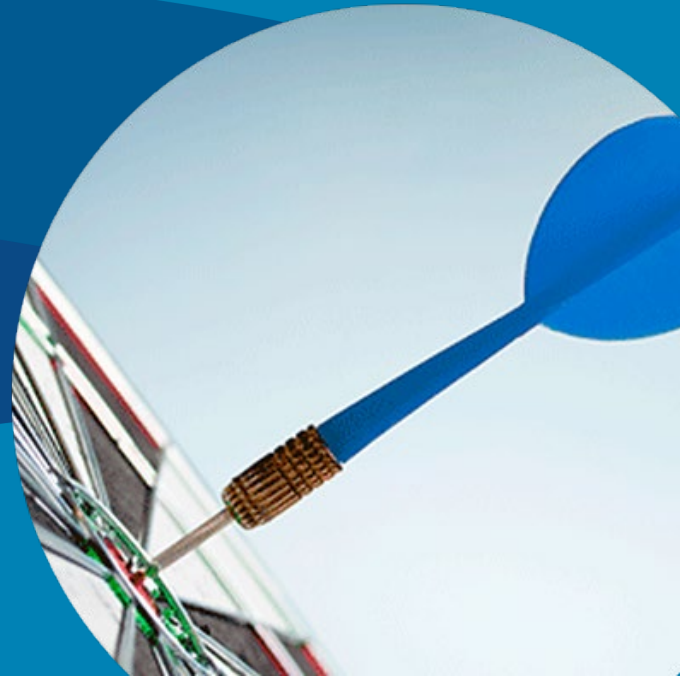




# City of Dallas Employees' Retirement Fund

December 31, 2020

Final Valuation Results



# Actuarial Valuation

---

- Prepared as of December 31, 2020, using member data, financial data, benefit and contribution provisions, actuarial assumptions and methods
- Purposes:
  - Measure the actuarial liabilities of the ERF
  - Determine actuarial required contribution rate
    - Current Total Obligation Rate
    - Current Adjusted Total Obligation Rate
  - Provide other information for reporting
    - GASB #67 & #68, Comprehensive Annual Financial Report
  - Explain changes in actuarial condition of the Fund

# Key Issues and Changes

---

- ERF's investment return was below its investment target of 7.25% on both a market value and actuarial value basis in 2020
  - Return on market value was 6.18%
    - Dollar-weighted return
    - Versus preliminary return of 5.16%
  - Shortfall in investment income of \$38 million
    - \$8 million recognized in this valuation and the remainder deferred
- Significant liability experience gains in 2020
  - Salary increases, cost of living adjustment, retiree mortality

# Key Issues and Changes

---

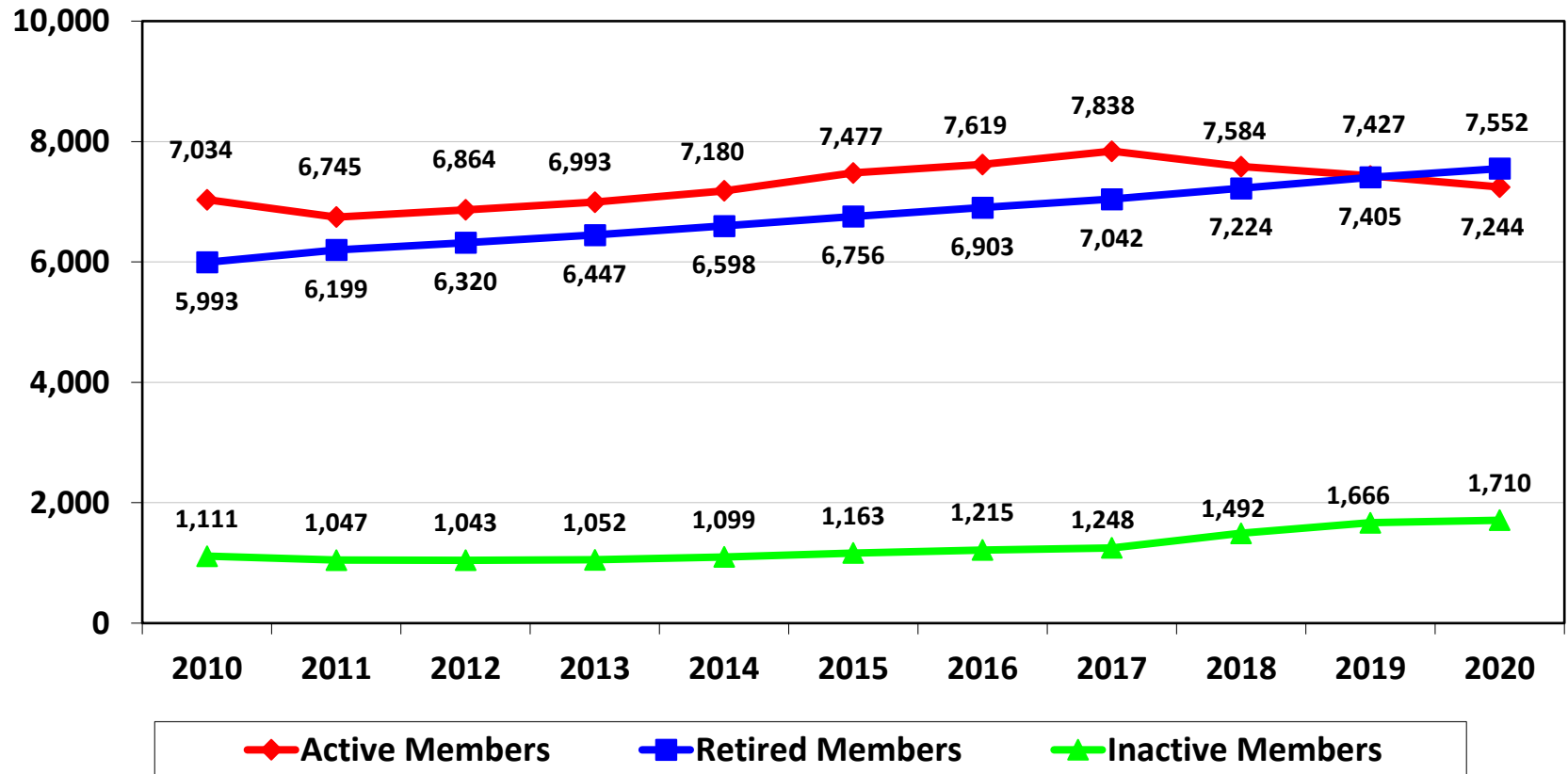
- Drop in active membership resulted in payroll decreasing instead of growing as expected
  - 1.2% decrease versus the assumption of a 2.50% increase
- Current Total Obligation Rate exceeds 36% of pay cap
  - CATOR is 36.00%
  - City contribution rate is 22.68%
  - Member rate is 13.32%
- The new Tier became effective January 1, 2017
  - Over 2,400 employees in new Tier at December 31, 2020
    - New Tier is approximately 33% of the active employees
  - NC% decreased from 20.50% last year to 20.11% this year

# Membership

---

- The number of active members decreased from 7,427 to 7,244, a 2.5% decrease
- Payroll for active members decreased from \$434 million to \$429 million, a 1.2% decrease
- The number of members in payment status increased by a net 147, from 7,405 to 7,552, a 2.0% increase
- There are 1.0 active members for each retiree compared to 1.2 in 2010

