.36	1.45	-0.02	0.12	0.04	-0.11	-0.08
4.0 - 5.0	11.19	7.87	0.60	1.78	0.06	0.14	-0.06	-0.14	-0.19
5.0 - 6.0	6.03	7.03	0.28	1.96	0.02	0.14	0.01	-0.11	-0.10
6.0 - 7.0	5.05	6.91	0.85	2.52	0.04	0.17	0.01	-0.08	-0.07
7.0 - 8.0	5.89	5.85	0.76	2.81	0.05	0.17	0.00	-0.12	-0.12
8.0 - 9.0	6.62	6.02	2.82	2.99	0.17	0.18	0.00	-0.01	-0.01
9.0 - 10.0	6.24	4.88	3.27	3.26	0.13	0.16	-0.01	0.00	-0.01
10.0 - 11.0	0.37	1.33	6.04	3.45	0.03	0.05	0.00	0.01	0.01
11.0 - 12.0	0.00	0.95	0.00	3.15	0.00	0.03	0.00	0.00	0.00
12.0 - 13.0	0.00	0.87	0.00	2.95	0.00	0.03	0.00	0.00	0.00
13.0 - 14.0	0.25	0.46	1.01	4.15	0.01	0.02	0.00	-0.02	-0.02
14.0 - 15.0	1.47	0.76	5.78	3.96	0.08	0.03	0.01	0.00	0.01
15.0 - 16.0	0.09	1.59	1.83	5.19	0.00	0.08	-0.03	0.00	-0.03
16.0 - 17.0	0.74	1.40	7.50	5.85	0.02	0.08	-0.02	0.00	-0.02
17.0 - 18.0	0.88	1.31	3.96	4.82	0.07	0.06	0.00	0.01	0.01

Loomis Sayles
Performance Attribution Analysis

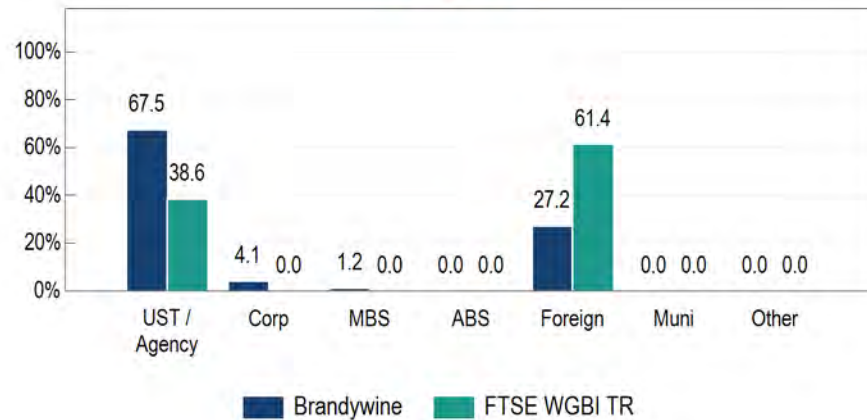
Period Ending: September 30, 2019

Scheme	Average Weight Account	Average Weight Benchmark	Return Account	Return Benchmark	Contribution to Return Account	Contribution to Return Benchmark	Sector Allocation Effect	Security Selection Effect	Total Effect
18.0 - 19.0	0.10	2.53	-1.02	5.15	0.00	0.13	-0.05	0.00	-0.05
19.0 - 20.0	0.24	0.92	14.92	5.98	0.03	0.06	-0.02	0.01	-0.01
20.0 - 21.0	1.36	1.60	8.61	5.15	0.11	0.08	0.00	0.04	0.04
21.0 - 22.0	0.57	1.41	4.02	4.96	0.02	0.07	-0.02	-0.01	-0.02
22.0 - 23.0	0.02	1.68	-16.55	5.40	0.00	0.09	-0.03	0.00	-0.04
23.0 - 24.0	0.90	1.71	7.68	5.40	0.07	0.09	-0.02	0.02	0.00
24.0 - 25.0	0.09	2.48	10.02	5.60	0.01	0.14	-0.06	0.01	-0.05
25.0 - 26.0	0.45	3.39	4.79	5.88	0.02	0.20	-0.08	-0.01	-0.08
26.0 - 27.0	0.42	2.42	13.91	6.31	0.06	0.14	-0.05	0.03	-0.02
27.0 - 28.0	0.46	2.48	-2.84	5.69	-0.01	0.14	-0.05	-0.04	-0.09
28.0 - 29.0	4.03	3.72	9.14	6.59	0.31	0.25	-0.01	0.09	0.07
29.0 - 30.0	4.29	2.17	7.81	6.56	0.33	0.13	0.09	0.03	0.13
30.0 - 31.0	0.02	0.11	0.13	5.38	0.00	0.01	0.00	0.00	-0.01
31.0 - 32.0	0.00	0.29	0.00	7.45	0.00	0.02	-0.01	0.00	-0.01
32.0 - 33.0	0.00	0.05	0.00	6.73	0.00	0.00	0.00	0.00	0.00
34.0 - 35.0	0.00	0.17	0.00	6.96	0.00	0.01	0.00	0.00	0.00
35.0 - 36.0	0.00	0.22	0.00	6.62	0.00	0.02	-0.01	0.00	-0.01
37.0 - 38.0	0.00	0.04	0.00	6.93	0.00	0.00	0.00	0.00	0.00
38.0 - 39.0	0.00	0.18	0.00	7.52	0.00	0.01	-0.01	0.00	-0.01
39.0 - 40.0	0.00	0.09	0.00	9.37	0.00	0.01	-0.01	0.00	-0.01
45.0 - 46.0	0.00	0.03	0.00	8.01	0.00	0.00	0.00	0.00	0.00
46.0 - 47.0	0.00	0.02	0.00	6.65	0.00	0.00	0.00	0.00	0.00
48.0 - 49.0	0.00	0.03	0.00	4.55	0.00	0.00	0.00	0.00	0.00
91.0 - 92.0	0.00	0.10	0.00	6.61	0.00	0.01	0.00	0.00	0.00
95.0 - 96.0	0.00	0.04	0.00	9.46	0.00	0.00	0.00	0.00	0.00
Greater than 98.0	0.00	0.03	0.00	8.51	0.00	0.00	0.00	0.00	0.00
44.0 - 45.0	0.00	0.01	0.00	5.25	0.00	0.00	0.00	0.00	0.00
47.0 - 48.0	0.00	0.02	0.00	8.23	0.00	0.00	0.00	0.00	0.00
58.0 - 59.0	0.00	0.02	0.00	1.58	0.00	0.00	0.00	0.00	0.00
36.0 - 37.0	0.00	0.01	0.00	-0.71	0.00	0.00	0.00	0.00	0.00

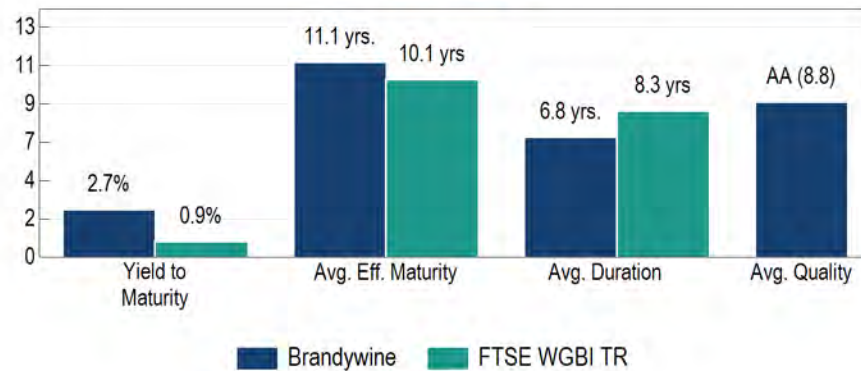


	Return (Rank)							
5th Percentile	3.14	7.05	12.38	6.40	6.86	6.05	6.78	8.03
25th Percentile	1.86	5.27	9.27	5.00	5.20	4.73	4.89	5.72
Median	1.15	4.16	7.14	3.79	3.83	3.22	3.14	4.02
75th Percentile	0.14	2.48	3.85	2.27	1.97	1.84	1.47	2.77
95th Percentile	-2.81	-1.37	-1.90	-2.06	0.08	-0.72	-0.43	0.64
# of Portfolios	452	452	451	440	429	386	328	221
● Brandywine	-2.65 (95)	1.10 (89)	3.47 (79)	-0.35 (89)	2.31 (68)	2.23 (68)	2.37 (60)	5.04 (34)
▲ FTSE WGBI TR	0.85 (61)	4.45 (45)	8.13 (39)	3.19 (62)	1.19 (87)	1.80 (76)	0.59 (89)	1.69 (89)

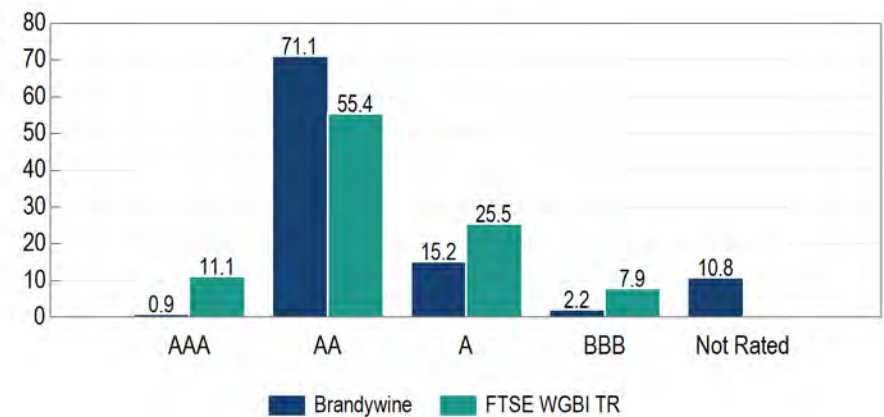
Sectors
Brandywine



Characteristics
Brandywine



Credit Quality Allocation
Brandywine

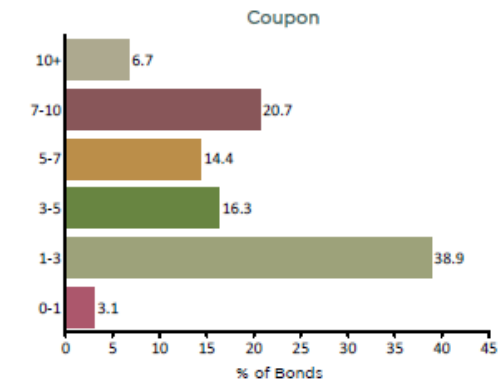
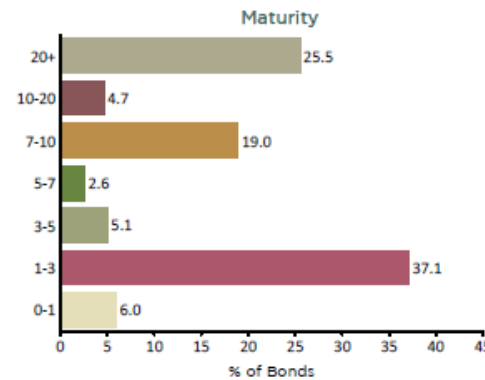


Brandywine Portfolio Characteristics

Period Ending: September 30, 2019

Portfolio Characteristics

	Portfolio	Primary Benchmark
Yield to Maturity (%)	4.48	0.81
Yield to Worst (%)	4.43	0.81
Modified Duration	6.02	8.43
Effective Duration	5.93	8.55
Average Maturity	10.45	9.27
Average Market Price	104.19	-
Average Coupon (%)	4.63	2.30
Current Yield (%)	4.40	-
# of Issues	150	1,035



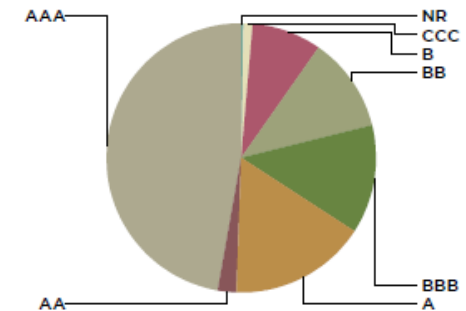
Sector Breakdown

	Market Value (%)	Duration Contribution (In Years)
Government Sovereign	82.91	5.26
Government Owned - No Guarantee	2.18	0.24
Corporate Bond - High Yield	6.93	0.18
Corporate Bond - Investment Grade	3.20	0.18
Government Regional Agencies	2.56	0.04
Mortgage Backed Securities	0.68	0.04
Cash	2.12	-
Derivatives	(0.59)	0.07
Total:	100.00	6.02

Portfolio Credit Quality (Blended Weighted Average Rating)

Combined Rating	%	Cumulative %
AAA	47.2	47.2
AA	2.3	49.5
A	16.5	66.0
BBB	13.0	79.0
BB	11.4	90.4
B	8.2	98.6
CCC	1.3	99.9
NR	0.1	100.0

Average Quality: A



PRIMARY BENCHMARK is FTSE WGBI (USD)

All Averages are US DOLLAR - weighted by the net market value. Average Market Price includes accrued interest. The "Blended Weighted Average Rating" is determined as follows: in line with the methodology used by Barclays Global Indices, the middle rating from the three major NRSROs (S & P, Moody's, and Fitch) will be assigned to each security. In the event that ratings are provided by only two agencies, the lowest rating will be assigned. If only one agency assigns a rating, that rating will be applied. If the security is not rated by one of the three major agencies, U.S. treasuries and certain U.S. agencies are given the U.S. issuer rating. Sovereign treasuries are given the sovereign issuer rating. All other unrated securities are given a rating equivalent to a defaulted bond. The equivalent numerical rating is assigned to each security based on the Security Level scale. A Portfolio Level scale is applied on the weighted average calculation to round for fractional numerical ratings and then converted to an alpha weighted average rating. Cash is included and received the highest rating.

Data included on this page show the aggregate holdings of the Brandywine Emerging Markets Debt Fund ("EMD Fund"), in which the portfolio is invested. Holdings in the EMD Fund are not subject to ACERA's Investment Guidelines. Please note that ACERA owns units of the EMD Fund, not the underlying holdings. Data and characteristics shown are for illustrative purposes only.