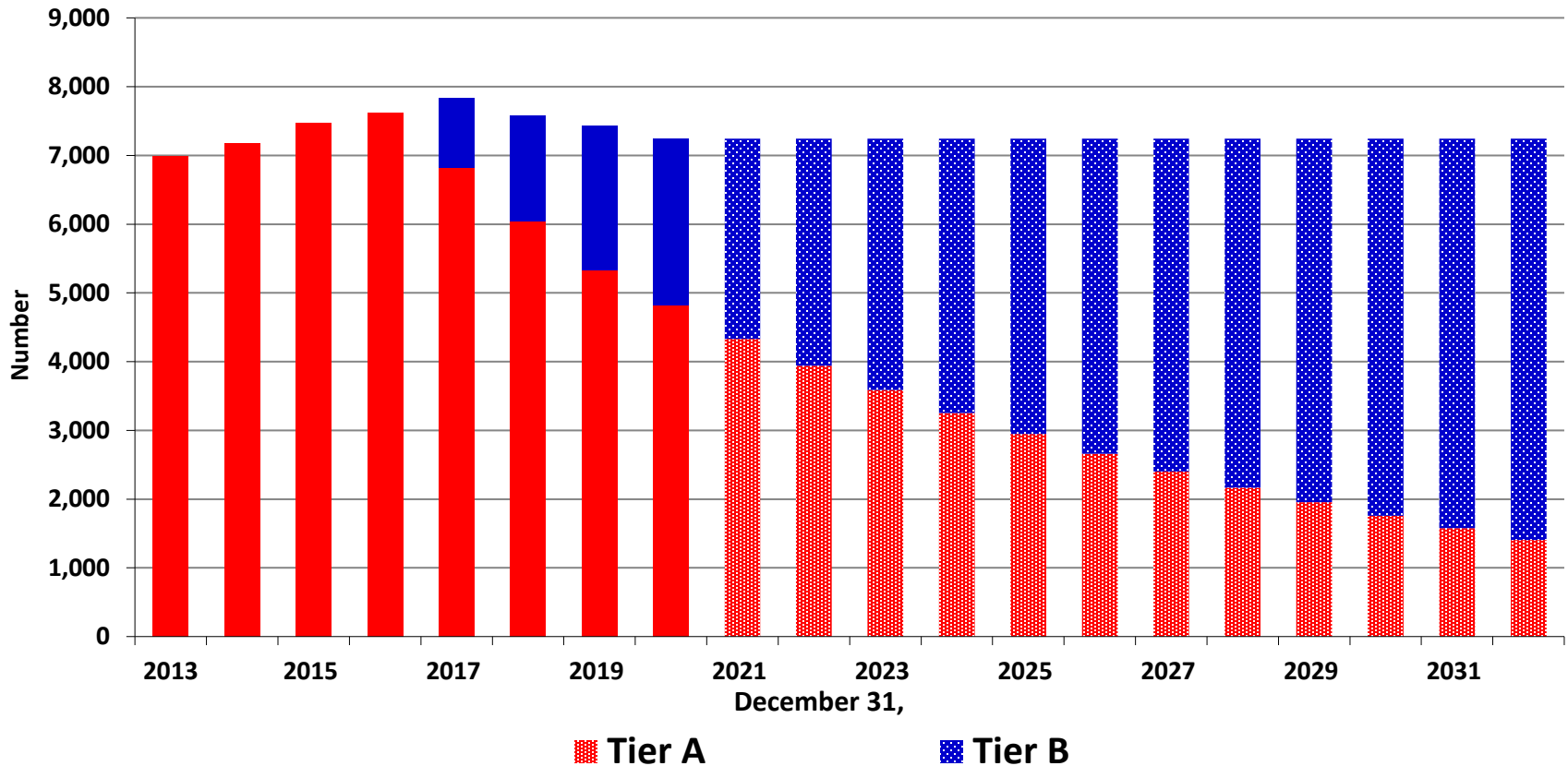
# Active Members and Retired Members



Note: Active membership decreased 2.5% versus last year

# Projected Active Membership

## Projected Number of Tier A and Tier B Employees



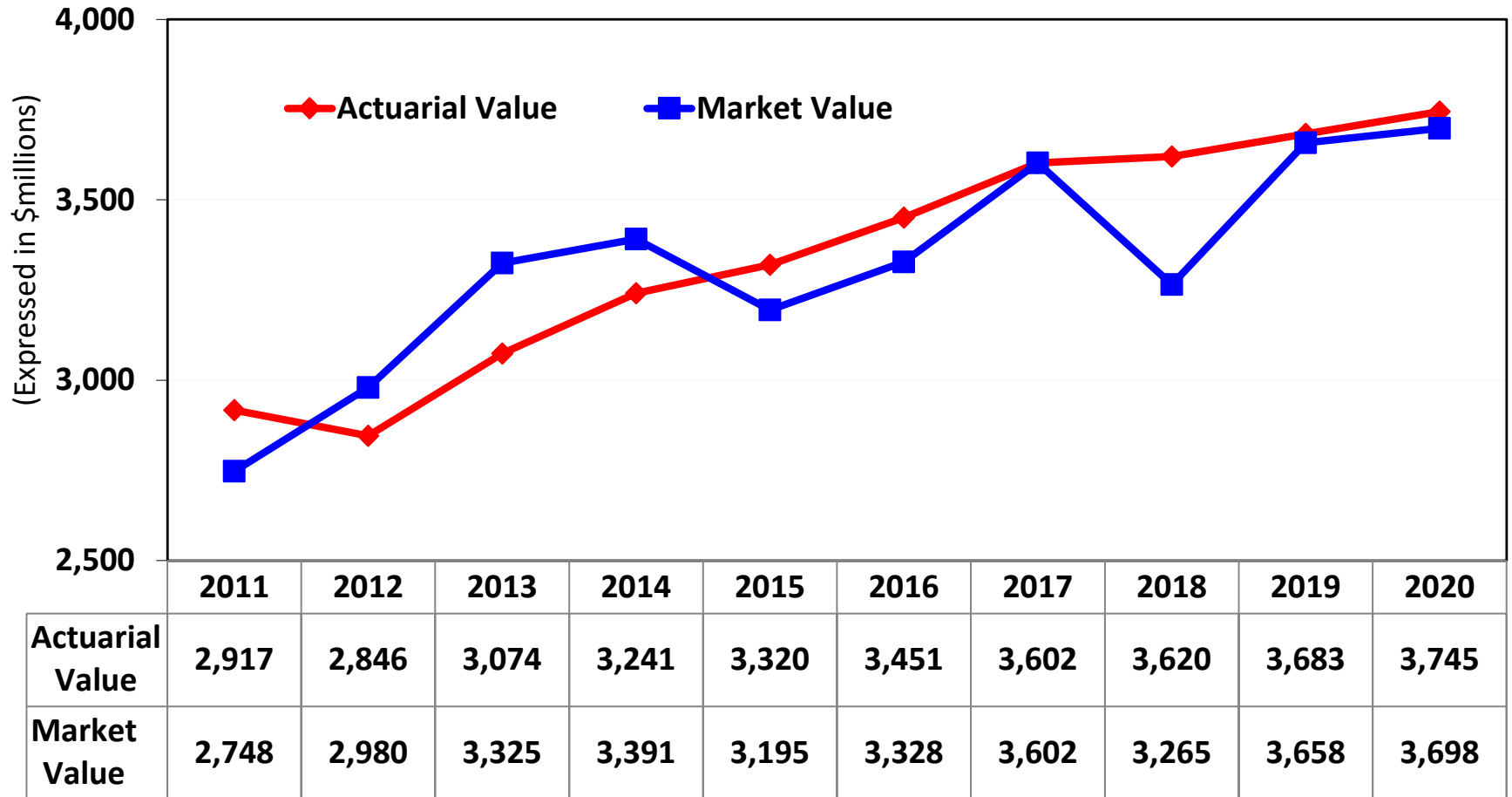
# Assets

---

- Fair market value (unaudited) increased from \$3.66 billion to \$3.70 billion
- Return on market value of assets was approximately 6.18% in 2020
- Actuarial value is \$3.75 billion, compared to \$3.68 billion last year
- Actuarial rate of return was 6.76% in 2020
  - Less than 7.25% assumed rate
- Actuarial value is 101.3% of fair market value
- Net deferred investment shortfall of \$47 million still to be recognized in actuarial value of assets



# Historical Asset Values



# Actuarial Results

---

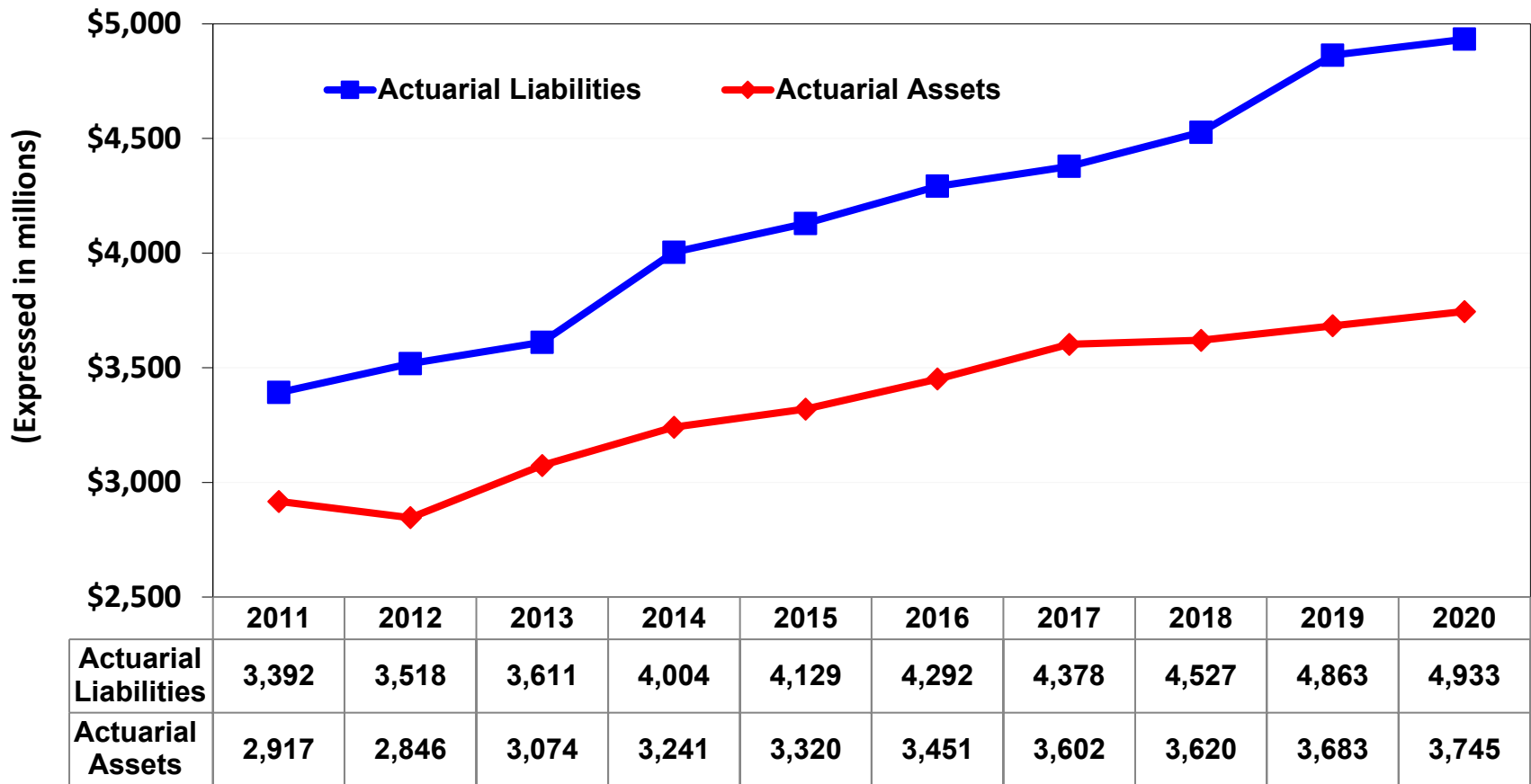
- Actuarial Accrued Liability (AAL) of benefits is now \$4.93 billion
- Unfunded Actuarial Accrued Liability (UAAL) increased from \$1.18 billion to \$1.19 billion
  - Expected to increase to \$1.21 million
  - Reflects \$25 million loss on actuarial value of assets and \$70 million gain on liabilities
  - UAAL increased \$34 million due to difference between calculated contribution rate and actual contribution rate

# Actuarial Results

---

- Funded ratio (actuarial assets divided by actuarial accrued liability) increased from 75.7% in 2019 to 75.9% in 2020
- Funded ratio using market value is 75.0%
  - Was 75.2% last year
- Total 30-year contribution rate is 34.87%
  - Does not include POB debt service payments
  - Based on open group projection
  - 35.38 % last year

# Liabilities vs. Assets



# Reconciliation of UAAL

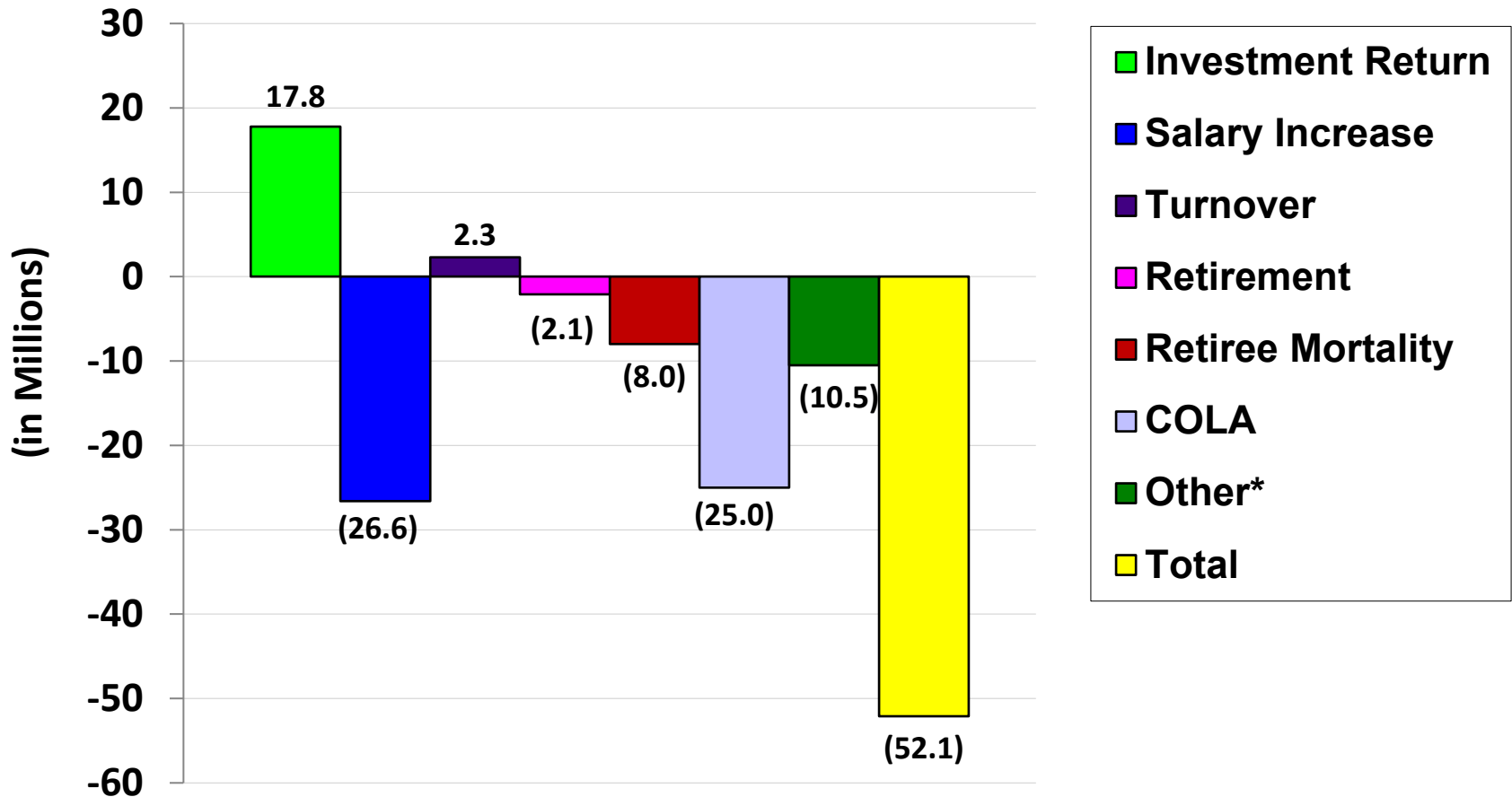
---

▪ UAAL 12/31/19		\$1,180.4
▪ Expected Changes		
• Amortization Payment for 2020	(58.5)	
• Interest Adjustments	<u>83.5</u>	
		25.0
▪ Difference between expected and actual contributions		34.2
▪ Actuarial Experience Gain		<u>(52.1)</u>
▪ UAAL 12/31/20		\$1,187.5



\$ in Millions

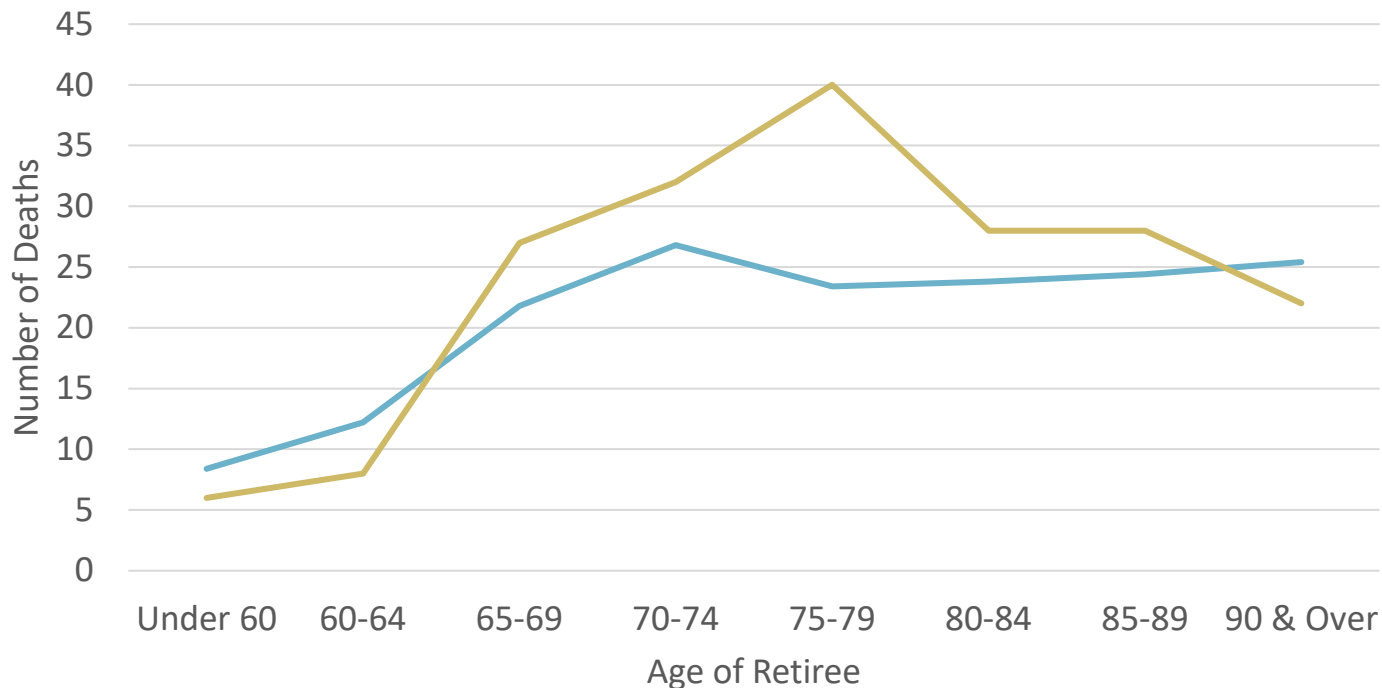
# 2020 Actuarial (Gains) and Losses



\*Includes disability, active mortality, and data changes

# Mortality Experience

- Approximately 15% higher mortality in 2020 than in the past few years (due to COVID)



- UAAL \$8 million lower than expected as a result
- Anticipate this trend reversing over the next few years

— Average for 2015-2019 — 2020

# Actuarial Required Contribution Rate

---

- We use an Open Group projection to determine the Actuarially Required Contribution Rate (ARC)
  - Reflects declining average Normal Cost % over time due to new tier of benefits
  - Rate is determined as level percentage of pay so amortization rate is increasing over time
  - Based on 30-year funding period



# Actuarial Required Contribution Rate

---

- ARC as of December 31, 2020 is 34.87%
  - Decrease from 35.38% in prior year
  - Compares to actual rate expected to be contributed in fiscal year 2022 of 27.08%
    - Total rate of 36.00% of pay less POB Credit of 8.92%
  - Decrease is due to liability gains offsetting impact of investment losses and lower than expected payroll growth

# Fiscal Year Beginning October 1<sup>st</sup>

	<u>2020</u>	<u>2021</u>
1. Prior Adjusted Total Obligation Rate	36.00%	36.00%
2. Actuarially Required Contribution Rate	35.38%	34.87%
3. Debt Service		
a) Scheduled Debt Service Payment	\$ 37,987,077	\$ 39,200,283
b) Projected Payroll	\$444,737,003	\$439,544,160
c) Pension Obligation Bond Credit (a/b)	8.54%	8.92%
4. Current Total Obligation Rate (2+3c)	43.92%	43.79%
5. Current Adjusted Total Obligation Rate	36.00%	36.00%
6. Allocation of Contribution Rates for Fiscal Year Beginning 1 <sup>st</sup>		
a) Employee (5 x .37)	13.32%	13.32%
b) City (5 x .63)	22.68%	22.68%
7. City Contribution to Fund (6.b. – 3.c)	14.14%	13.76%

*The formula for contributions are based on Dallas City Code 40A originally established with City ordinance 25695*



# Determination of Current Adjusted Total Obligation Rate

---

1. Prior Adjusted Total Obligation Rate (PATOR) 36.00%
2. Current Total Obligation Rate (CTOR) 43.79%
3. If  $(-3.00\% < \text{PATOR} - \text{CTOR} < 3.00\%)$  Then  
Current Adjusted Total Obligation Rate (CATOR) = PATOR (36.00%)  
Else Go to Step 4
4. CATOR = Lowest of (a), (b), & (c) where:
  - a.  $\text{PATOR} + [ 0.5 * (\text{CTOR} - \text{PATOR}) ] = 39.90\%$
  - b.  $110\% * \text{PATOR} = 39.60\%$
  - c. 36.00% Maximum limit = 36.00%
  - d. Lowest of (a), (b), and (c) is: = 36.00%

# Valuation Summary

---

- The Actuarially Required Contribution to the Fund decreased from 35.38% to 34.87%
- The total contribution rate including the debt service decreased from 43.92% to 43.79%
- \$47 million in deferred investment losses still to be recognized or offset
- Funding Period will be reported as 51 years
  - Assumes contribution rate will remain at 36% of pay until fully funded

# Valuation Summary

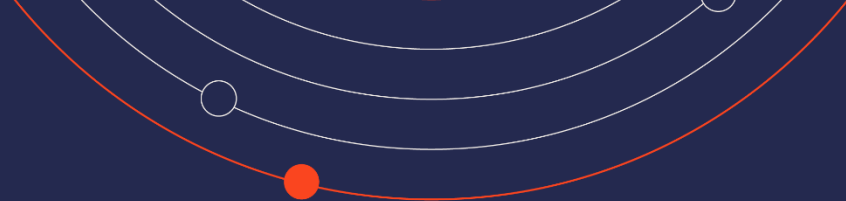
---

- Calculated contribution rate is projected to remain relatively level until POBs are paid off
  - Assuming all assumptions are met including 7.25% return on AVA
  - Impact of shortfall in contributions because of 36.00% maximum rate is being somewhat offset by
    - 30-year rolling amortization period
    - Decrease in average normal cost due to new tier of benefits

# GASB Preview

---

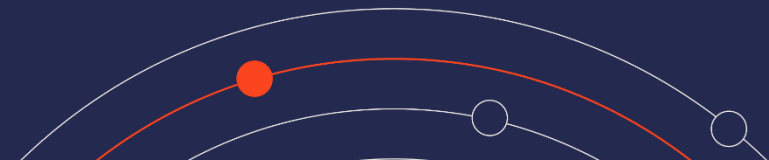
- GASB 67/68
  - Fund does not pass the Crossover Test therefore blended Single Discount Rate (SDR) is used
  - SDR of approximately 5.15%
  - Versus 5.93% last year
- NPL increased from \$2.0 billion last year to an estimated \$2.6 billion as of 12-31-2020
  - Volatile number
    - If market value of assets had been \$25 million larger then ERF would have passed the Crossover Test (NPL of \$1.2 billion)
    - Test fails at approximately the same place as last year, but rate of long-term municipal bonds decreased from 2.75% to 2.00% resulting in lower blended discount rate



# Numbers in Context

1<sup>st</sup> Quarter, 2021

Wilshire



# Market Commentary

## U.S. Equity

The U.S. stock market, represented by the Wilshire 5000 Total Market Index<sup>SM</sup>, was up 6.5% for the first quarter of 2021. All eleven sectors were in positive territory with Energy (+31.7%) and Financials (+16.7%) representing the best performing sectors. There was meaningful return dispersion between size and styles as the large-cap value index outperformed growth by 7.8% and small-cap outperformed large-cap by 7.7%.

Inflation indexes have been on the rise during the past few months, with growth rates meaningfully above 2%. A jump in energy prices accounted for more than two-thirds of the increase in the Producer Price Index (PPI) in February, while both gasoline and food prices weigh on consumers. Investors are expecting at least some continued inflation as the 10-year breakeven inflation rate equaled 2.38% at quarter-end, the highest level in more than five years.

## Non-U.S. Equity

Economic indicators out of the U.K. have been encouraging recently as Prime Minister Boris Johnson announced a “roadmap” for reopening the economy from the U.K.’s third lockdown. Conditions in Germany are more concerning as AstraZeneca’s COVID-19 vaccine has been suspended due to concerns about serious complications.

## Fixed Income

The U.S. Treasury yield curve was up significantly across most maturities during the first quarter, with the long end approaching pre-COVID levels. The 10-year Treasury yield ended the quarter at 1.74%, up 82 basis points from December. The Federal Open Market Committee met twice during the quarter with no change to their overnight rate. The Committee’s “dot plot” indicated that a few members are currently supporting a rate hike for next year, although the median forecast remains unchanged at zero increases through 2023.