Derivatives market value represents the unrealized profit/loss of all derivatives in the portfolio.

Brandywine
Country & Currency Allocation

Period Ending: September 30, 2019

Global Opportunistic Fixed Income

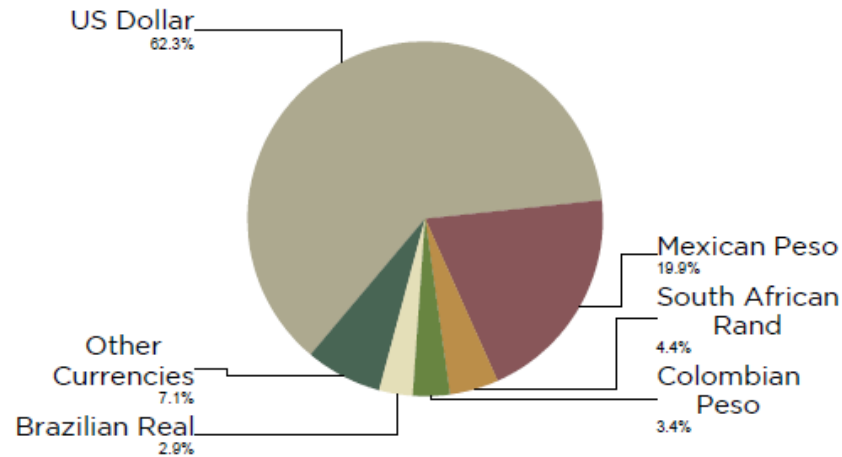
September 30, 2019

Country Allocation	9/30/2019			6/30/2019		Currency Allocation	9/30/2019			6/30/2019	
	Portfolio	Index	Active	Portfolio	Change		Portfolio	Index	Active	Portfolio	Change
*Mexico	14.26	0.67	13.59	12.73	1.53	Euro	0.47	30.80	(30.33)	5.84	(5.37)
United States	52.28	39.16	13.12	49.96	2.32	US Dollar	10.14	39.16	(29.02)	2.03	8.12
*Brazil	6.09	-	6.09	5.97	0.13	Japanese Yen	-	18.66	(18.66)	-	-
United Kingdom	0.25	5.09	(4.84)	0.13	0.12	British Pound Sterling	15.96	5.09	10.87	5.09	10.87
Spain	0.60	4.61	(4.01)	0.62	(0.02)	*Mexican Peso	10.42	0.67	9.76	10.37	0.05
*Colombia	3.88	-	3.88	4.96	(1.08)	Australian Dollar	10.19	1.62	8.57	10.30	(0.11)
Australia	4.85	1.62	3.23	4.89	(0.04)	Norwegian Krone	6.22	0.19	6.03	9.23	(3.01)
*Indonesia	2.72	-	2.72	2.61	0.11	*Brazilian Real	5.15	-	5.15	5.97	(0.82)
*Egypt	2.42	-	2.42	2.19	0.23	*Chilean Peso	5.04	-	5.04	5.63	(0.59)
*Malaysia	2.77	0.38	2.39	4.90	(2.14)	Swedish Krona	5.20	0.27	4.93	8.28	(3.07)
*South Africa	2.82	0.45	2.37	4.29	(1.47)	*Indonesian Rupiah	4.36	-	4.36	4.72	(0.35)
*Turkey	1.80	-	1.80	-	1.80	South Korean Won	3.94	-	3.94	3.97	(0.03)
Canada	0.19	1.50	(1.31)	0.18	0.01	*Colombian Peso	3.88	-	3.88	4.96	(1.08)
*Poland	1.72	0.47	1.25	2.13	(0.41)	New Zealand Dollar	3.85	-	3.85	4.02	(0.16)
*Argentina	1.09	-	1.09	1.75	(0.66)	*Russian Ruble	3.21	-	3.21	3.53	(0.31)
*Russian Federation	0.72	-	0.72	-	0.72	*Malaysian Ringgit	3.12	0.38	2.74	5.34	(2.22)
Ireland	0.07	0.59	(0.52)	-	0.07	*Polish Zloty	2.97	0.47	2.50	3.11	(0.14)
*Chile	0.37	-	0.37	-	0.37	*Egyptian Pound	2.42	-	2.42	2.19	0.23
*Zambia	0.28	-	0.28	0.08	0.19	*Czech Koruna	1.93	-	1.93	2.00	(0.06)
*Kuwait	0.23	-	0.23	-	0.23	Canadian Dollar	-	1.50	(1.50)	-	-
Israel	0.21	-	0.21	0.07	0.15	*Hungarian Forint	0.72	-	0.72	0.97	(0.25)
*Ghana	0.18	-	0.18	0.07	0.12	Danish Krone	-	0.43	(0.43)	-	-
*Saudi Arabia	0.18	-	0.18	-	0.18	*Argentine Peso	0.34	-	0.34	-	0.34
*Peru	0.15	-	0.15	2.11	(1.96)	Singapore Dollar	-	0.32	(0.32)	-	-
*United Arab Emirates	0.15	-	0.15	-	0.15	*South African Rand	0.16	0.45	(0.29)	0.37	(0.22)
Macao	0.11	-	0.11	-	0.11	*New Turkish Lira	0.15	-	0.15	-	0.15
*Vietnam	0.09	-	0.09	-	0.09	*Peruvian Nuevo Sol	0.15	-	0.15	2.11	(1.96)
*Ecuador	0.08	-	0.08	-	0.08						
Other Countries	0.04	45.47	(45.44)	0.02	0.01						
Derivative P/L	(0.59)	-	(0.59)	0.33	(0.92)						
Total:	100.00	100.00	-	100.00	-	Total:	100.00	100.00	-	100.00	-

Global Opportunistic Fixed Income

September 30, 2019

Source of Portfolio Duration by Currency Denomination



Modified Duration Contribution by Currency
(In Years)

Currency	9/30/2019				6/30/2019	
	0-3	>3-10	>10-20	>20+	Total	Total Change
US Dollar	0.05	0.79	0.14	2.78	3.75	0.04
*Mexican Peso	-	0.10	0.35	0.74	1.20	0.00
*South African Rand	-	-	-	0.27	0.27	(0.14)
*Colombian Peso	0.00	0.20	-	-	0.21	(0.07)
*Brazilian Real	0.02	0.15	-	-	0.18	(0.02)
*Indonesian Rupiah	-	0.16	-	-	0.16	(0.01)
*Malaysian Ringgit	0.03	0.07	-	-	0.10	(0.04)
Australian Dollar	0.04	-	-	-	0.04	0.00
Euro	-	-	-	0.03	0.03	0.00
*Polish Zloty	0.01	-	0.02	-	0.03	0.01
*Russian Ruble	-	0.03	-	-	0.03	0.03
*Peruvian Nuevo Sol	-	0.01	-	-	0.01	(0.18)
*Egyptian Pound	0.01	-	-	-	0.01	(0.00)
*Chilean Peso	0.00	-	-	-	0.00	0.00
*Argentine Peso	0.00	-	-	-	0.00	0.00
Total	0.17	1.52	0.51	3.82	6.02	(0.35)

Modified Duration Contribution by Country
vs. FTSE WGBI (USD)

(In Years)

Country	9/30/2019				Total	Index	6/30/2019	
	0-3	>3-10	>10-20	>20+			Active	Total Change
*Mexico	0.00	0.10	0.41	0.94	1.44	0.04	1.41	0.18
United Kingdom	-	0.01	-	-	0.01	0.74	(0.73)	0.00
United States	0.02	0.63	0.07	2.51	3.23	2.54	0.69	(0.30)
Spain	-	-	-	0.03	0.03	0.38	(0.34)	0.00
*South Africa	-	-	-	0.27	0.27	0.03	0.24	(0.14)
*Brazil	0.02	0.18	0.01	-	0.22	-	0.22	0.02
*Colombia	0.00	0.20	-	-	0.21	-	0.21	(0.07)
*Indonesia	0.01	0.16	-	-	0.17	-	0.17	(0.00)
*Turkey	-	0.05	-	0.08	0.12	-	0.12	0.12
Canada	0.00	-	-	-	0.00	0.11	(0.11)	(0.00)
*Malaysia	0.03	0.07	-	-	0.10	0.03	0.07	(0.04)
Australia	0.04	-	-	-	0.04	0.11	(0.07)	0.00
Ireland	-	0.00	-	-	0.00	0.05	(0.05)	0.00
*Russian Federation	-	0.04	-	-	0.04	-	0.04	0.04
*Argentina	0.00	0.04	-	-	0.04	-	0.04	(0.06)
*Saudi Arabia	-	0.01	-	-	0.01	-	0.01	0.01
*Peru	-	0.01	-	-	0.01	-	0.01	(0.18)
*Poland	0.01	-	0.02	-	0.03	0.02	0.01	0.01
*Egypt	0.01	-	-	-	0.01	-	0.01	(0.00)
*Kuwait	0.00	0.01	-	-	0.01	-	0.01	0.01
*Chile	0.01	0.00	-	-	0.01	-	0.01	0.01
*Zambia	0.01	-	-	-	0.01	-	0.01	0.00
*Vietnam	-	0.00	-	-	0.00	-	0.00	0.00
*Ecuador	-	0.00	-	-	0.00	-	0.00	0.00
Israel	0.00	-	-	-	0.00	-	0.00	0.00
*United Arab Emirates	0.00	-	-	-	0.00	-	0.00	0.00
*Ghana	0.00	-	-	-	0.00	-	0.00	0.00
*Uruguay	0.00	-	-	-	0.00	-	0.00	0.00
Macao	0.00	-	-	-	0.00	-	0.00	0.00
Other Countries	-	-	-	-	-	4.39	(4.39)	-
Total	0.17	1.52	0.51	3.82	6.02	8.43	(2.41)	(0.35)

Manager Compliance Checklist

Period Ending: September 30, 2019

	I N D E X O U T P E R F O R M A N C E						DATABASE BENCHMARK	MANAGER TO BE PLACED ON WATCH LIST
MANAGER	AFTER FEE VS. INDEX		BEFORE FEE VS. INDEX		RISK ADJUSTED (SHARPE RATIO)		MEDIAN	
	3 YEAR	5 YEAR	3 YEAR	5 YEAR	3 YEAR	5 YEAR	3 YEAR 5 YEAR	
AQR (MSCI ACWI EX US GROSS)	NO	NO	NO	NO	NO	NO	NO NO	YES
BAIRD ADVISORS (BBGBARC US AGGREGATE)	YES	YES	YES	YES	YES	YES	YES YES	NO
BRANDYWINE FIXED INCOME (FTSE WGBI)	YES	YES	YES	YES	YES	NO	NO NO	YES
CAPITAL GROUP (MSCI ACWI EX US GROSS)	YES	YES	YES	YES	YES	YES	YES YES	NO
KENNEDY (RUSSELL 2000 VALUE)	NO	NO	NO	NO	NO	NO	NO NO	YES
LOOMIS SAYLES (BBGBARC US CREDIT BAA)	NO	NO	NO	NO	YES	YES	YES YES	NO
MONDRIAN (MSCI ACWI EX US GROSS)	NO	NO	NO	NO	NO	NO	NO YES	YES
PZENA (RUSSELL 1000 VALUE)	NO	NO	NO	NO	NO	NO	NO NO	YES
TCW (RUSSELL 1000 GROWTH)	YES	YES	YES	YES	NO	NO	YES YES	YES
TEMPLETON (MSCI ACWI EX US SMALL CAP GROSS)	YES	YES	YES	YES	YES	NO	NO NO	YES

1 Next Century will be replaced by William Blair

Policy Index and Benchmark History

Period Ending: September 30, 2019

Total Plan Policy Index	As of:														
	6/1/19	10/1/17	7/1/16	1/1/13	10/1/11	4/1/11	1/1/09	7/1/06	4/1/03	6/1/01	10/1/97	1/1/96	10/1/94	1/1/92	1/1/80
91-day US T-Bill											1%	1%	1%	1%	2%
BBgBarc Aggregate	11.40%	11.25%	11.25%	11.25%	15%	18%	18%	21%	23%	26%	33%	29%	32%	37%	30%
BBgBarc High Yield	1.60%	1.50%	1.50%	1.50%	2.0%	2.4%	2%	3%	3%	3%					
Bloomberg Commodity	0.75%	0.75%	0.75%												
FTSE WGBI	3.00%	2.25%	2.25%	2.25%	3%	3.6%	3.6%	4%	4%	5%					
CPI-U +3% (RR)				5.00%	5%										
MSCI ACWI ex US							23%	22%	22%	22%					
MSCI ACWI ex US IMI	25.00%	26.00%	26.00%	27.00%	25%	23%									
MSCI EAFE											10%	10%	10%	10%	
MSCI Emg Mkts Free ex Malaysia											3%				
MSCI World net															10%
NCREIF						6%	6%	9%	9%	9%					
NCREIF ODCE	8.00%	8.00%	8.00%	6.00%	6%										
Russell 3000	25.00%	28.00%	28.00%	32.00%	34%	37%	37%	41%	39%	35%	42%	49%	47%	40%	
HFRI FoF Composite	9.00%	9.00%													
Thomson Reuters CJA Global All PE	8.00%	9.00%													
Russell 3000 +1% (PE)			18.00%	15.00%	10%										
Russell 3000 +1.5% (PE)						10%	10%								
Russell 3000 +4% (AI)											2%				
S&P 500															55%
S&P Global Infrastructure	1.75%	1.75%	1.75%												
S&P Global Natural Resources	2.50%	2.50%	2.50%												
S&P/LSTA Leveraged Loan	4.00%														
Wilshire RE											9%	11%	10%	12%	3%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

US Equity Benchmark

As of:

	1/1/92	1/1/80
Russell 3000	100%	0%
S&P 500	0%	100%
	100.0%	100.0%

International Equity Benchmark

As of:

	4/1/11	6/1/01	10/1/97	1/1/92	1/1/80
MSCI ACWI ex US		100%			
MSCI ACWI ex US IMI	100%				
MSCI EAFE			77%	100%	
MSCI Emg Mkts Free ex Malaysia			23%		
MSCI World net					100%
	100.0%	100.0%	100.0%	100.0%	100.0%

Fixed Income Benchmark

As of:

	6/1/19	6/1/01	1/1/80
BBgBarc Aggregate	71.25%	75%	100%
BBgBarc High Yield	10.00%	10%	
FTSE WGBI	18.75%	15%	
	100.0%	100.0%	100.0%

Real Estate Benchmark

As of:

	1/1/80
NCREIF ODCE	100%
	100.0%

Real Assets Benchmark

As of:

	7/1/16	10/1/11
CPI-U +3%		100%
Bloomberg Commodity	15%	
S&P Global Infrastructure	35%	
S&P Global Natural Resources	50%	
	100.00%	100.0%

Glossary

Allocation Effect: An attribution effect that describes the amount attributable to the managers' asset allocation decisions, relative to the benchmark.

Alpha: The excess return of a portfolio after adjusting for market risk. This excess return is attributable to the selection skill of the portfolio manager. Alpha is calculated as: $\text{Portfolio Return} - [\text{Risk-free Rate} + \text{Portfolio Beta} \times (\text{Market Return} - \text{Risk-free Rate})]$.

Benchmark R-squared: Measures how well the Benchmark return series fits the manager's return series. The higher the Benchmark R-squared, the more appropriate the benchmark is for the manager.

Beta: A measure of systematic, or market risk; the part of risk in a portfolio or security that is attributable to general market movements. Beta is calculated by dividing the covariance of a security by the variance of the market.

Book-to-Market: The ratio of book value per share to market price per share. Growth managers typically have low book-to-market ratios while value managers typically have high book-to-market ratios.

Capture Ratio: A statistical measure of an investment manager's overall performance in up or down markets. The capture ratio is used to evaluate how well an investment manager performed relative to an index during periods when that index has risen (up market) or fallen (down market). The capture ratio is calculated by dividing the manager's returns by the returns of the index during the up/down market, and multiplying that factor by 100.

Correlation: A measure of the relative movement of returns of one security or asset class relative to another over time. A correlation of 1 means the returns of two securities move in lock step, a correlation of -1 means the returns of two securities move in the exact opposite direction over time. Correlation is used as a measure to help maximize the benefits of diversification when constructing an investment portfolio.

Excess Return: A measure of the difference in appreciation or depreciation in the price of an investment compared to its benchmark, over a given time period. This is usually expressed as a percentage and may be annualized over a number of years or represent a single period.

Information Ratio: A measure of a manager's ability to earn excess return without incurring additional risk. Information ratio is calculated as: excess return divided by tracking error.

Interaction Effect: An attribution effect that describes the portion of active management that is contributable to the cross interaction between the allocation and selection effect. This can also be explained as an effect that cannot be easily traced to a source.

Portfolio Turnover: The percentage of a portfolio that is sold and replaced (turned over) during a given time period. Low portfolio turnover is indicative of a buy and hold strategy while high portfolio turnover implies a more active form of management.

Price-to-Earnings Ratio (P/E): Also called the earnings multiplier, it is calculated by dividing the price of a company's stock into earnings per share. Growth managers typically hold stocks with high price-to-earnings ratios whereas value managers hold stocks with low price-to-earnings ratios.

R-Squared: Also called the coefficient of determination, it measures the amount of variation in one variable explained by variations in another, i.e., the goodness of fit to a benchmark. In the case of investments, the term is used to explain the amount of variation in a security or portfolio explained by movements in the market or the portfolio's benchmark.

Selection Effect: An attribution effect that describes the amount attributable to the managers' stock selection decisions, relative to the benchmark.

Sharpe Ratio: A measure of portfolio efficiency. The Sharpe Ratio indicates excess portfolio return for each unit of risk associated with achieving the excess return. The higher the Sharpe Ratio, the more efficient the portfolio. Sharpe ratio is calculated as: $\text{Portfolio Excess Return} / \text{Portfolio Standard Deviation}$.

Sortino Ratio: Measures the risk-adjusted return of an investment, portfolio, or strategy. It is a modification of the Sharpe Ratio, but penalizes only those returns falling below a specified benchmark. The Sortino Ratio uses downside deviation in the denominator rather than standard deviation, like the Sharpe Ratio.

Standard Deviation: A measure of volatility, or risk, inherent in a security or portfolio. The standard deviation of a series is a measure of the extent to which observations in the series differ from the arithmetic mean of the series. For example, if a security has an average annual rate of return of 10% and a standard deviation of 5%, then two-thirds of the time, one would expect to receive an annual rate of return between 5% and 15%.

Style Analysis: A return based analysis designed to identify combinations of passive investments to closely replicate the performance of funds

Style Map: A specialized form or scatter plot chart typically used to show where a Manager lies in relation to a set of style indices on a two-dimensional plane. This is simply a way of viewing the asset loadings in a different context. The coordinates are calculated by rescaling the asset loadings to range from -1 to 1 on each axis and are dependent on the Style Indices comprising the Map.

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PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS



PERIOD ENDING: JUNE 30, 2019

Private Equity Performance Review

Alameda County Employees' Retirement Association

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DEBT RELATED

- **HY issuance was up and leveraged loan issuance was down.** During the first half of 2019, US high yield issuance of \$130.7 billion¹ was up 21.0% compared to 1H 2018. Leveraged loan issuance has been very weak in 2019. 1H 2019 volume was \$315.6 billion¹, down 57.2% versus 1H 2018.
- **Spreads widened across the board.** US HY Credit Index loosed by 38 bps or 9.9%² versus the same period last year. BB, B and CCC index loosed by 16 bps, 67 bps and 175 bps respectively, a 5.8%², 15.9%² and 17.0%² increases versus the same period last year.
- **Slight increase in LBO debt, with deterioration in interest coverage.** US total leverage (Debt / EBITDA) for 1H 2019 at 6.0x³ up 5.8% from the same time last year. Interest coverage (EBITDA / Cash Interest) of 1H 2019 was 2.3x³, down 22.6% from 1H 2018.

GLOBAL

- **PE dry powder keeps surging globally.** For Q1 2019, global total PE dry powder was at \$1.50 trillion⁴, up 14.2% from Q1 2018. US total PE was up by 17.2% to \$790.9 billion⁴; Europe total PE was up by 6.3% to \$298.4 billion⁴; Asia total PE was up by 15.8% to \$358.0 billion⁴; and the rest of world total PE was up by 10.5% to \$49.5 billion⁴.
- **Investment activity was down.** During 1H 2019, global PE firms invested in \$295.1 billion^{6&12} worth of deals, down 22.8% from the same time prior year and closed on 9,861 transactions^{6&12}, down 0.6% from the first half of 2018.

US BUYOUTS

- **Dry powder was up.** For Q1 2019, US buyout was \$437.4 billion⁴, up by 25.6% from the same time in 2018.
- **Less fundraising activity, but with significantly larger fund sizes.** In the first 6 months of 2019, US buyout firms across all buyout strategies raised \$106.5 billion⁵, up by 195.8% from same time prior year.
- **Investment activity was down.** During 1H 2019, US buyout firms invested in \$105.8 billion⁶ worth of deals, down 27.4% from the same time last year and closed on 1,338 transactions⁶, down 16.4% versus the same time in 2018.

- **LBO price multiples were up.** As of June 30, 2019, US LBO purchase price multiples (Enterprise Value / EBITDA) were at 11.2x⁷, a 14.3% increase from the first half of 2018.
- **Exit activity slowed down but large transactions.** During 1H 2019, US buyout firms exited 441 companies¹², representing \$72.8 billion¹² in total transaction value. This represented a 63.9% decrease in the number of exits and a 53.7% increase in total transaction value compared to the same time last year.

US VENTURE CAPITAL

- **Dry powder increasing.** For Q1 2019, US VC dry powder was at \$118.2 billion⁴, up 12.5% from the last year.
- **Fundraising activity slowed down a bit, but average fund size increased.** US VC firms raised \$24.9 billion⁵ during 1H 2019, a 29.7% increase from the same period last year. 206 funds⁵ closed in 1H 2019, an 8.8% decrease from the same period last year. The average US VC fund size increased by 42.3% at \$120.9 million⁵ versus the same period last year.
- **Investment activity up.** US VC firms deployed \$62.9 billion¹² in capital during the first half of 2019, a 42.6% increase from 1H 2018. The number of rounds closed at 2,761¹², a 21.5% decrease from the same time last year. The average investment per deal increased to \$22.8 million¹², a 30% increase from prior year.
- **All stages valuations were up, except Series C flat.** Compared to 1H 2018, the average pre-money valuations increased across almost all stages in the first half of 2019: up 7.1% at \$7.5 million⁸ for Seed stage, 12% at \$22.4 million⁸ for Series A, 18.2% at \$65.0 million⁸ for Series B, and 50.2% at \$417.5 million⁸ for Series D. Series C pre-money valuation stayed flat \$115.0 million⁸. Over the past 3 years, the average pre-money valuations of Seed stage, Series A, Series B, Series C and Series D investments were up 27.1%, 58.5%, 72.9%, 27.8% and 108.8%, respectively⁹.
- **Exit activity increased with large transactions.** US VC firms exited 304 companies¹² in 1H 2019, up by 4.1% from the same period last year, representing \$46.0 billion¹² in transaction value, up 15.6% from the same period last year.

EX US

- **Ex US dry powder grew but less than dry powder in the US.** PE dry powder outside the US grew to \$706.1 billion⁴ for Q1 2019, a 10.9% increase versus last year. Dry powder outside the US was still 10.7% less than the dry powder in the US (\$790.9 billion⁴).
 - **Europe buyout and VC dry powders were up.** For Q1 2019, Europe buyout dry power was \$203.5 billion⁴, up by 7.6% from last year. Same time, VC dry powder in Europe grew to \$30.8 billion⁴, a 16.7% increase from prior year.
 - **Dry powder of buyout, VC and growth equity in Asia kept increasing.** At the end of Q1 2019, Asia buyout dry power was \$85.9 billion⁴, up by 6% from last year. VC dry powder in Asia increased to \$103.5 billion⁴, up by 24.0% from prior year. Growth equity dry powder grew to \$149.4 billion⁴, a 21.3% increase from 2018.
- **Fundraising outside of US was down.** For 1H 2019, Ex US fundraising was down 19.4% to \$103.3 billion⁵ compared to same time prior year. The decrease was led by European funds which raised \$58.8 billion⁵, down 21.2% from same time last year. Fundraising was down in Asia as well, down by 17.2% from \$46.5 billion in 1H 2018 to \$38.5 billion⁵ in 1H 2019. Fundraising in the rest of the world was down 15.5% to \$6.0 billion⁵ compared to 1H 2018.
- **Investments activity was up except for Asia VC.** Both buyout and venture capital firms in Europe and Asia buyout firms increased number of deals and aggregate deal volume in the first half of 2019.
 - **Europe buyout and VC investment activities decreased.** In 1H 2019, Europe buyout firms transacted on \$46.0 billion⁶ in aggregate value, down by 47.1% from 1H 2018. VC investment activity was up from \$11.3 billion during 1H 2018 to \$17.2 billion¹² during the first half of 2019, an increase of 52.3%.
 - **Asia buyout activity was up, while VC investment activities was down significantly.** During 1H 2019, Asia buyout firms closed on \$17.9 billion⁶ in aggregate value, up by 2.4% from the same time of last year's \$17.5 billion⁶. VC investment activity was up from \$60.8 billion during 1H 2018 to \$32.5 billion¹², a decrease of 46.6%.
- **Global purchase price multiples increased.** As of June 30, 2019, global median purchase price multiples (Enterprise Value / EBITDA) was 12.6x¹, an 21.2% increase from the same time last year. This was driven by a 14.3% increase in US purchase multiples at 11.2x⁷, a 2.1% increase in purchase price multiples in Europe at 9.5x¹¹, and a 20.9% decrease in the rest of the world at 11.5x¹¹.
- **Leverage multiples in Europe moved up.** European LBO leverage multiples (Debt / EBITDA) averaged 5.6x¹⁰ during 1H 2019, an increase of 3.0% from the same time last year and an 8.5% decrease from the peak (6.1x¹¹) in 2007. European LBO Loan volume at \$27.5 billion¹¹ is down 41.4% versus 1H 2018, a decrease of 74.4% versus the peak of \$107.3 billion¹¹ in the first half of 2007.
- **Exit activity weaker in Europe, but stronger in Asia.** During the first half of 2019, Europe PE firms aggregate exit value amounted to \$45.1 billion^{6&12}, a 35.7% decrease from the same time last year, while Asia PE firms' exits were up 24.5% from 1H 2018 to \$61.4^{6&12} billion in the same time.

Outlook

- **PE allocations likely to increase slightly.** A recent survey of institutional investors conducted on June 30, 2019 indicated that 40%¹³ intend to increase their allocation for private equity compared to 29%¹³ during the same period last year. 47%¹³ intend to maintain their allocation for private equity compared to 57%¹³ during the same period last year. 13%¹³ intend to commit less capital to private equity compared to 14%¹³ during the same period last year.
- **Institutional investors most interested in investing in North America and like small- to mid-market buyouts.** Based on the survey conducted on June 30, 2019, Institutional investors view North America as the most attractive location to invest in the current economic climate with 88%¹³ choosing it as their preferred developed market investment destination. This compares favorably versus West Europe (60%¹³) and Asia (29%¹³). China (49%)¹³ and India (39%)¹³ are the top two desired countries in the emerging markets for investors. In the same survey, 68%¹³ of institutional investors also cited the small to mid-market buyout strategy as presenting the best opportunities in the current financial climate. Venture capital strategy was mentioned next with 54%¹³ of institutional investors believing it presented the best opportunities.