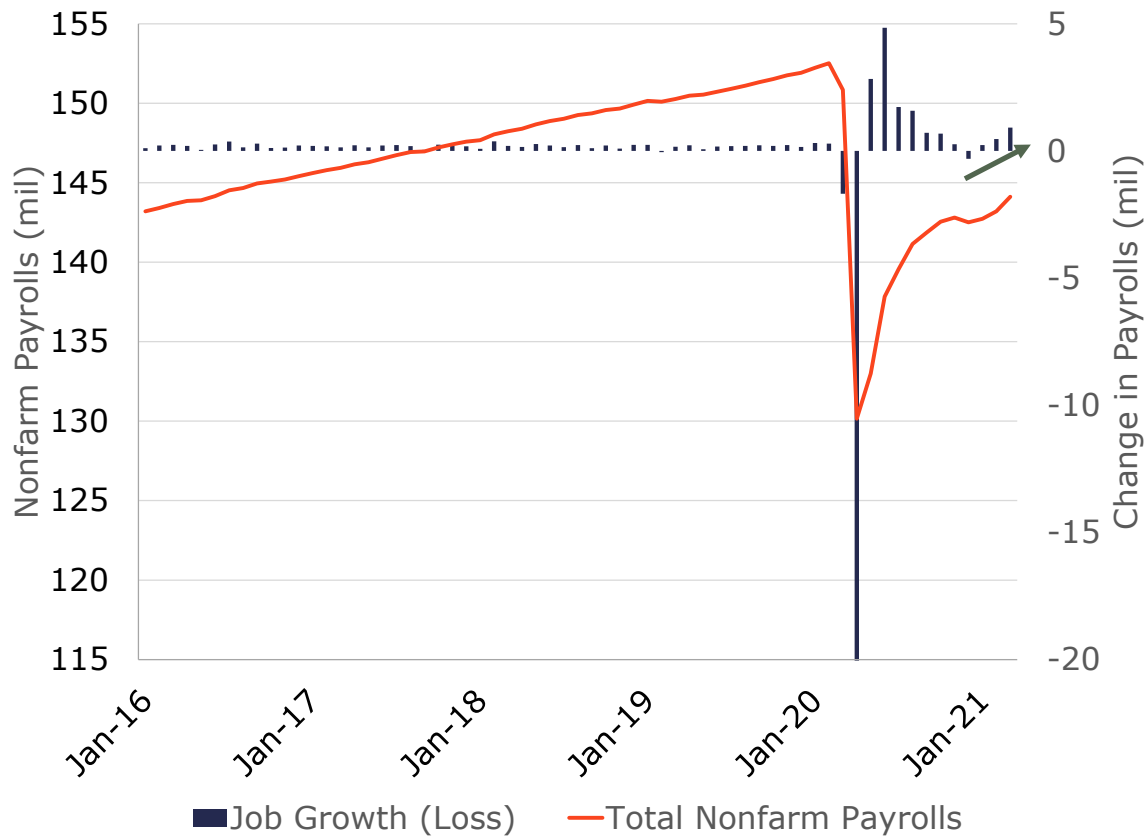


# March 2021 Asset Class Assumptions

	Equity						Fixed Income					Real Assets						
	U.S. STOCK	DEV EX-U.S. STOCK	EMG. MRKT. STOCK	GLOBAL EX-U.S. STOCK	GLOBAL STOCK	PRIVATE EQUITY	CASH	CORE BOND	LT CORE BOND	U.S. TIPS	HIGH YIELD	NON-U.S. BOND (HDG)	U.S. REAL ESTATE SECS	GLOBAL REAL ESTATE SECS	PRIVATE REAL ESTATE	CMDTY	REAL ASSETS	U.S. CPI
Compound Return (%)	4.75	5.75	5.75	6.00	5.40	7.15	1.25	2.05	2.60	1.70	3.90	0.70	5.15	5.30	6.00	3.70	5.80	2.45
Arithmetic Return (%)	6.10	7.25	8.75	7.65	6.75	10.55	1.25	2.15	3.00	1.90	4.40	0.80	6.50	6.45	6.90	4.75	6.30	2.45
Expected Risk (%)	17.00	18.00	26.00	19.15	17.15	28.00	0.75	4.30	8.85	6.00	10.00	4.30	17.00	15.85	14.00	15.00	10.15	1.75
Cash Yield (%)	1.50	2.25	1.75	2.10	1.75	0.00	1.25	3.35	3.80	2.65	7.95	2.05	3.30	3.30	2.25	1.25	2.10	0.00
Growth Expoure	8.00	8.00	8.00	8.00	8.00	13.50	0.00	-0.80	-2.10	-3.00	4.00	-1.00	6.00	6.00	3.50	0.00	1.80	0.00
Inflation Expoure	-3.00	0.00	5.00	1.55	-1.10	-3.80	0.00	-2.45	-6.55	2.50	-1.00	-3.00	1.00	1.95	1.00	12.00	4.90	1.00
<b>Correlations</b>																		
US Stock	1.00																	
Dev ex-US Stock (USD)	0.81	1.00																
Emerging Mkt Stock	0.74	0.74	1.00															
Global ex-US Stock	0.83	0.96	0.87	1.00														
Global Stock	0.95	0.92	0.83	0.94	1.00													
Private Equity	0.74	0.64	0.62	0.67	0.74	1.00												
Cash Equivalents	-0.05	-0.09	-0.05	-0.08	-0.07	0.00	1.00											
Core Bond	0.28	0.13	0.00	0.09	0.20	0.31	0.19	1.00										
LT Core Bond	0.31	0.16	0.01	0.12	0.23	0.32	0.11	0.92	1.00									
TIPS	-0.05	0.00	0.15	0.05	0.00	-0.03	0.20	0.59	0.47	1.00								
High Yield Bond	0.54	0.39	0.49	0.45	0.51	0.34	-0.10	0.25	0.32	0.05	1.00							
Dev ex-US Bond (Hdg)	0.16	0.25	-0.01	0.17	0.18	0.26	0.10	0.66	0.65	0.39	0.26	1.00						
US RE Securities	0.58	0.47	0.44	0.49	0.56	0.50	-0.05	0.17	0.23	0.10	0.56	0.05	1.00					
Global RE Securities	0.64	0.58	0.56	0.61	0.65	0.58	-0.05	0.17	0.22	0.11	0.61	0.03	0.96	1.00				
Private Real Estate	0.54	0.44	0.44	0.47	0.52	0.51	-0.05	0.19	0.25	0.09	0.57	0.05	0.77	0.75	1.00			
Commodities	0.25	0.34	0.39	0.38	0.32	0.27	0.00	-0.02	-0.02	0.25	0.29	-0.10	0.25	0.28	0.25	1.00		
Real Assets	0.48	0.51	0.58	0.57	0.54	0.47	-0.02	0.23	0.25	0.39	0.56	0.05	0.70	0.75	0.70	0.65	1.00	
Inflation (CPI)	-0.10	-0.15	-0.13	-0.15	-0.13	-0.10	0.10	-0.12	-0.12	0.15	-0.08	-0.08	0.05	0.03	0.05	0.44	0.26	1.00

# Q1 Rebound in Jobs

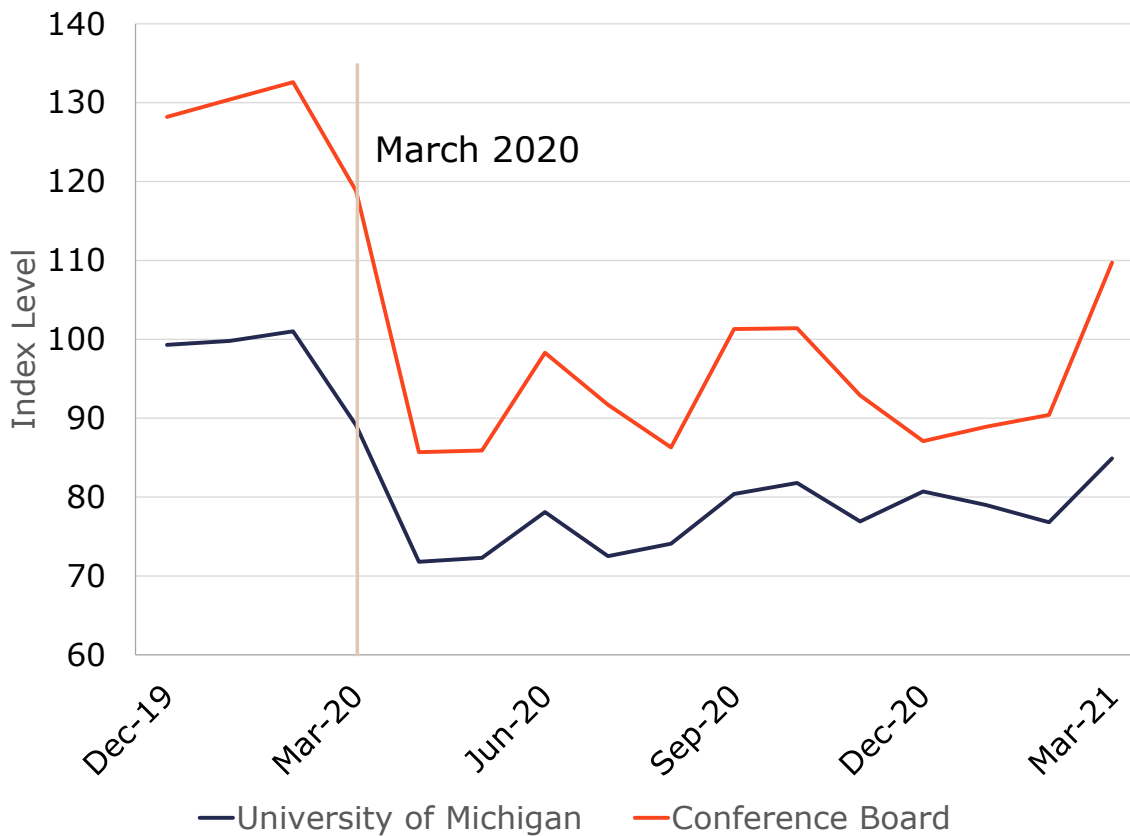
After decelerating in Q4 2020, change in Non-farm Payrolls accelerated in Q1



Data Source: Bloomberg

# Consumer Confidence

## Highest levels since the onset of COVID-19

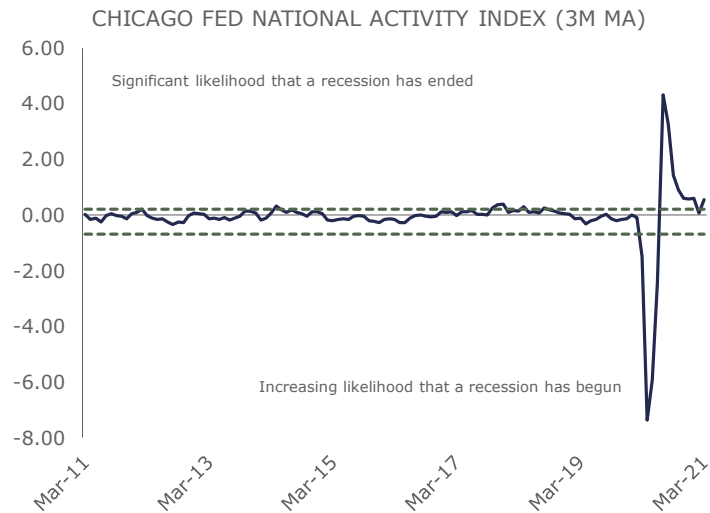


Data Source: Bloomberg

Economic/Market Activity

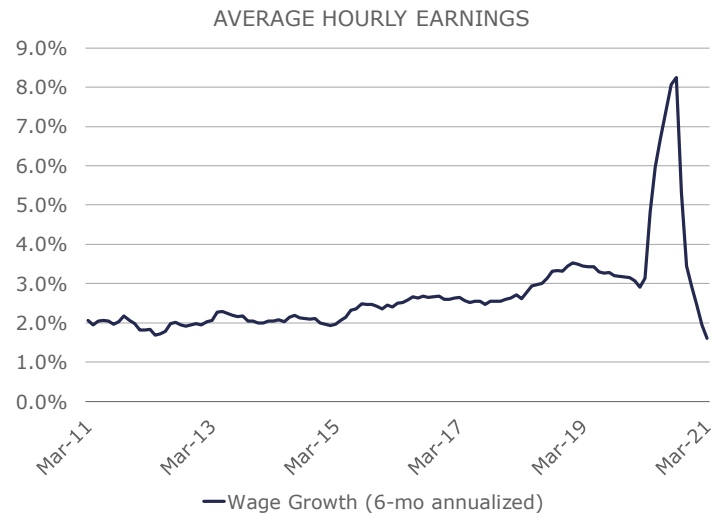
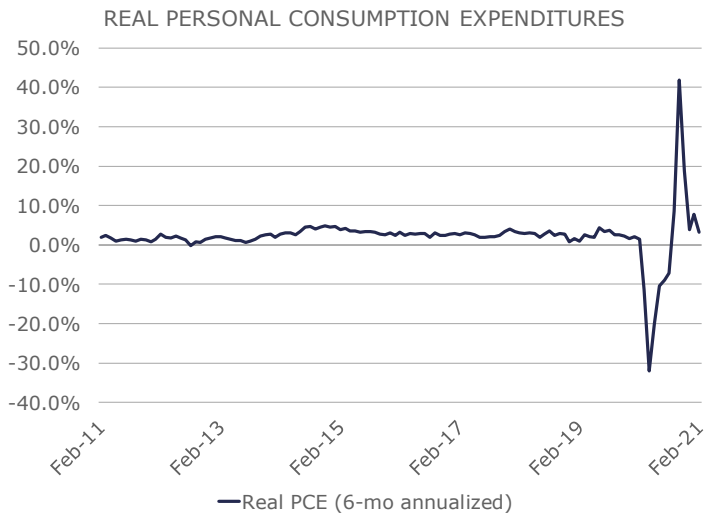
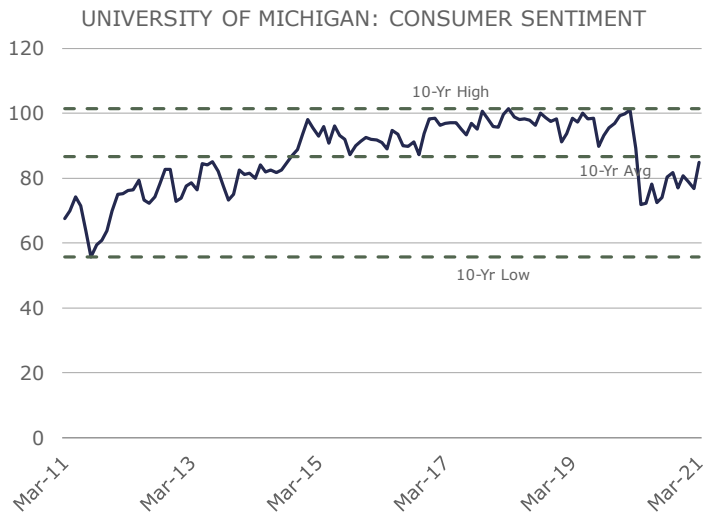
Wilshire