Notes

1. *Leveraged Loan Monthly Thomson Reuters LPC*
2. *Guggenheim High-Yield Bank Loan Outlook*
3. *LCD's Leveraged Buyout Review*
4. *Preqin Dry powder by Geography (Preqin Website)* Dry powder includes Buyout, Distressed PE, Growth, Mezzanine, Co-investments, Balanced, and Venture Strategies.
5. *Preqin Private Equity Historical Fundraising Statistics*
6. *Preqin Quarterly Update: Private Equity & Venture Capital*
7. *US LBO Review*
8. *PitchBook-NVCA Venture Monitor*
9. *PitchBook's VC Valuations*
10. *LCD European Leveraged Buyout Review*
11. *European Leveraged Lending Review*
 - a. *Ex US Multiples were estimated utilizing a number of sources including Preqin Private Equity-Backed Buyout Deals and Exits Factsheet, LCD's Leveraged*
 - b. *Buyout Review, Pitchbook Europe M&A and Leveraged Loan Monthly Thomson Reuters LPC.*
12. *Preqin Pro Buyout and Venture Deals*
13. *Preqin Investor Update: Alternative Assets*

Private Equity Portfolio Overview

Period Ending: June 30, 2019

	Policy Target	Policy Range	Market Value %	Market Value \$(000)	Unfunded Commitment \$(000)	Market Value + Unfunded \$(000)
ACERA Plan Assets - Total				\$8,354,082		
Private Equity:	9.0%	0-13%	6.7%	\$563,700	\$556,676	\$1,120,376
Buyouts	60.0%	30-80%	56.2%	\$316,600	\$311,401	\$628,001
Venture Capital	20.0%	0-40%	32.1%	\$180,689	\$53,727	\$234,416
Debt-Related/Special Situations	20.0%	0-70%	11.8%	\$66,411	\$191,548	\$257,959

Portfolio Summary

- As of June 30, 2019, the Private Equity portfolio had a total market value of \$563.7 million, with \$316.6 million in Buyouts, \$180.7 million in Venture Capital, and \$66.4 million in Debt-Related / Special Situations. Total market value is the current reported value of investments, excluding the remaining amount of unfunded commitments.
- Since its initial allocation to Private Equity in Q4 2008, ACERA has contributed \$764.8 million towards its Private Equity commitments, with \$416.1 million to Buyouts, \$154.6 million to Venture Capital, and \$194.0 million in Debt-Related / Special Situations. Unfunded commitments total \$556.7 million.

Portfolio Activity

- ACERA made two new commitments to Private Equity in the first half of 2019: \$60.0 million to Great Hill Equity Partners VII, L.P. (\$35.0 million in Buyout and \$25.0 million in Venture Capital) and \$25.0 million to Genstar Capital Partners IX, L.P. (Buyout).

Private Equity Portfolio Performance

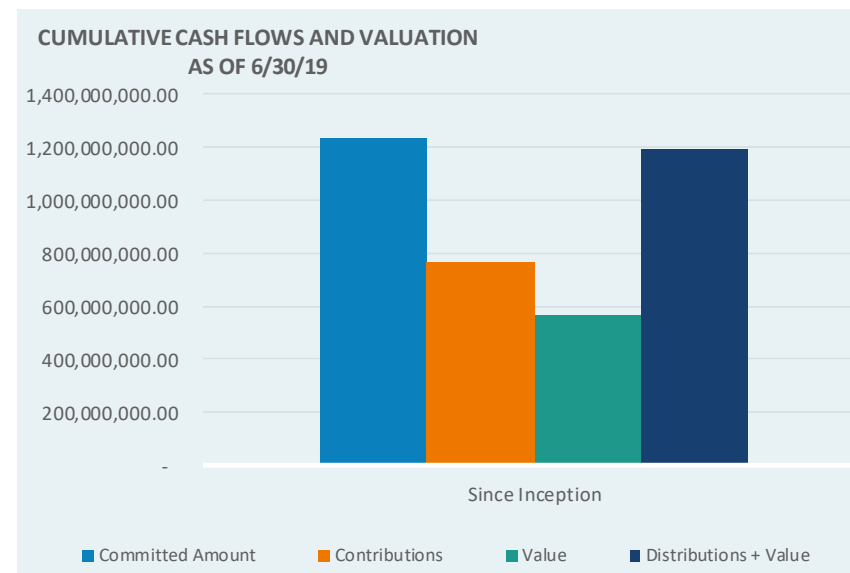
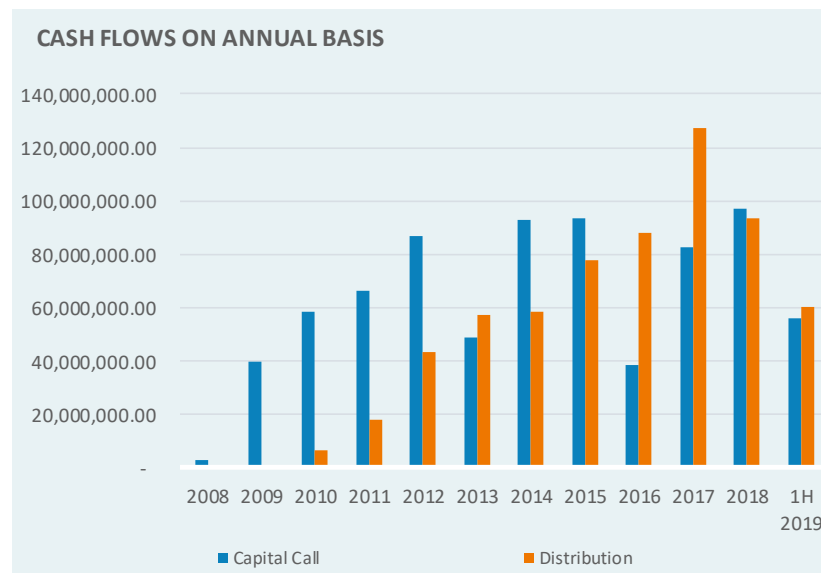
Period Ending: June 30, 2019

Performance

- Current Private Equity portfolio is valued at \$563.7 million. Portfolio investments have a capital-weighted average life of 4.6 years.
 - Since inception, the portfolio has produced +15.08% net IRR, outperforming its Thomson Reuters C|A Global PE benchmark pooled IRR of 13.75% by 133 basis points. Portfolio returns rank above Median on net IRR, Total Value Multiple (TVPI); and Distribution Multiple (DPI).
 - Relative to the global benchmark peers in the same Vintage Years since inception (2008), the net IRR, TVPI, and DPI of the Buyout and Debt-Related / Special Situations portfolios rank above Median; and Venture Capital ranks above Top-Quartile on TVPI and DPI, and above Median on IRR.
- Together with \$630.4 million in realized distributions (0.82x cost), Private Equity's Total Value at \$1,194.1 million is approximately \$429.3 million above \$764.8 million cost (1.56x cost), net of fees. Return drivers include:
 - Venture Capital up \$177.99 million / +115.1% versus cost (General Catalyst VI, Third Rock II & III, Great Hill IV, Khosla Ventures IV & Seed B, and NEA 13

& 14 leading), with 98.3% of called capital realized and distributed. Since inception, this portfolio produced 21.00% net IRR versus its peer global benchmark of 17.36% pooled IRR.

- Buyouts up \$187.14 million / +45.0% versus cost (Sycamore I, Great Hill V, Insight Equity II, and ABRY Partners VII leading), with 68.9% of called capital realized and distributed. Since inception, the Buyouts portfolio produced 14.13% net IRR versus its peer global benchmark of 14.98% pooled IRR.
 - Debt-Related / Special Situations was up \$64.17 million/+33.1% versus cost (ABRY Advanced Securities II, Centerbridge, ABRY Senior Equity IV, and OHA Strategic Credit IB leading), with 98.8% of called capital realized and distributed. Since inception, this portfolio produced 10.50% net IRR versus its peer global benchmark of 10.93% pooled IRR.
- Within Private Equity, the current allocation of invested capital is 56% to Buyouts, 32% to Venture Capital and 12% to Debt / Special Situations. Of \$630.4 million in cash distributions, 45% were from Buyouts, 30% from Debt-Related/Special Situations, and 24% from Venture Capital.



Private Equity – Portfolio Performance vs. Pooled Benchmark IRR

Period Ending: June 30, 2019

	1-Year	3-Year	5-Year	10-Year	Since Inception ²
Buyout	7.07%	11.54%	12.95%	14.34%	14.13%
<i>Thomson Reuters C/A Global Buyout Benchmark¹</i>	12.55%	18.33%	15.14%	15.94%	14.98%
Venture Capital	23.23%	21.95%	22.40%	21.16%	21.00%
<i>Thomson Reuters C/A Global Venture Capital & Growth Equity Benchmark¹</i>	19.30%	18.58%	17.41%	17.74%	17.36%
Debt-Related / Special Situation	-3.65%	9.07%	6.32%	11.00%	10.50%
<i>Thomson Reuters C/A Global Mezzanine & Distressed Benchmark¹</i>	5.01%	10.46%	7.73%	11.13%	10.93%
Total Private Equity	10.77%	14.78%	14.95%	15.37%	15.08%
<i>Thomson Reuters C/A Global All Private Equity Benchmark¹</i>	11.91%	16.02%	13.03%	14.34%	13.75%

Identical cash flows from portfolio inception through 6/30/2019 invested in Russell 3000 Total Return index would yield 13.49% (Long Nickels). The result is an over performance of the portfolio of 1.59% relative to the index. Analysis provided by Solovis.

¹ Benchmarks: Thomson Reuters C/A as of 6/30/19, vintage 2008 through present.

² ACERA's inception date of November 21, 2008 vs. Thomson Reuters C/A's inception date of January 1, 2008.

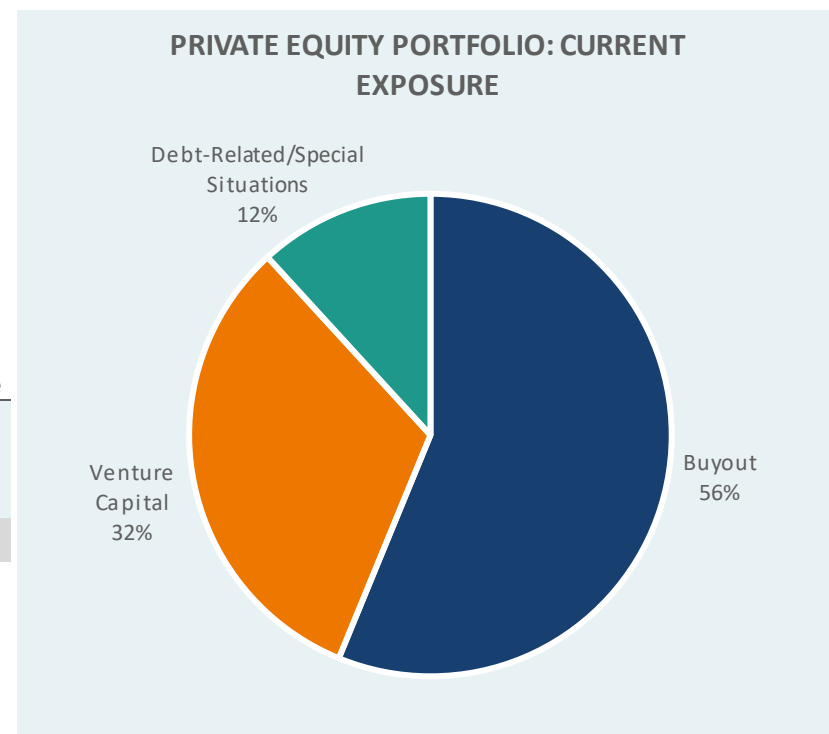
Strategy

Portfolio Diversification

Period Ending: June 30, 2019

Investment Type	Commitment	Current Exposure	Current Exposure as % of Private Equity
Buyout	682,080,900	316,599,509	56.2%
Venture Capital	208,100,000	180,689,434	32.0%
Debt-Related/Special Situations	343,196,451	66,411,391	11.8%
Total Private Equity	1,233,377,351	563,700,334	100.0%

Investment Type	Target Range	Target Exposure	Current Exposure as % of Target	Difference
Buyout	4%-8%	5.4%	3.8%	-1.6%
Venture Capital	0%-3%	1.8%	2.1%	0.3%
Debt-Related/Special Situations	1%-3%	1.8%	0.8%	-1.0%
Total Private Equity	0%-13%	9.0%	6.7%	-2.3%

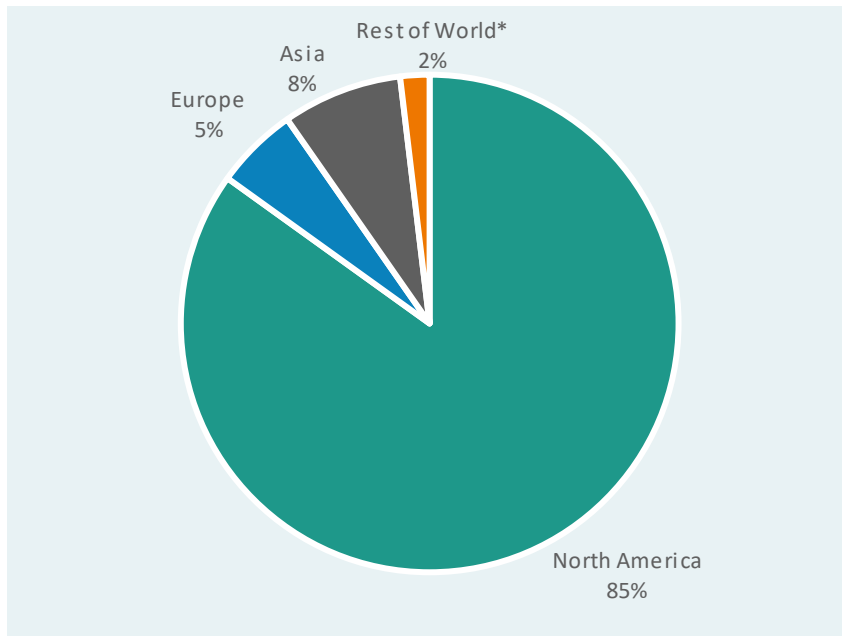


Geography

Private Equity Portfolio Diversification

Period Ending: June 30, 2019

Geography	Current Exposure
North America	463,783,780
Europe	29,036,836
Asia	42,044,595
Rest of World*	10,267,670
Total Private Equity	545,132,880



Based on the value of private equity portfolio companies as of June 30, 2019, as provided by the partnerships. Differences between reported value and the private equity portfolio valuation is due to temporary cash funds, fees, other expenses, and holdings with undisclosed geography breakdown.