# Economic Growth



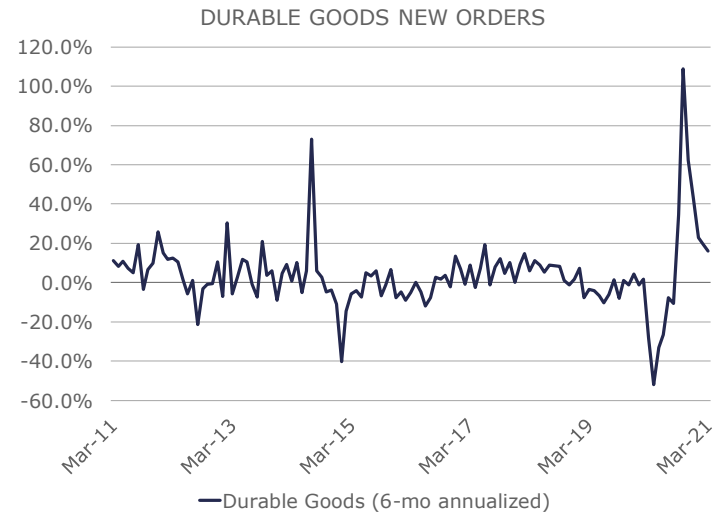
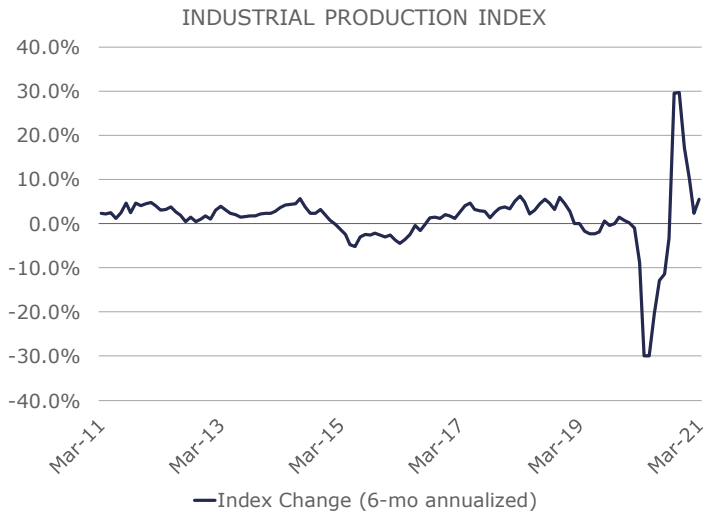
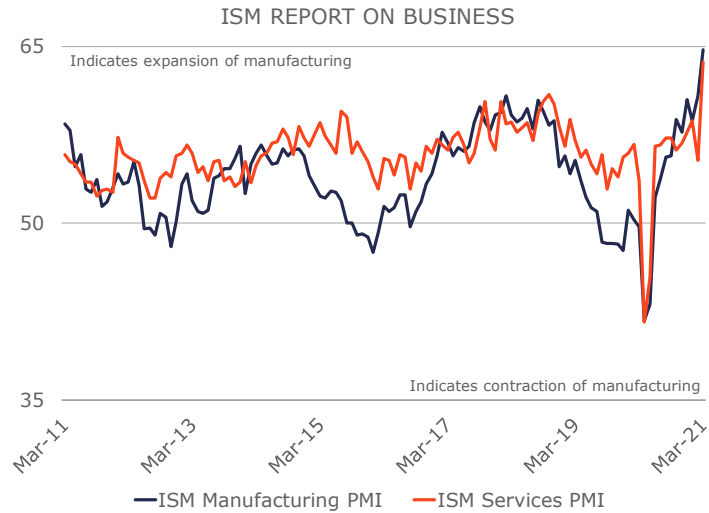
Data Sources: Bloomberg

# Consumer Activity



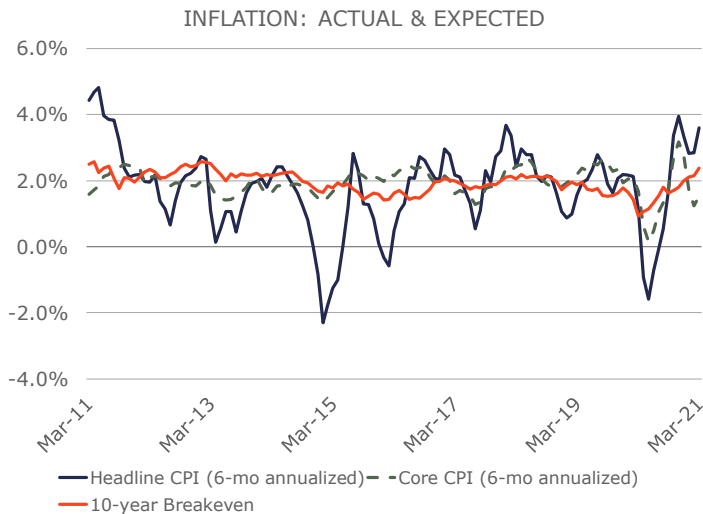
Data Sources: Bloomberg

# Business Activity



Data Sources: Bloomberg

# Inflation and Employment



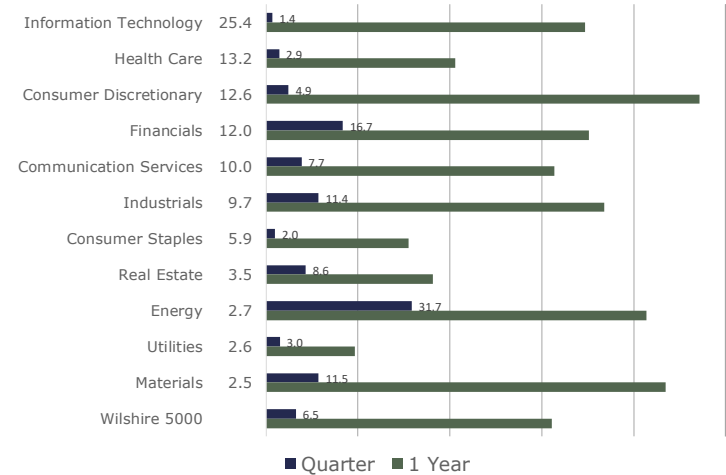
Data Sources: Bloomberg



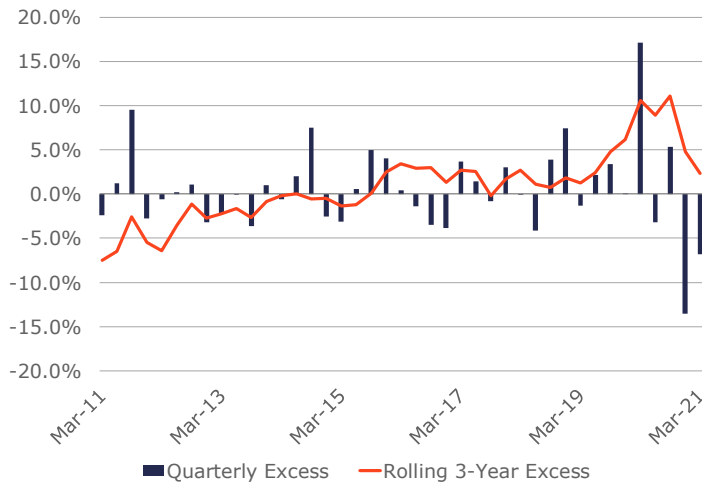
# U.S. Equity Market

AS OF 3/31/2021	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Wilshire 5000 Index	6.5	6.5	62.2	17.2	16.7	13.8
Wilshire U.S. Large Cap	5.8	5.8	59.6	17.4	16.8	14.0
Wilshire U.S. Small Cap	13.5	13.5	94.3	14.8	15.6	12.0
Wilshire U.S. Large Growth	2.0	2.0	66.5	21.3	20.7	15.9
Wilshire U.S. Large Value	9.8	9.8	51.3	13.4	12.9	12.0
Wilshire U.S. Small Growth	9.0	9.0	96.7	17.7	18.9	13.1
Wilshire U.S. Small Value	18.2	18.2	91.5	11.9	12.3	10.8
Wilshire REIT Index	8.8	8.8	34.7	9.0	5.0	8.5
MSCI USA Min. Vol. Index	2.3	2.3	30.6	12.4	11.9	13.1
FTSE RAFI U.S. 1000 Index	14.4	14.4	67.9	14.1	14.3	12.6

U.S. SECTOR WEIGHT AND RETURN (%)