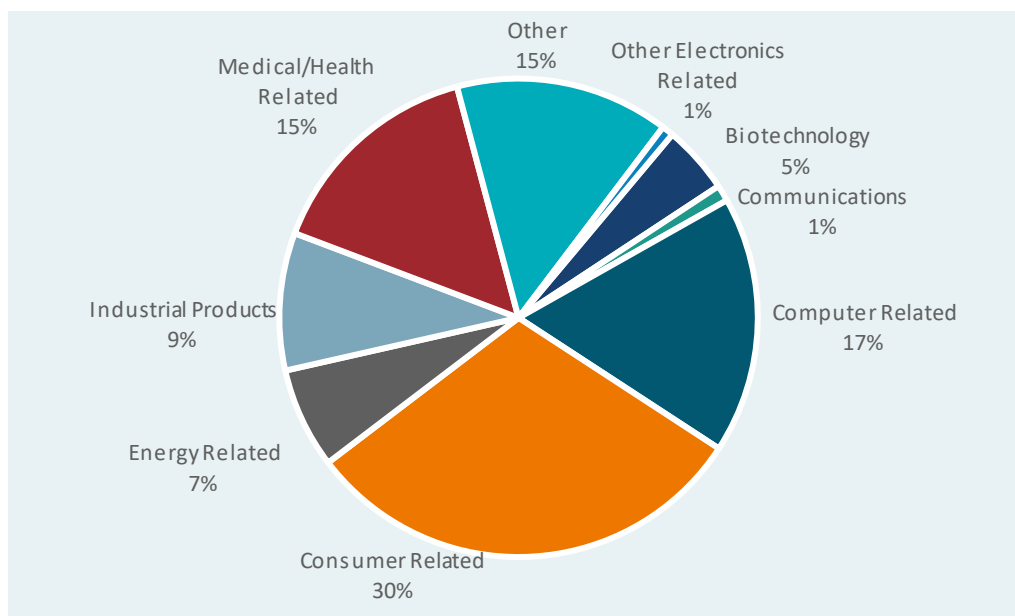
* Rest of World includes: Brazil, New Zealand, Kenya, Israel, United Arab Emirates, Australia, and Turkey.

Industry

Private Equity Portfolio Diversification

Period Ending: June 30, 2019

Industry	Current Exposure
Biotechnology	25,178,623
Communications	5,970,791
Computer Related	94,708,857
Consumer Related	165,986,638
Energy Related	37,124,150
Industrial Products	50,690,888
Medical/Health Related	82,292,678
Other	78,848,212
Other Electronics Related	4,332,043
Total Private Equity	545,132,880

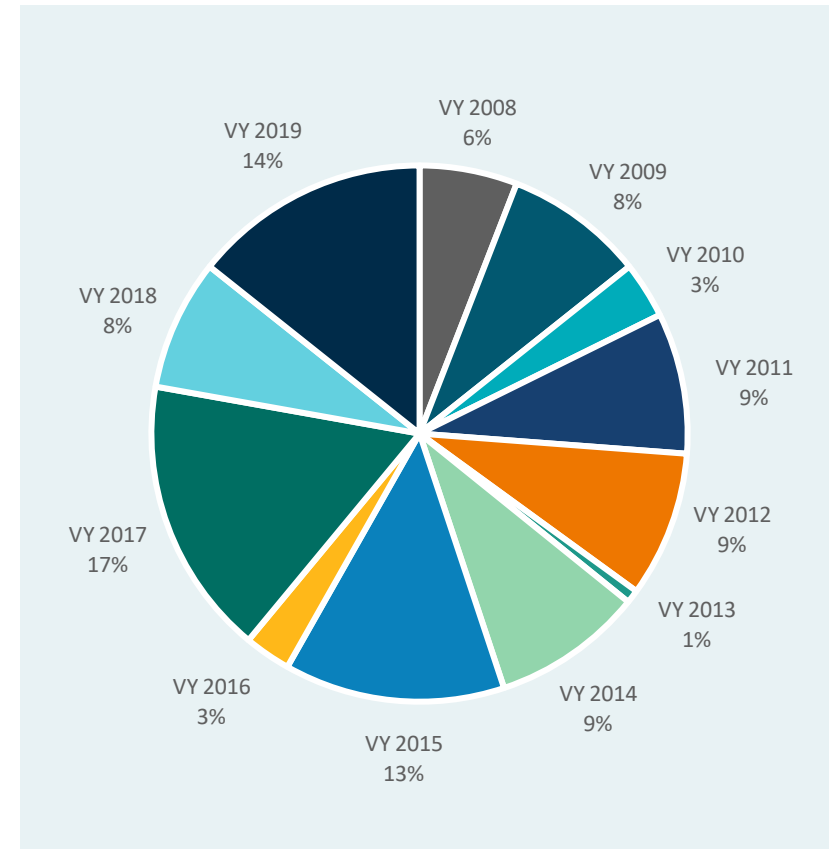


Based on the value of private equity portfolio companies as of June 30, 2019, as provided by the partnerships. Differences between reported value and the private equity portfolio valuation is due to temporary cash funds, fees, other expenses, and holdings with undisclosed industry breakdown.

Vintage Year Private Equity Portfolio Diversification

Period Ending: June 30, 2019

Vintage Year	Commitment as of 6/30/19	% of Portfolio Commitment	Reported Value as of 6/30/19
2008	72,955,878	5.9%	8,541,771
2009	103,500,000	8.4%	36,476,302
2010	42,500,000	3.4%	8,045,211
2011	104,817,073	8.5%	66,832,698
2012	108,500,000	8.8%	124,954,354
2013	10,000,000	0.8%	12,896,956
2014	112,080,000	9.1%	94,812,050
2015	163,250,000	13.3%	125,478,547
2016	35,000,000	2.8%	6,366,218
2017	206,798,500	16.8%	68,377,916
2018	98,000,000	7.9%	8,497,294
2019	175,975,900	14.3%	2,421,018
Total Private Equity	1,233,377,351	100%	563,700,334



- **As of June 30, 2019, the Private Equity Portfolio is below its neutral target allocation of 9.0%, as commitments continue to be made to various funds. The allocation target increased from 6.0% to 9.0% in September 2017.**



PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS



PERIOD ENDING: JUNE 30, 2019

Real Assets Review

Alameda County Employees' Retirement Association

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SAN FRANCISCO 415-362-3484

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- RA Portfolio Diversification by Strategy
 - RA Portfolio Diversification by Geography
 - RA Portfolio Diversification by Vintage Year
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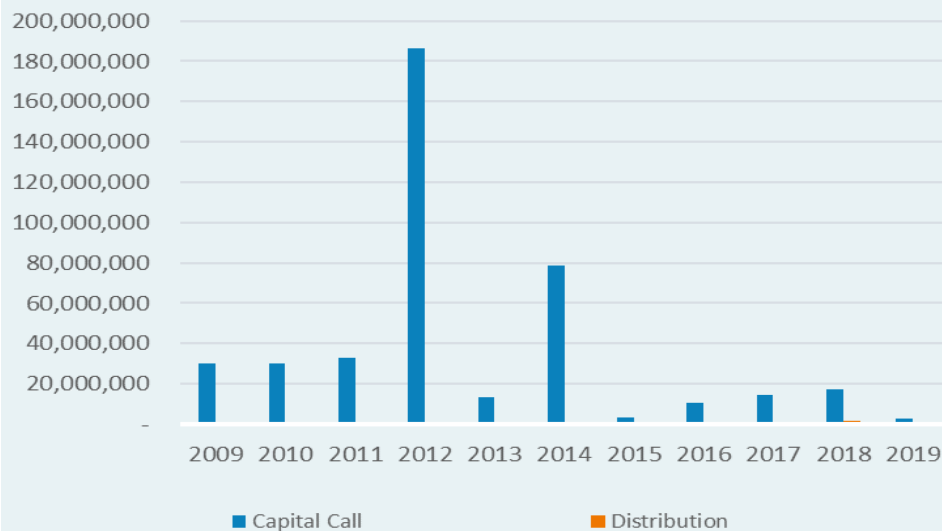
Real Assets Performance

Period Ending: June 30, 2019

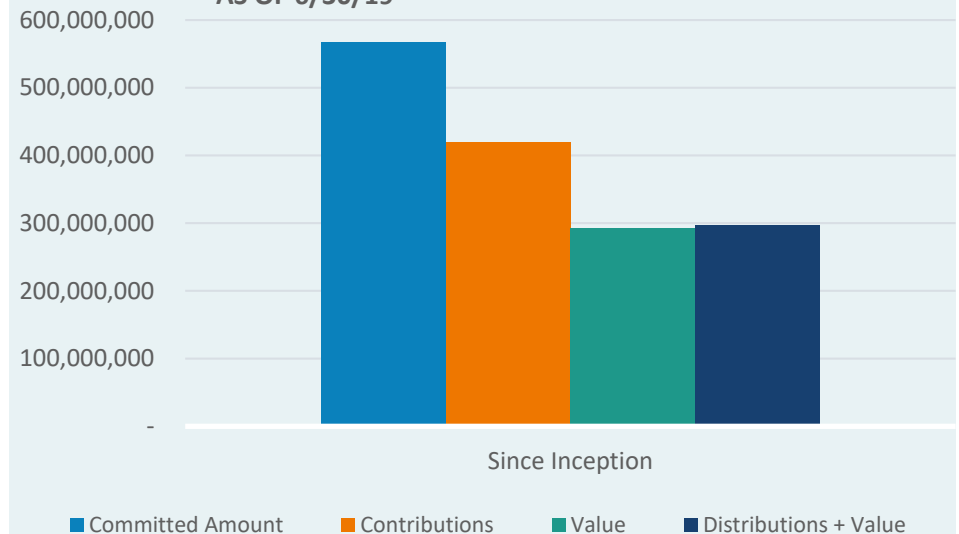
Performance

- ACERA's Real Asset Pool has produced a -5.26% IRR since inception. The portfolio's poor performance has been driven primarily by the large weighting in commodity futures (Gresham and AQR) and from earlier investments in energy (Sheridan). More recent investments in CIM Infrastructure, Quantum Energy, and ISQ Global Infrastructure have emerged from their j-curve but are still too early in their fund life to gauge performance.
- The commitment to Taurus Mining Finance II is ACERA's first mining investment. Taurus' strategy also helps to mitigate the broader portfolio's j-curve due to the unique cash flow structure within project finance loans.

CASH FLOWS ON ANNUAL BASIS



CUMULATIVE CASH FLOWS AND VALUATION
AS OF 6/30/19



Real Assets Performance vs. Pooled Benchmark IRR

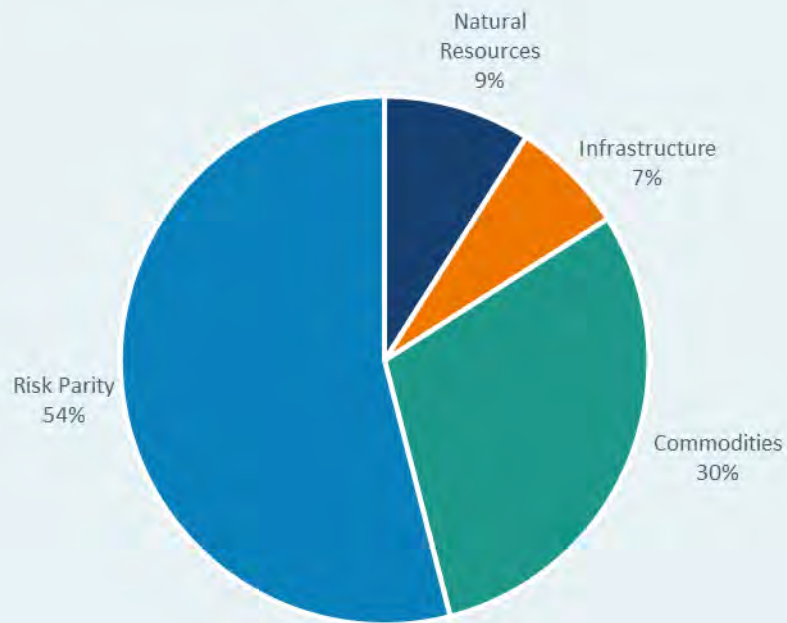
Period Ending: June 30, 2019

	1-Year	3-Year	5-Year	10-Year	Since Inception
Natural Resources Funds	-28.20%	-19.68%	-15.79%	N/A	-15.43%
<i>S&P Global Natural Resources Index</i> ¹	-4.20%	8.52%	1.91%	2.09%	2.09%
Infrastructure Funds	7.10%	N/A	N/A	N/A	5.29%
<i>S&P Global Infrastructure Index</i> ¹	18.30%	9.02%	9.02%	9.02%	9.02%
Liquid Pool Funds	-11.73%	-1.27%	-7.10%	-4.95%	-4.82%
<i>Bloomberg Commodity Index</i> ¹	-6.75%	-2.18%	-9.14%	-6.89%	-6.78%
Total Real Assets	-12.41%	-2.59%	-7.34%	-5.38%	-5.26%

¹ Benchmarks: Identical cash flows invested in the appropriate benchmarks through the life of the portfolio up through 6/30/2019. Analysis provided by Solovis.

Investment Type	Commitment	Current Exposure	Current Exposure as % of Portfolio
Natural Resources	104,000,000	26,517,629	9.1%
Infrastructure	115,000,000	21,280,727	7.3%
Commodities	123,700,000	88,025,341	30.1%
Risk Parity	223,979,858	156,198,951	53.5%
Total Portfolio	566,679,858	292,022,648	100.0%

REAL ASSETS PORTFOLIO: CURRENT EXPOSURE

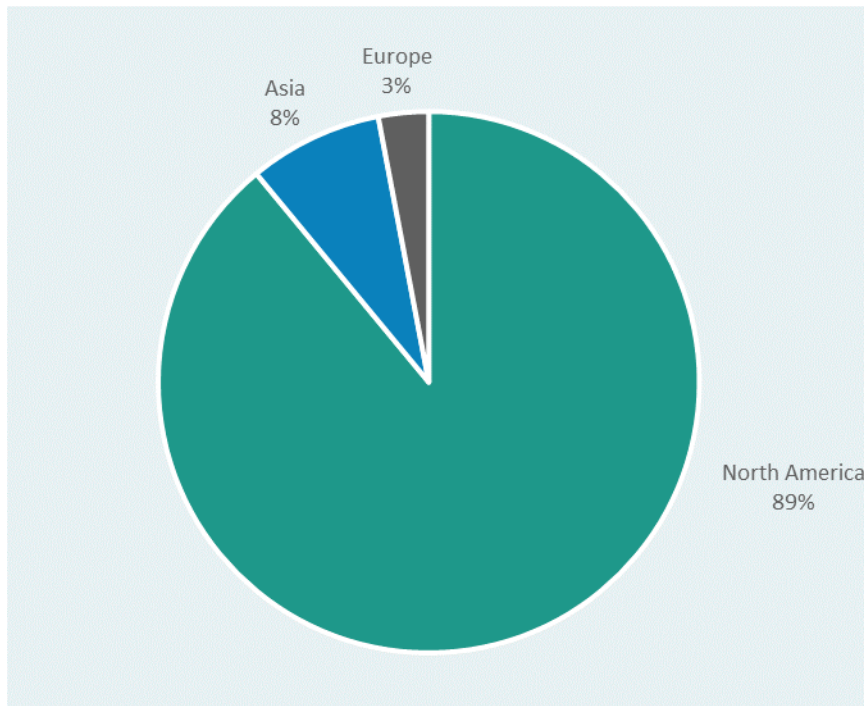


Geography Portfolio Diversification

Period Ending: June 30, 2019

Geography	Reported Fair Value
North America	42,581,745
Asia	3,744,075
Europe	1,472,536
Total Portfolio*	47,798,356

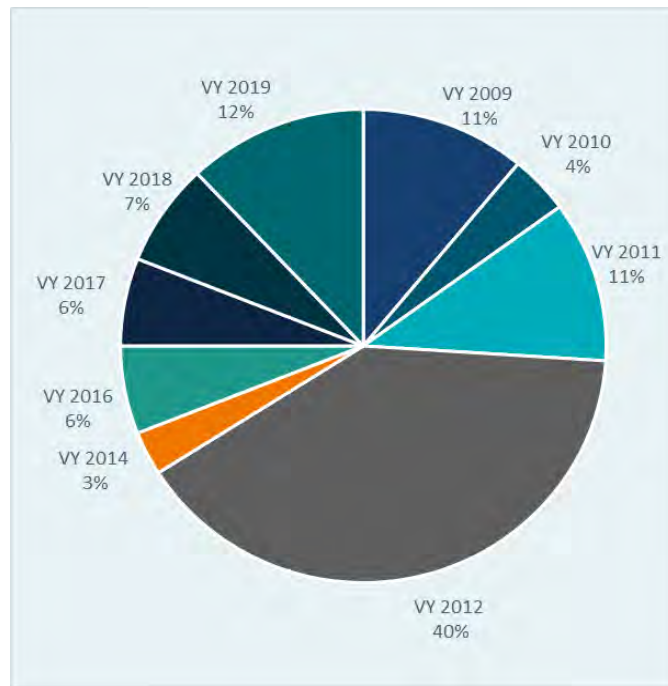
* Excludes Liquid assets.



Vintage Year Portfolio Diversification

Period Ending: June 30, 2019

Vintage Year	Commitment as of 6/30/19	% of Portfolio Commitment	Reported Value as of 6/30/19
2009	62,900,000	11.1%	49,821,337
2010	24,000,000	4.2%	0
2011	60,800,000	10.7%	38,204,004
2012	223,979,858	39.5%	156,198,951
2014	15,000,000	2.6%	12,058,281
2016	35,000,000	6.2%	9,039,276
2017	35,000,000	6.2%	14,459,348
2018	40,000,000	7.1%	10,965,884
2019	70,000,000	12.4%	1,275,567
Total Portfolio	566,679,858	100%	292,022,648



Real Assets Program Update

- ACERA committed to Taurus Mining Finance II in February which marked the portfolios first mining investment and the first dedicated debt fund.
- We are actively looking at an opportunity in Core Infrastructure which we may bring to the Board in early 2020.
- Valuations across most asset classes has made it challenging to find attractive opportunities. Fundraising within natural resources is daunting for GPs and mirrors our difficulty in finding investment strategies that meet risk/return hurdles. Infrastructure fundraising has the opposite problem as institutions increasingly look to deploy capital in defensive, yield-oriented strategies like infrastructure.
- As the shift away from commodity-oriented sectors continues, we will look opportunistically for strategies in the space, but we expect infrastructure to occupy a larger share of real asset portfolios going forward.



December 2019

**Semiannual Real Estate
Performance Measurement Review**

Callan

PUBLIC VERSION

Avery Robinson, CAIA
Senior Vice President

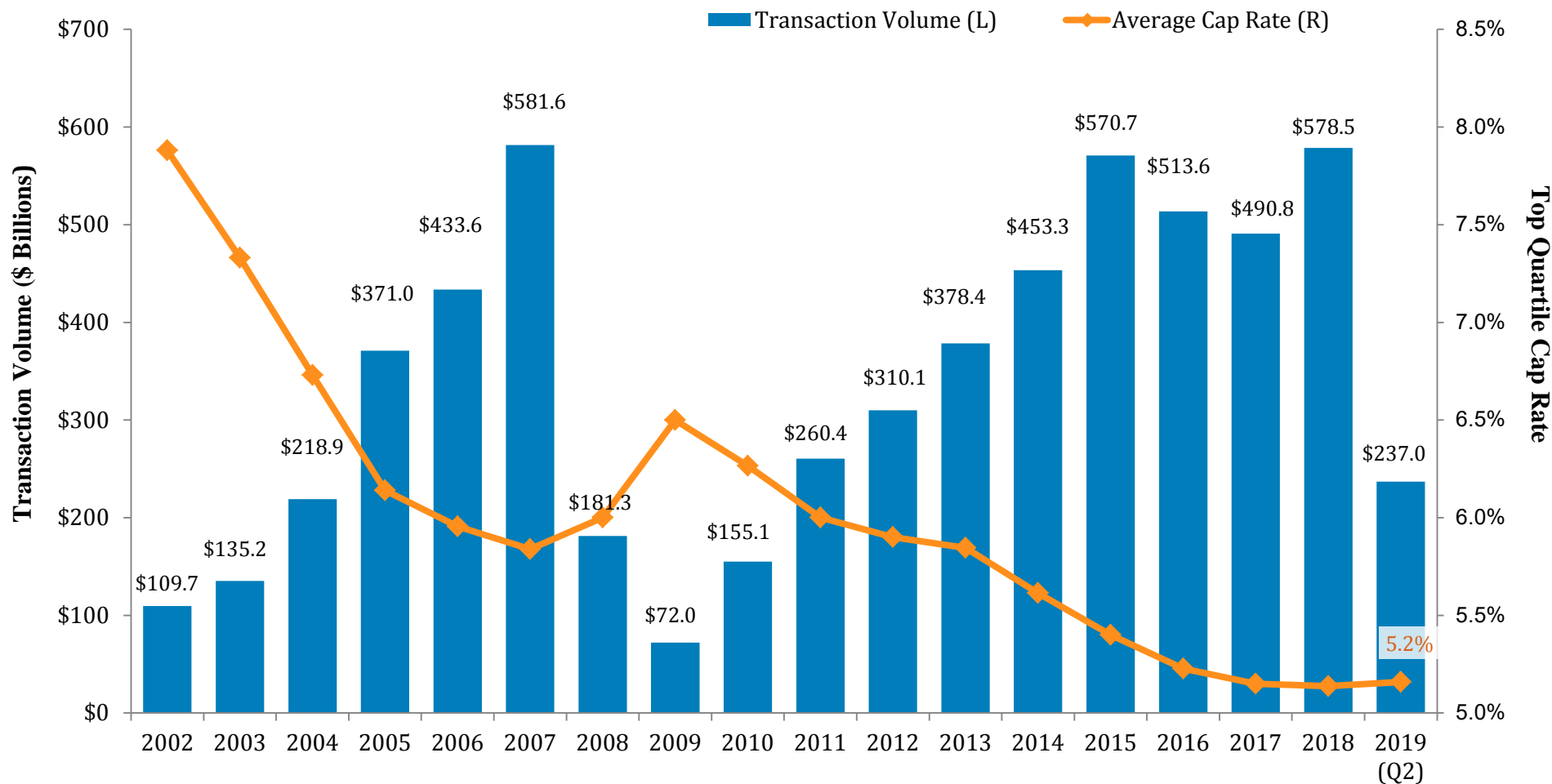
Real Estate Market Overview

- 2018 represented a robust year for global capital flows into real estate. In the first half of 2019, flows remained substantial, however, cross border investment in the US slowed with certain sovereigns, as deals are getting tougher to pencil primarily due to historically low cap rates and the stronger US dollar.
- US Real estate fundamentals are healthy:
 - Within the NPI, the vacancy rate for U.S. property was 5.7% in the second quarter of 2019, its lowest level since 2000.
 - Vacancies were below their 20-year average in every major sector.
 - Net operating income is growing annually and it is expected to be the primary driver of returns going forward as the real estate cycle is in a mature phase with moderating appreciation; however, overall appreciation has not been slowing as quickly as investors predicted, driven primarily by the industrial markets.
 - Not all markets are created equal. Northeast primary markets have generally underperformed the Southeast and certain West Coast markets driven by affordability options in the Southeast and tech driven growth on the West Coast.
 - There is also dispersion within the property sectors as suburban office has outperformed central business district office over the last year. Neighborhood retail has been a relative bright spot in comparison to regional malls and power centers. Garden and low rise apartments lead the strong multifamily sector while high rise has lagged, albeit with stable rents that have just not experienced the rent growth in the suburban markets.
 - Industrial continues to be strong across all subsectors with warehouse, R&D and flex space performing equally well.

2019 Volume Matches 2017 and 2018 With Capitalization Rates at Historic Lows

Transaction volume through the first half of 2019 remains strong

All Property Types Transaction Volume And Top Quartile Cap Rates US 2002-2019 Q2

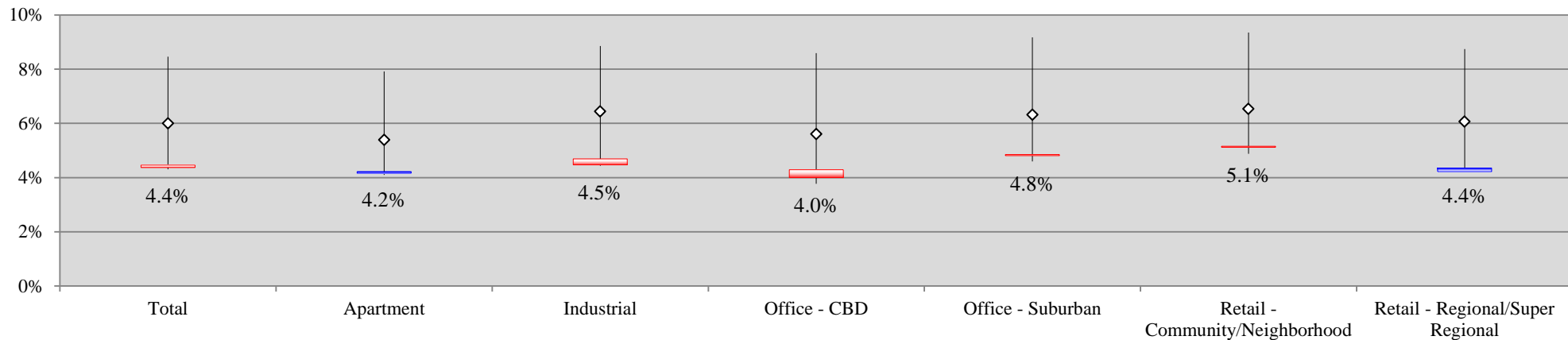


Source: Real Capital Analytics; Heitman Research

Returns Are Expected to Continue to Moderate

September 2019 Survey	Actual 2018	Actual YTD 2019	2019	2020	2021	2019 to 2023
NPI Total Return	6.7%	3.3%	6.5%	5.3%	4.5%	5.5%
Income Return	4.6%	2.2%	4.5%	4.5%	4.6%	4.6%
Capital Appreciation	2.1%	1.1%	2.0%	0.8%	-0.1%	0.9%

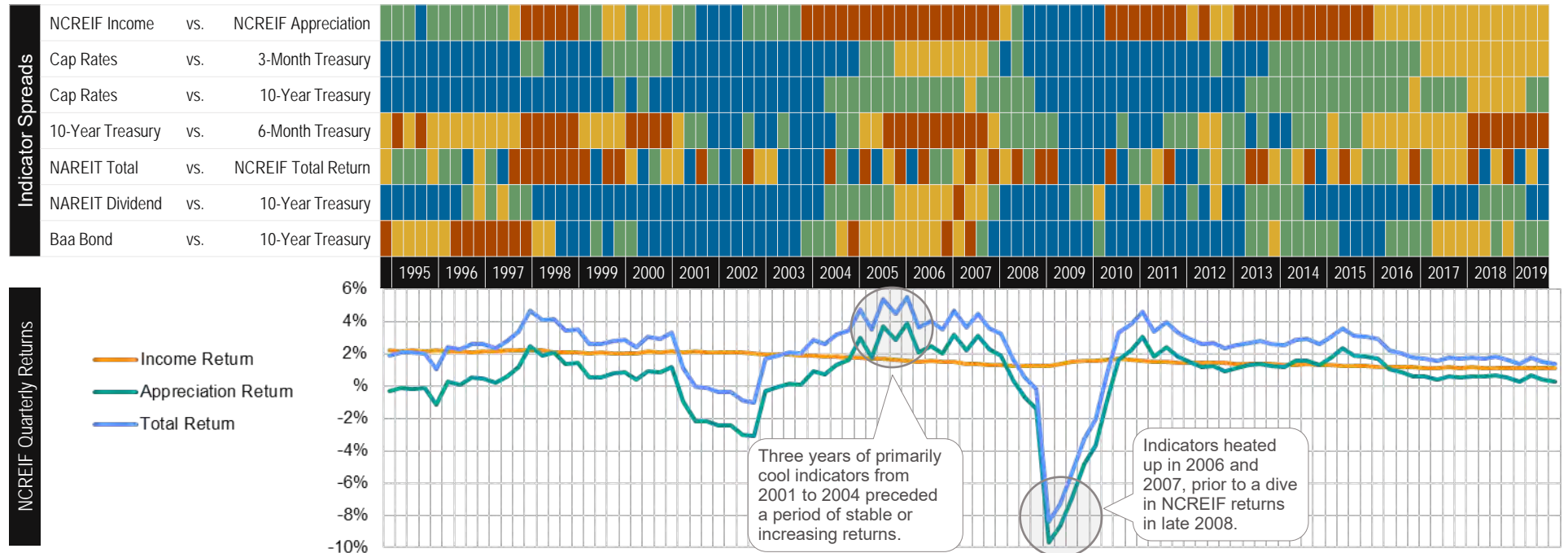
NCREIF Appraisal Cap Rates By Property Type 1999-2019 Q2



Source: PREA, NCREIF, AEW Capital Management. Note: Retail definitions in appendix. Cap rate levels chart shows historic range (hi to low) with the average indicated by the diamond and the current cap rates shown as the numeric value. Red indicates cap rates have decreased over last year. Blue indicates cap rates have increased over the past year. The width of band represents the range in cap rates over the last year.