LARGE CAP VS SMALL CAP



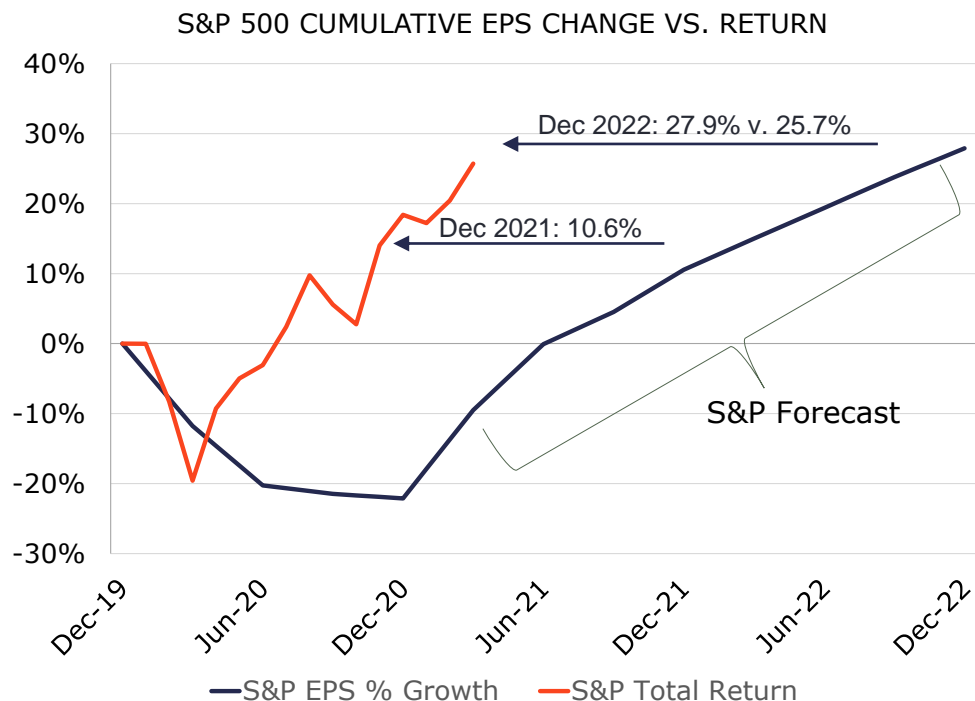
LARGE GROWTH VS LARGE VALUE



Data Sources: Bloomberg, Wilshire Atlas

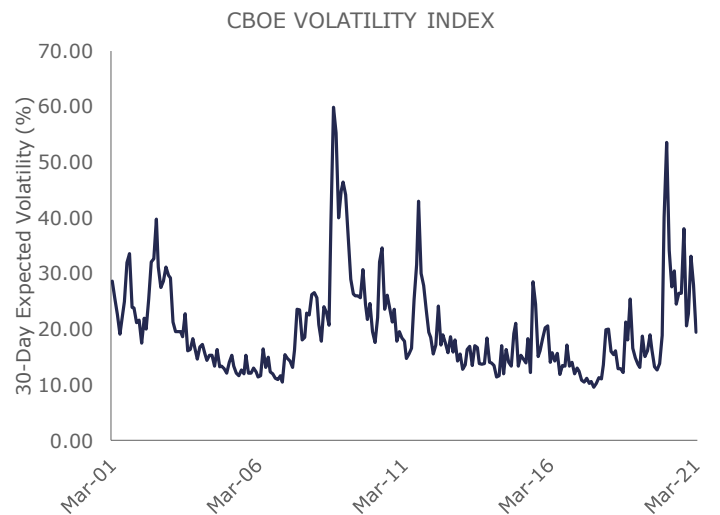
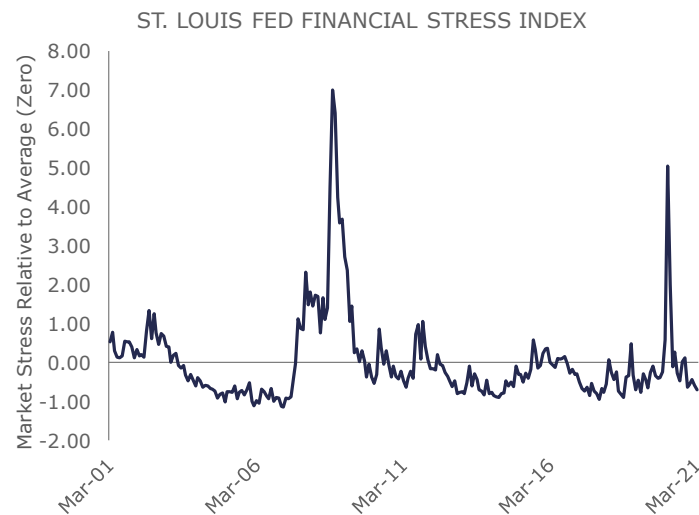
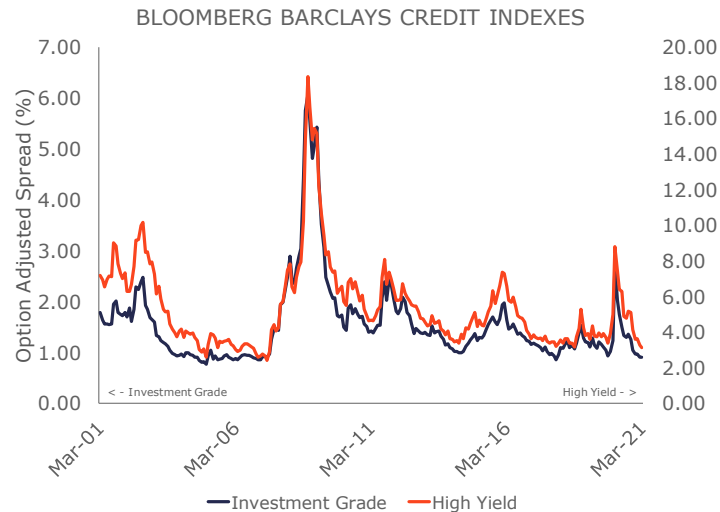
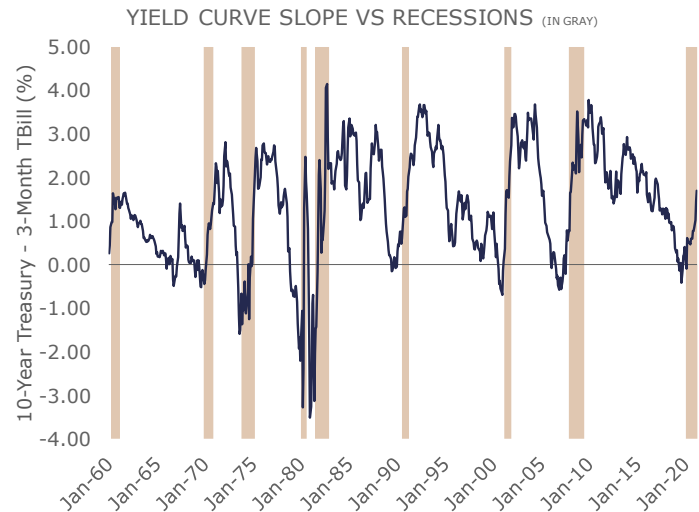
# U.S. Corporate Earnings

- If current S&P 500 Operating EPS estimates are realized (up ~40% in 2021 & ~15% in 2022), it would result in a 28% cumulative growth rate versus pre-COVID (Dec. 2019) levels
- Cumulative S&P 500 total return is already equal to 25.7% as of March 2021



Data Sources: Bloomberg, S&P Dow Jones

# Risk Monitor

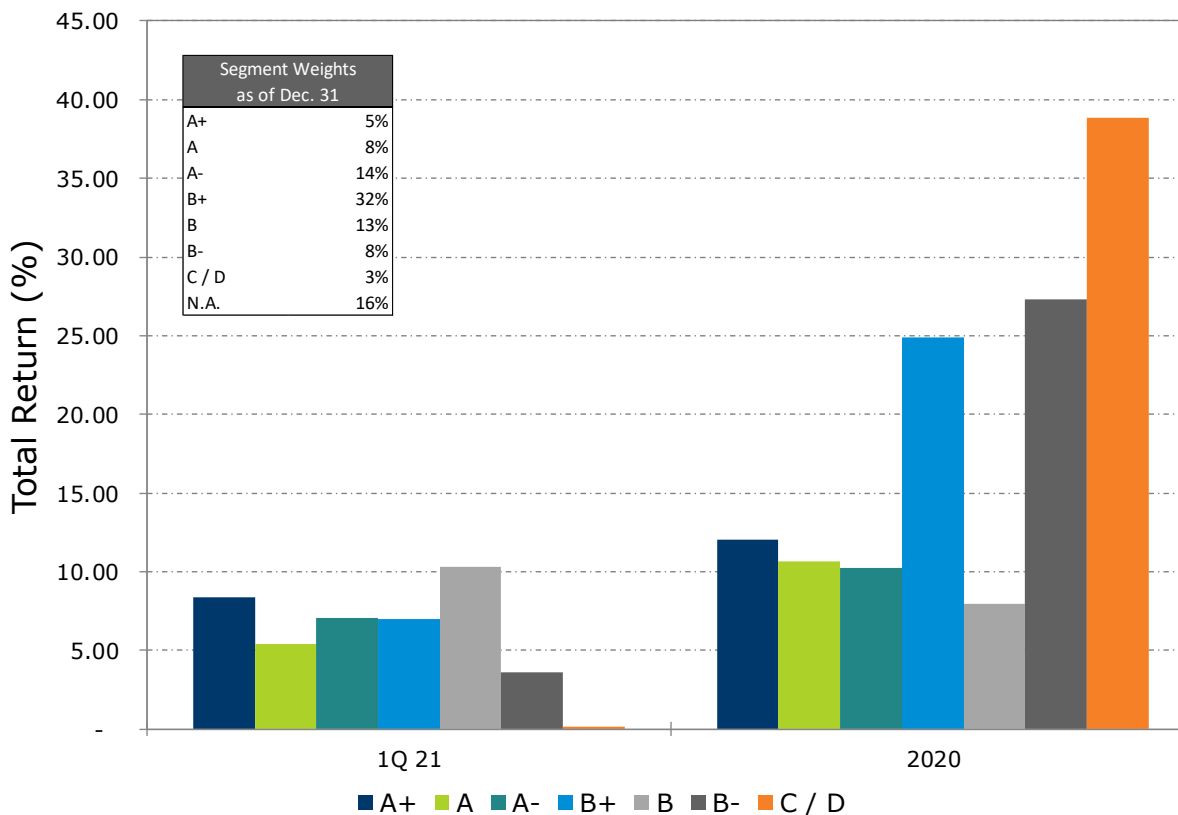


Data Sources: Bloomberg

# Returns by Quality Segment

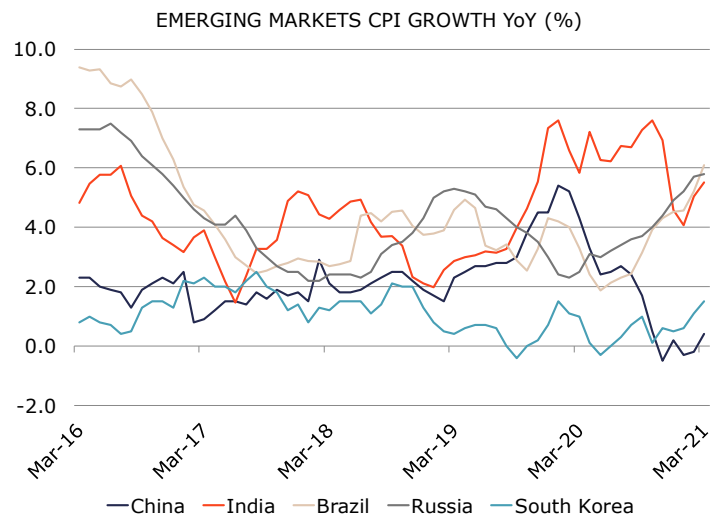
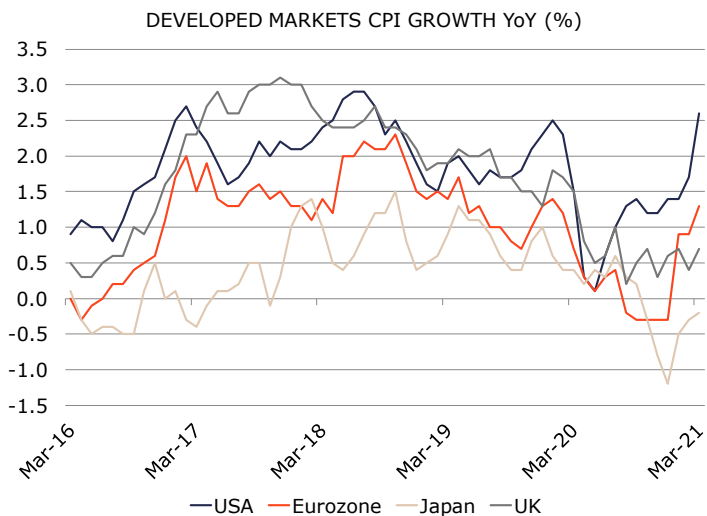
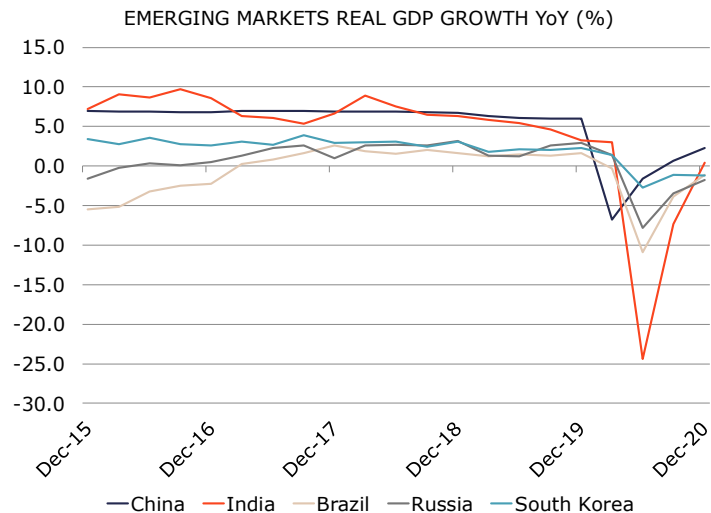
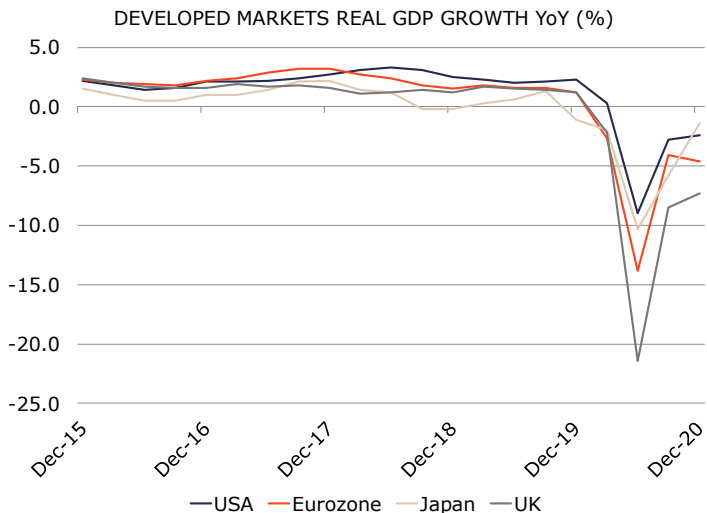
**Gains were broad based during the first quarter, while lower quality names exceeded during 2020**

RETURN BY S&P QUALITY RATING



Data Sources: Wilshire Atlas

# Non-U.S. Growth and Inflation

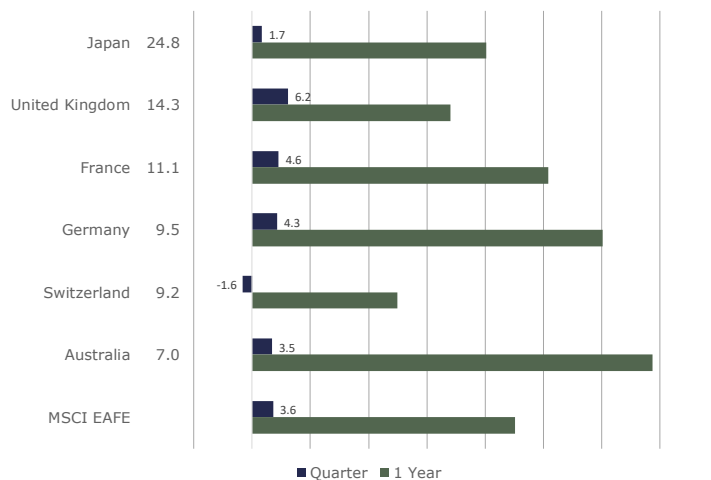


Data Sources: Bloomberg

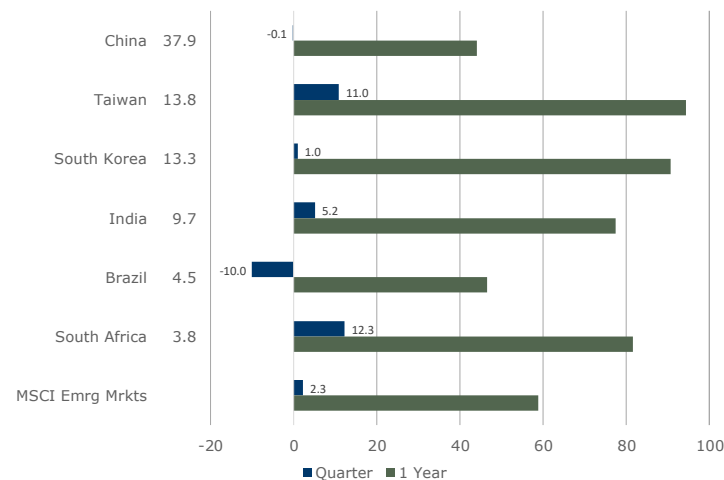
# Non-U.S. Equity Market

AS OF 3/31/2021	QTR	YTD	1 YR	3 YR	5 YR	10 YR
MSCI ACWI ex-US (\$G)	3.6	3.6	50.0	7.0	10.3	5.4
MSCI EAFE (\$G)	3.6	3.6	45.2	6.5	9.4	6.0
MSCI Emerging Markets (\$G)	2.3	2.3	58.9	6.9	12.5	4.0
MSCI Frontier Markets (\$G)	-6.0	-6.0	34.0	-4.0	2.8	1.8
MSCI ACWI ex-US Growth (\$G)	0.0	0.0	49.8	10.7	12.4	7.1
MSCI ACWI ex-US Value (\$G)	7.3	7.3	51.7	3.2	8.1	3.9
MSCI ACWI ex-US Small (\$G)	5.6	5.6	70.4	7.0	10.8	6.7
MSCI ACWI Minimum Volatility	1.9	1.9	25.1	8.5	9.0	9.8
MSCI EAFE Minimum Volatility	-0.5	-0.5	19.5	3.4	5.6	7.0
FTSE RAFI Developed ex-US	8.6	8.6	54.5	4.7	9.0	4.6
MSCI EAFE LC (G)	7.7	7.7	37.1	7.6	9.3	8.0
MSCI Emerging Markets LC (G)	4.0	4.0	53.5	9.7	13.3	7.3

DEVELOPED MARKETS WEIGHT AND RETURN (%)



EMERGING MARKETS WEIGHT AND RETURN (%)

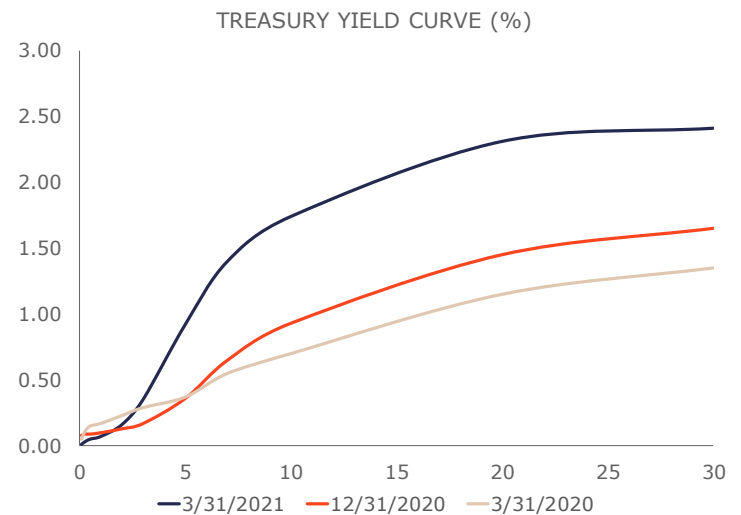
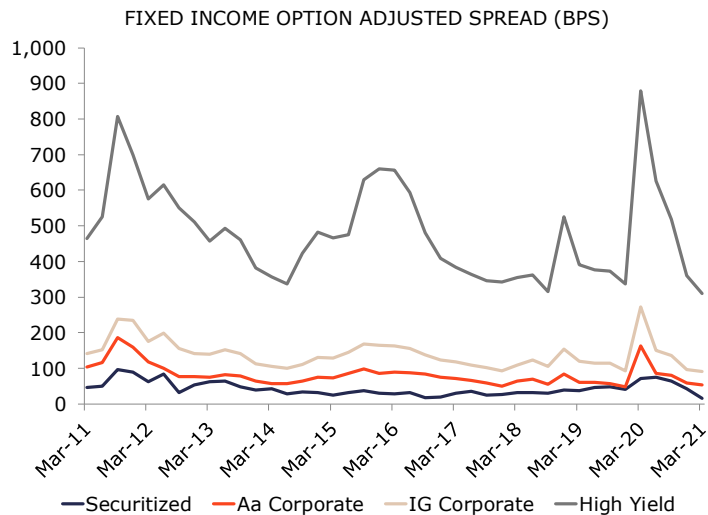


Data Sources: Bloomberg

# U.S. Fixed Income

AS OF 3/31/2021	YTW	DUR.	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg Barclays Aggregate	1.6	6.4	-3.4	-3.4	0.7	4.7	3.1	3.4
Bloomberg Barclays Treasury	1.0	6.8	-4.3	-4.3	-4.4	4.1	2.2	2.9
Bloomberg Barclays Gov't-Rel.	1.5	6.0	-2.9	-2.9	2.4	4.4	3.1	3.3
Bloomberg Barclays Securitized	1.8	4.2	-1.2	-1.2	0.3	3.9	2.5	2.9
Bloomberg Barclays Corporate	2.3	8.5	-4.6	-4.6	8.7	6.2	4.9	5.0
Bloomberg Barclays LT Gov't/Credit	3.0	16.3	-10.4	-10.4	-2.1	7.1	5.5	7.0
Bloomberg Barclays LT Treasury	2.3	18.6	-13.5	-13.5	-15.8	5.9	3.1	6.3
Bloomberg Barclays LT Gov't-Rel.	3.4	13.5	-7.4	-7.4	5.2	6.1	5.3	6.7
Bloomberg Barclays LT Corporate	3.5	15.1	-8.5	-8.5	9.2	7.7	6.9	7.3
Bloomberg Barclays U.S. TIPS *	1.6	8.1	-1.5	-1.5	7.5	5.7	3.9	3.4
Bloomberg Barclays High Yield	4.2	3.9	0.8	0.8	23.7	6.8	8.1	6.5
Treasury Bills	0.0	0.3	0.0	0.0	0.1	1.5	1.2	0.7

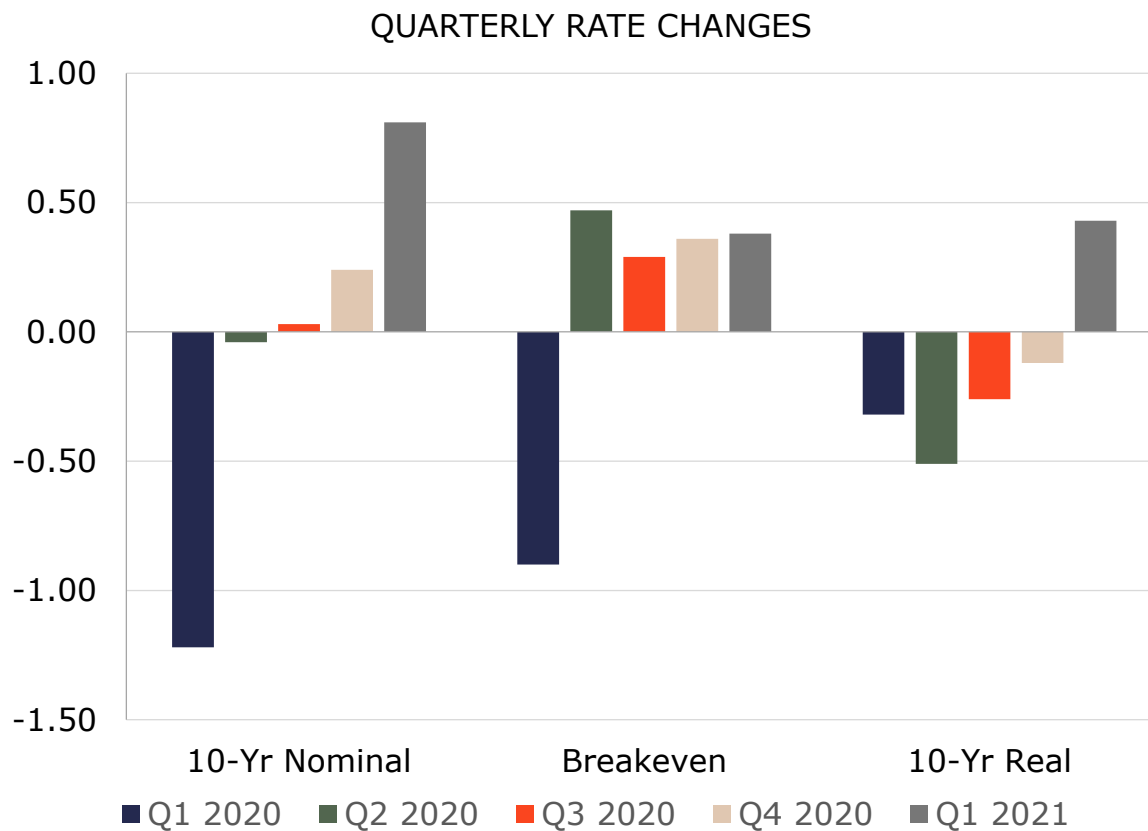
\* Yield and Duration statistics are for a proxy index based on similar maturity, the Bloomberg Barclays U.S. Treasury 7-10 Year Index