Real Estate Indicators: Too Hot to Touch or Cool Enough to Handle?

Quartile Results as of September 30, 2019



The seven indicator spreads reveal multiple instances when wide spreads (cool indicators) preceded stable or increasing performance, and narrow spreads (hot indicators) were more prevalent before declining market periods.

Alameda County Employees' Retirement Association Performance Measurement Report Summary

Portfolio Measurement Presentation

This is the Performance Measurement Report presentation for the Alameda County Employees' Retirement Association ("ACERA") Real Estate Portfolio ("Portfolio") Quarter ending September 30, 2019 ("Quarter").

Funding Status as of September 30, 2019

	(\$) Millions	(%)
ACERA Plan Assets	8,327.781	100.00%
Real Estate Target ⁽¹⁾	666.222	8.00%
Plan's Real Estate Market Value	583.195	7.00%
Net Unfunded Commitments	76.041	0.91%
RE Market Value & Unfunded Commitments	659.236	7.92%
Remaining Allocation	83.028	1.00%

Portfolio Composition

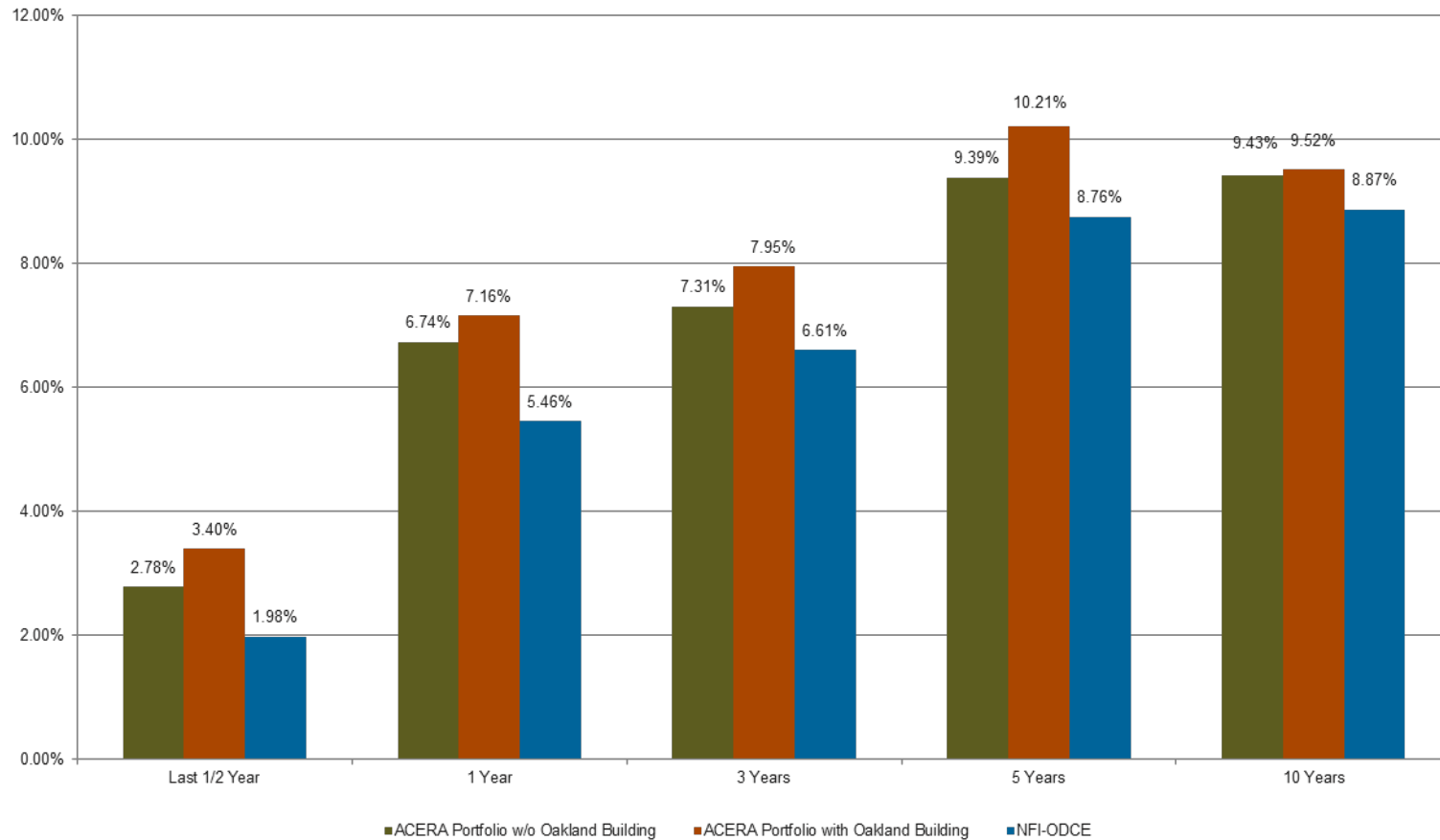
	Target	Funded	Funded & Committed
Core	70.00%	68.87%	63.84%
Non-Core	30.00%	31.12%	36.16%

1. The Real Estate Target increase from 6% to 8% was adopted in August 2015.
2. In July 2018 the Board adopted the recommendation to invest \$35 million in Angelo Gordon Realty Value Fund X. The initial contribution into the fund occurred on 6/10/2019.

Portfolio Net Returns

For Period Ended June 30, 2019

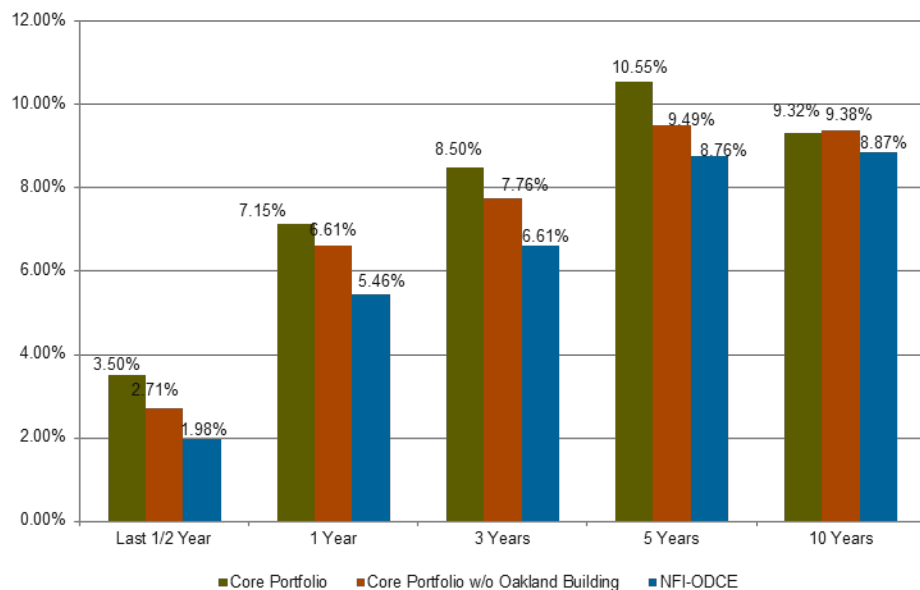
Total Net Real Estate Portfolio Returns



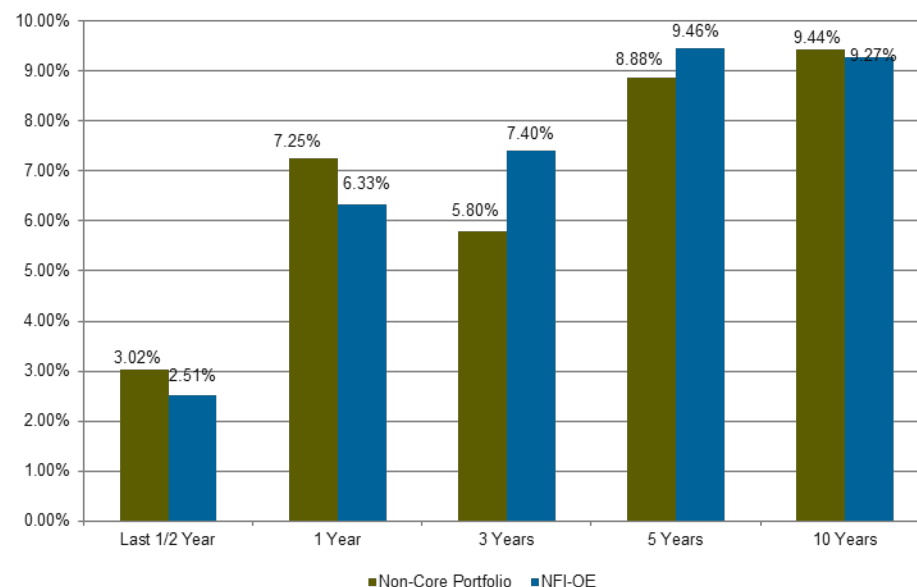
Portfolio Returns by Style

For Period Ended June 30, 2019

Net Core Returns



Net Non-Core Returns



Net Portfolio w/o Oakland Building	Last ½ Year	1 Year	3 Years	5 Years	10 Years
Core Portfolio w/o Oakland Building	2.71%	6.61%	7.76%	9.49%	9.38%
Non-Core Portfolio	3.02%	7.25%	5.80%	8.88%	9.44%
Total Portfolio w/o Oakland Building	2.78%	6.74%	7.31%	9.39%	9.43%

Net Total Portfolio	Last ½ Year	1 Year	3 Years	5 Years	10 Years
Core Portfolio	3.50%	7.15%	8.50%	10.55%	9.32%
Non-Core Portfolio	3.02%	7.25%	5.80%	8.88%	9.44%
Total Portfolio	3.40%	7.16%	7.95%	10.21%	9.52%

Performance Drivers and Detractors by Style

Core Portfolio (Excluding Oakland Building)

- The ACERA Core Portfolio has outperformed the benchmark during every period over the last ten years and it continued that trend this quarter beating the benchmark by 14 bps.
- The Lion Industrial Trust once again was a performance leader during the first half of the year.
- The Oakland building also continued its strong performance recording a 8.20% return during the first half of the year.
- The UBS Trumbull Property Fund was a material detractor during the quarter as a result of property valuation write-downs.

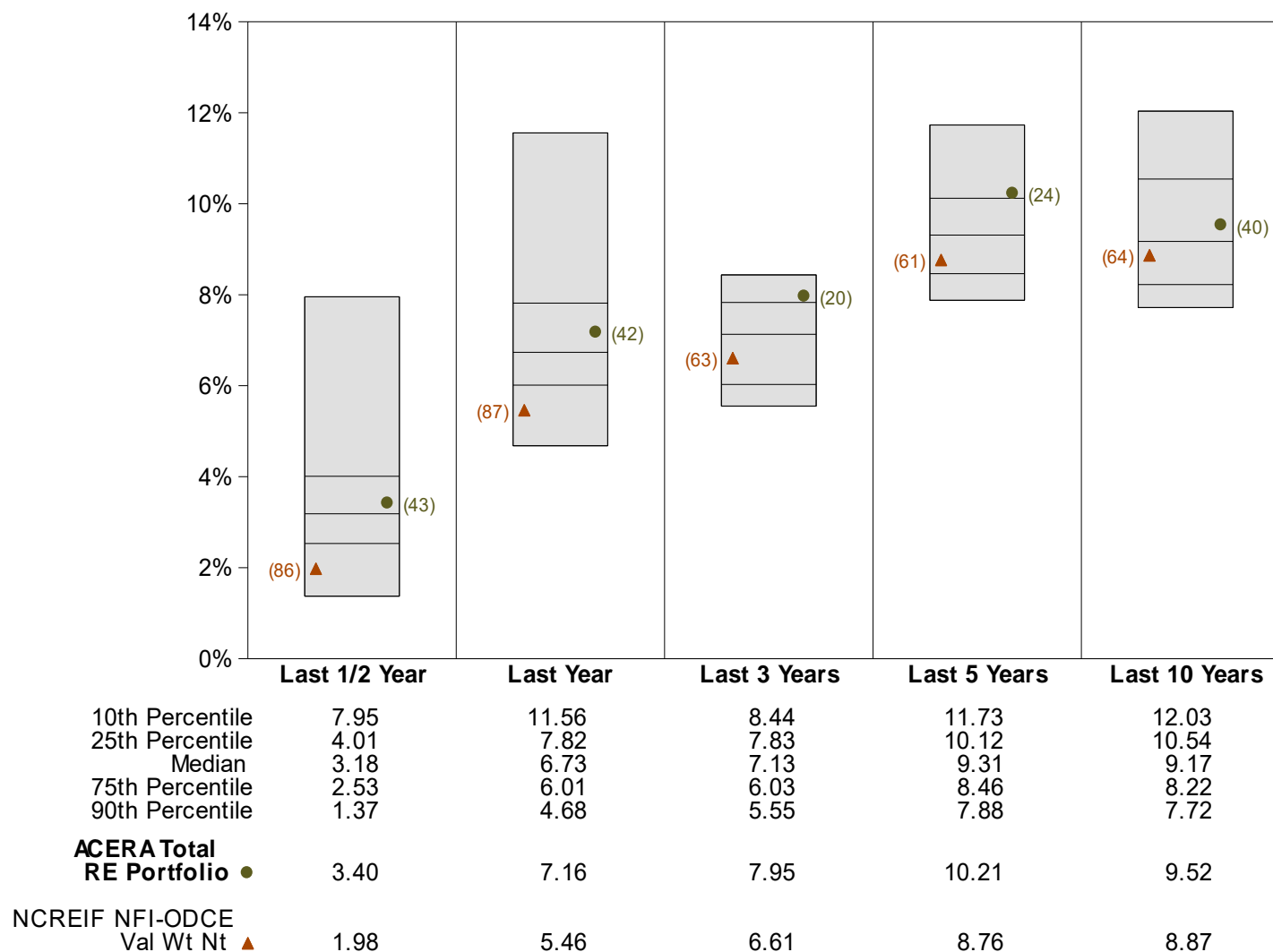
Non-Core Portfolio

- The Non-Core portfolio's outperformance drivers were wide spread with AEW Partners VIII and Heitman Value Partners IV leading the way.
- The CIM VI account was the worst performer for the Non-Core Portfolio.

Performance vs. Peer Group

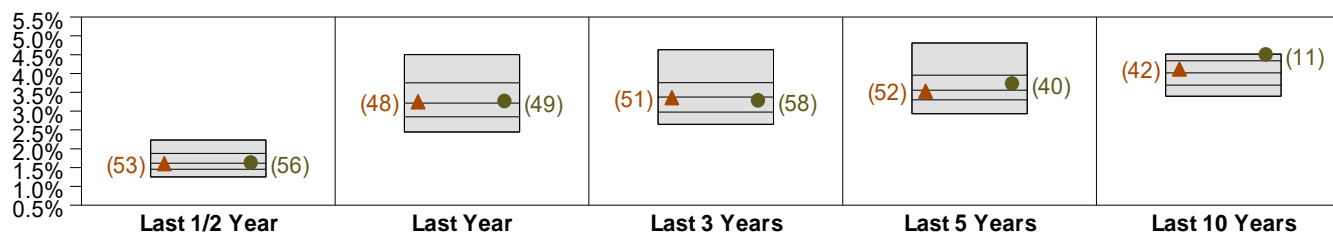
For Period Ended June 30, 2019

Performance vs Callan Open End Core Cmmingled Real Est



Performance vs. Peer Group

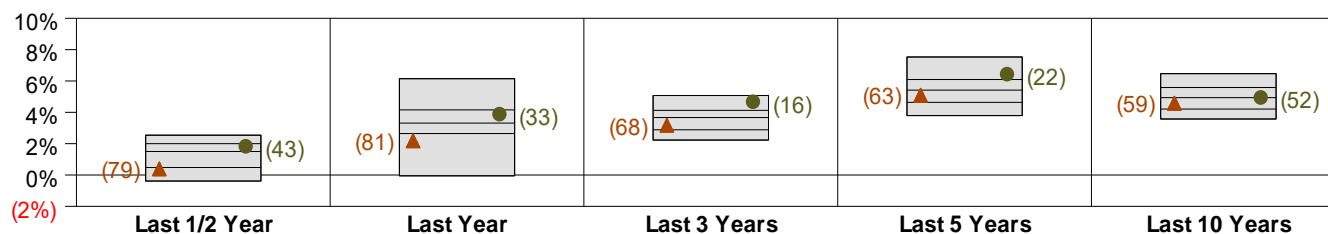
Income Rankings vs Callan OE Core Cmngld RE Periods ended June 30, 2019



10th Percentile	2.23	4.50	4.63	4.81	4.51
25th Percentile	1.88	3.75	3.76	3.95	4.34
Median	1.62	3.21	3.38	3.56	4.02
75th Percentile	1.46	2.85	2.97	3.30	3.69
90th Percentile	1.25	2.45	2.65	2.93	3.39

ACERA Total RE Portfolio	1.59	3.23	3.25	3.69	4.46
NCREIF NFI-ODCE Val Wt Nt	1.61	3.25	3.36	3.53	4.12

Appreciation Rankings vs Callan OE Core Cmngld RE Periods ended June 30, 2019



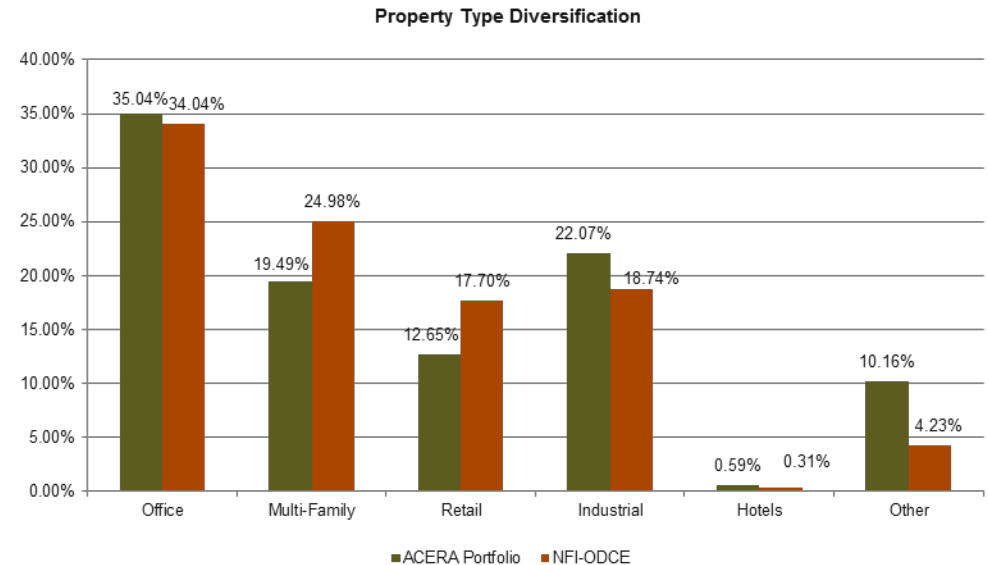
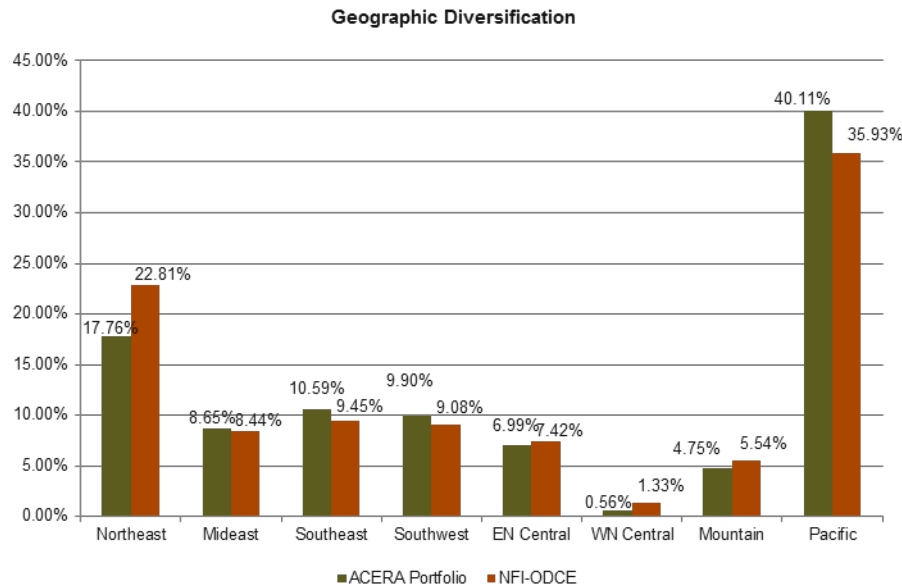
10th Percentile	2.55	6.15	5.07	7.53	6.47
25th Percentile	2.00	4.16	4.12	6.10	5.58
Median	1.50	3.32	3.67	5.42	4.94
75th Percentile	0.48	2.65	2.89	4.64	4.21
90th Percentile	(0.38)	(0.05)	2.23	3.79	3.57

ACERA Total RE Portfolio	1.74	3.78	4.58	6.34	4.85
NCREIF NFI-ODCE Val Wt Nt	0.40	2.19	3.18	5.10	4.59

Diversification & Debt

Diversification – Total Portfolio (excluding Oakland Building)

- The ACERA Portfolio is well diversified by both property type and region.



Debt Compliance

- The ACERA Strategic Plan limits leverage to 40.0% at the Portfolio level. As of June 30, 2019, the loan-to-value (“LTV”) ratio of the Portfolio was 24.66%.

ACERA Real Estate Portfolio Snapshot – 2Q2019

Portfolio Composition (\$)								
Total Plan Assets	Allocation		Market Value		Unfunded Commitments		Remaining Allocation	
8,131,848,009	650,547,841	8.00%	588,248,080	7.23%	74,837,138	0.92%	62,299,761	0.77%

Performance Summary	Quarter (%)		1 Year		3 Years		5 Years		10 Years	
	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET
ACERA	1.94%	1.71%	8.19%	7.16%	9.10%	7.95%	11.32%	10.21%	10.59%	9.52%
NFI-ODCE	1.00%	0.77%	6.41%	5.46%	7.57%	6.61%	9.76%	8.76%	9.88%	8.87%

Funding Status (\$)	Investment Vintage Year	Commitment Amount	Funded Amount	Unfunded Amount	Capital Returned	Market Value	Market Value (%)	Market Value + Unfunded Commitments (%)	Net IRR	Equity Multiple
Core Portfolio										
ACERA Oakland Building Portfolio	2002	31,700,000	31,700,000	\$0	42,695,934	73,547,029	12.50%	11.09%	9.57%	2.31x
Core Portfolio	1986	336,700,000	336,700,000	\$0	128,615,180	471,186,268	80.11%	71.06%		1.49x
Non-Core Portfolio										
Non-Core Portfolio	1987	200,936,048	126,098,910	74,837,138	38,823,887	117,013,140	19.89%	28.94%		1.34x
Total Current Portfolio	1986	537,636,048	462,798,910	74,837,138	167,439,067	588,199,408	100.00%	100.00%		1.18x
ALAMEDA County Employees' Retirement Association										

Definitions

Performance

Capitalization rate: Commonly known as cap rate, is a rate that helps in evaluating a real estate investment. $\text{Cap rate} = \text{Net operating income} / \text{Current market value (Sale price) of the asset}$.

Net operating income: Commonly known as NOI, is the annual income generated by an income-producing property, taking into account all income collected from operations, and deducting all expenses incurred from operations.

Real Estate Appraisal: The act of estimating the value of a property. A real estate appraisal may take into account the quality of the property, values of surrounding properties, and market conditions in the area.

Income Return ("INC"): Net operating income net of debt service before deduction of capital items (e.g., roof replacement, renovations, etc.)

Appreciation Return ("APP"): Increase or decrease in an investment's value based on internal or third party appraisal, recognition of capital expenditures which did not add value, uncollectible accrued income, or realized gain or loss from sales.

Total Gross Return ("TGRS"): The sum of the income return and appreciation return before adjusting for fees paid to and/or accrued by the manager.

Total Net Return ("TNET"): Total gross return less Advisor fees reported. All fees are requested (asset management, accrued incentives, paid incentives). No fee data is verified. May not include any fees paid directly by the investor as opposed to those paid from cash flows.

Inception Returns: The total net return for an investment or portfolio over the period of time the client has had funds invested. Total portfolio Inception Returns may include returns from investments no longer held in the current portfolio.

Net IRR: IRR after advisory fees, incentive, and promote. This includes actual cash flows and a reversion representing the LP Net Assets at market value as of the period end reporting date.

Equity Multiple: The ratio of Total Value to Paid-in-Capital (TVPIC). It represents the Total Return of the investment to the original investment not taking into consideration the time invested. Total Value is computed by adding the Residual Value and Distributions. It is calculated net of all investment advisory and incentive fees and promote.

Definitions

Style Groups

The Style Groups consist of returns from commingled funds with similar risk/return investment strategies. Investor portfolios/investments are compared to comparable style groupings.

Core: Direct investments in operating, fully leased, office, retail, industrial, or multifamily properties using little or no leverage (normally less than 30%).

Value-Added: Core returning investments that take on moderate additional risk from one or more of the following sources: leasing, re-development, exposure to non-traditional property types, the use of leverage.

Opportunistic: Investments that take on additional risk in order to achieve a higher return. Typical sources of risks are: development, land investing, operating company investing, international exposure, high leverage, distressed properties.

Definitions

Indices

Stylized Index: Weights the various style group participants so as to be comparable to the investor's portfolio holdings for each period.

Open-End Diversified Core Equity Index ("ODCE"): A core index that includes only open-end diversified core strategy funds with at least 95% of their investments in U.S. markets. The ODCE is the first of the NCREIF Fund Database products, created in May 2005, and is an index of investment returns reporting on both a historical and current basis (24 active vehicles). The ODCE Index is capitalization-weighted and is reported gross and net of fees. Measurement is time-weighted and includes leverage.

NCREIF Fund Index Open-End Index ("OE"): NFI-OE is an aggregate of open-end, commingled equity real estate funds with diverse investment strategies. Funds comprising NFI-OE have varied concentrations of sector and region, core and non-core, leverage, and life cycle.

NAREIT Equity Index: This is an index of Equity Real Estate Investment Trust returns reflecting the stock value changes of REIT issues as determined through public market transactions.

Definitions

Cash Flow Statements

Beginning Market Value: Value of real estate, cash, and other holdings from prior period end.

Contributions: Cash funded to the investment for acquisition and capital items (i.e., initial investment cost or significant capital improvements).

Distributions: Actual cash returned from the investment, representing distributions of income from operations.

Withdrawals: Cash returned from the investment, representing returns of capital or net sales proceeds.

Ending Market Value: The value of an investment as determined by actual sales dollars invested and withdrawn plus the effects of appreciation and reinvestment; market value is equal to the ending cumulative balance of the cash flow statement (NAV).

Unfunded Commitments: Capital allocated to managers which has not yet been called for investment. Amounts are as reported by managers.

Remaining Allocation: The difference between the ending market value + the unfunded commitments and the target allocation. This figure represents dollars available for allocation.

NCREIF Region Map

GEOGRAPHIC REGIONS and DIVISIONS