Data Sources: Bloomberg

# Rate Change Attribution

After dropping in four consecutive quarters, Real Yields up nearly 50 bps in Q1

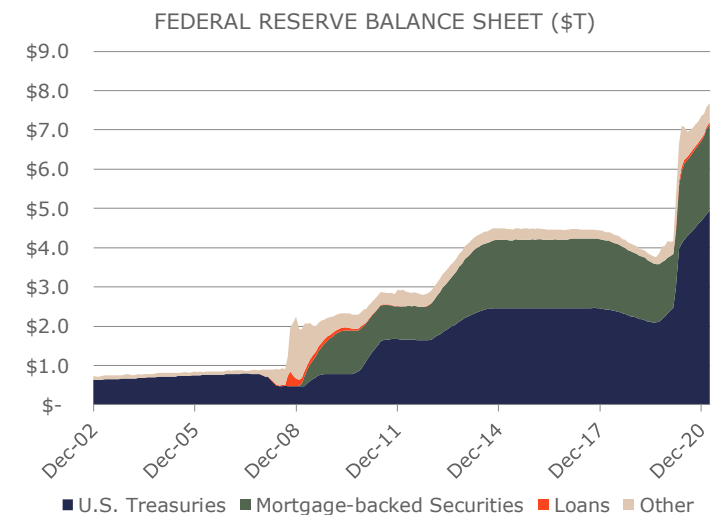
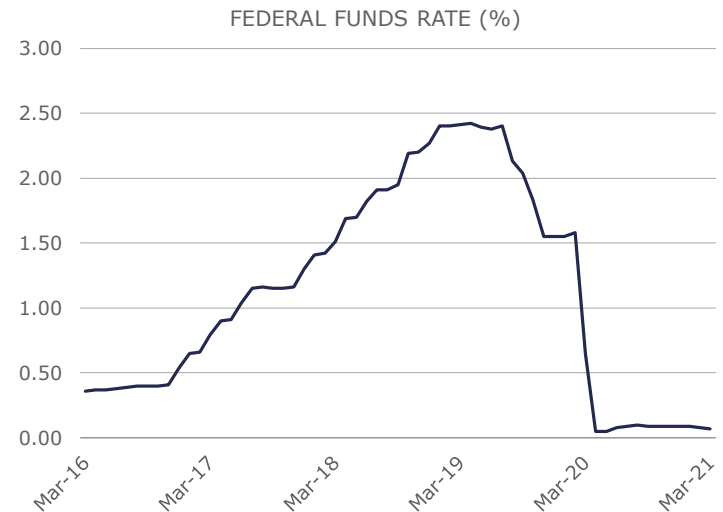


Data Source: Bloomberg



# Federal Reserve

- **Current expectation for the Fed-funds rate is to remain near zero through 2023**
- **Federal Reserve has added nearly \$4 trillion in assets to their balance sheet during the past year**
- **QE4 is now larger than the 3 phases of quantitative easing – combined – following the global financial crisis**



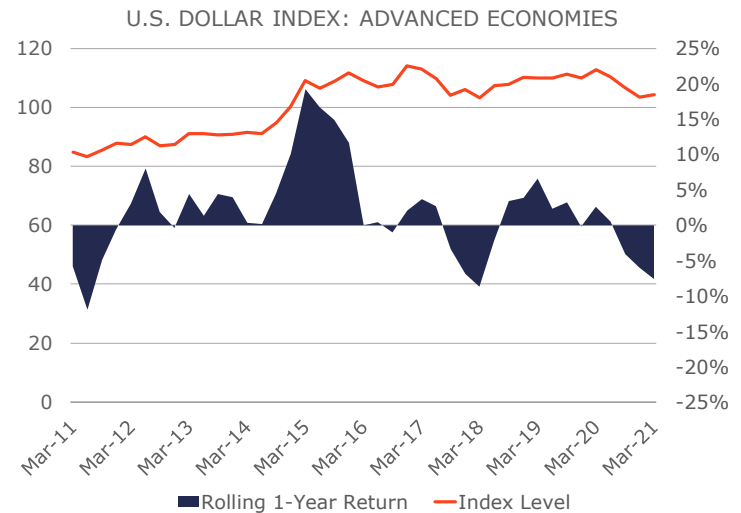
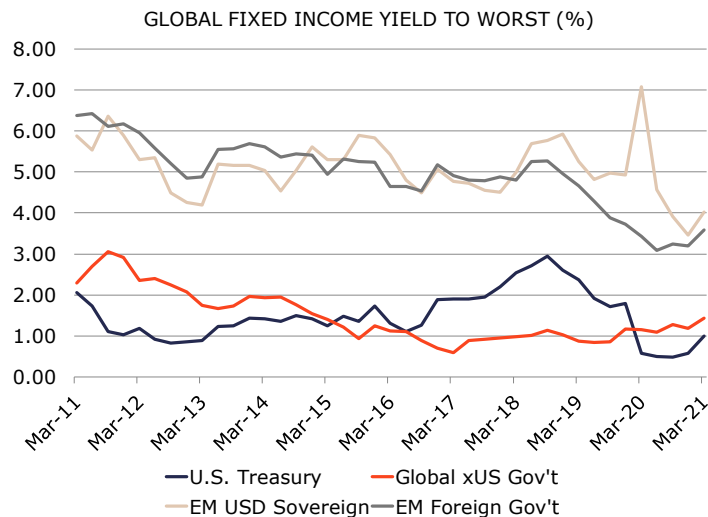
	Announced	Closed	Amount (bil)
QE1	11/25/2008	3/31/2010	\$1,403
QE2	11/3/2010	6/29/2012	\$568
QE3	9/13/2012	10/29/2014	\$1,674
QE4	3/23/2020		\$3,809

Data Sources: Bloomberg

# Non-U.S. Fixed Income

AS OF 3/31/2021	QTR	YTD	1 YR	3 YR	5 YR	10 YR
<b>DEVELOPED MARKETS</b>						
Bloomberg Barclays Global Aggregate xUS	-5.3	-5.3	7.2	1.1	2.1	1.3
Bloomberg Barclays Global Aggregate xUS *	-1.9	-1.9	1.5	3.9	3.3	4.2
Bloomberg Barclays Global Inflation Linked xUS	-4.6	-4.6	14.9	2.0	4.0	3.4
Bloomberg Barclays Global Inflation Linked xUS *	-3.3	-3.3	5.6	4.4	5.5	5.8
<b>EMERGING MARKETS (HARD CURRENCY)</b>						
Bloomberg Barclays EM USD Aggregate	-3.5	-3.5	13.6	4.8	5.2	5.5
<b>EMERGING MARKETS (FOREIGN CURRENCY)</b>						
Bloomberg Barclays EM Local Currency Gov't	-3.7	-3.7	9.7	1.4	3.6	2.0
Bloomberg Barclays EM Local Currency Gov't *	-2.0	-2.0	0.5	3.7	3.2	3.3
Euro vs. Dollar	-4.0	-4.0	6.3	-1.6	0.6	-1.9
Yen vs. Dollar	-6.7	-6.7	-2.9	-1.4	0.3	-2.8
Pound vs. Dollar	0.8	0.8	11.0	-0.6	-0.8	-1.5

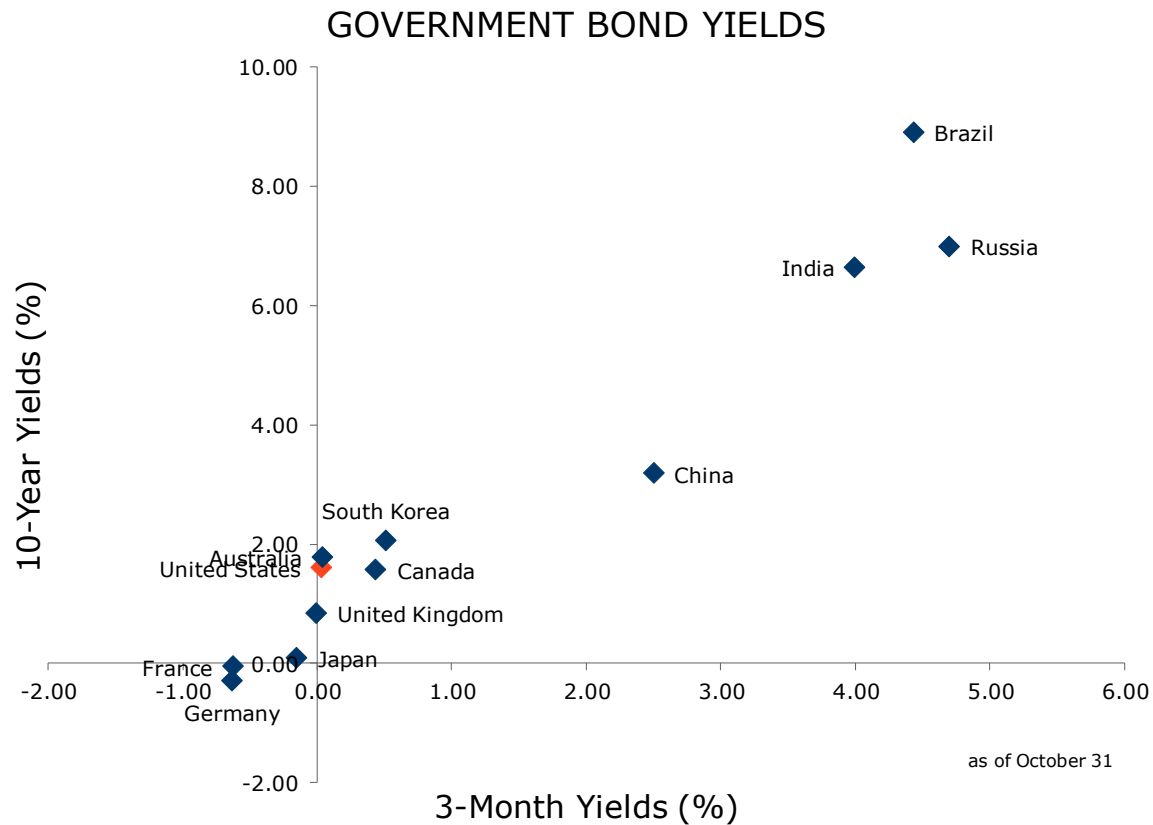
\* Returns are reported in terms of local market investors, which removes currency effects.



Data Sources: Bloomberg

# Global Interest Rates

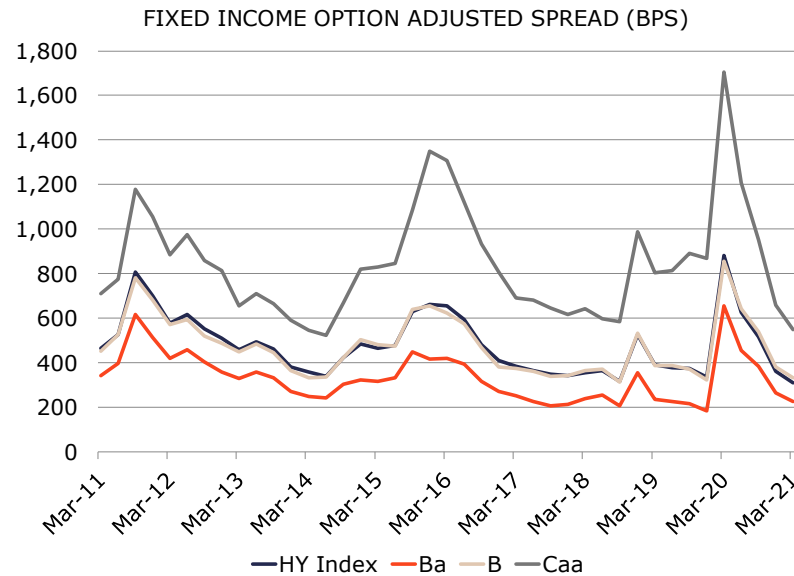
**Negative rates found in Germany and France; low but positive rates, and at similar levels, in the U.S. and Australia while the U.K. approaches zero**



Data Sources: Bloomberg

# High Yield Bond Market

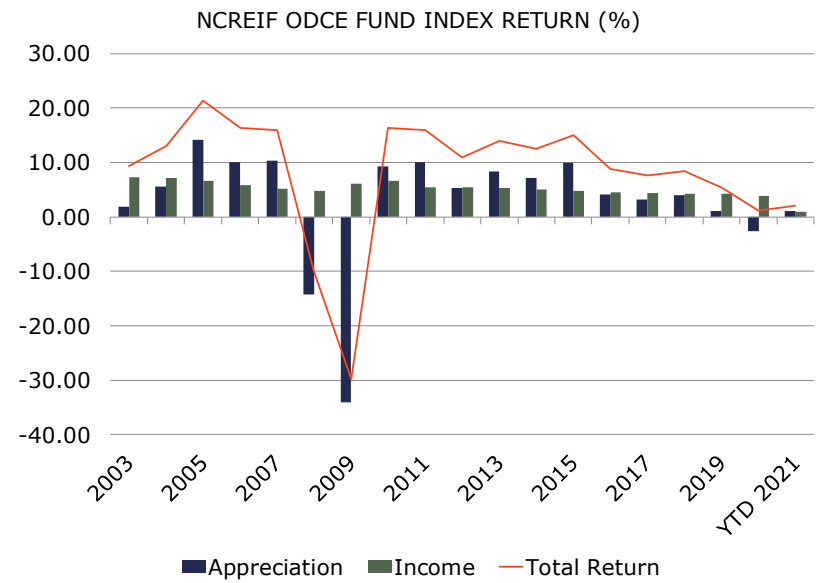
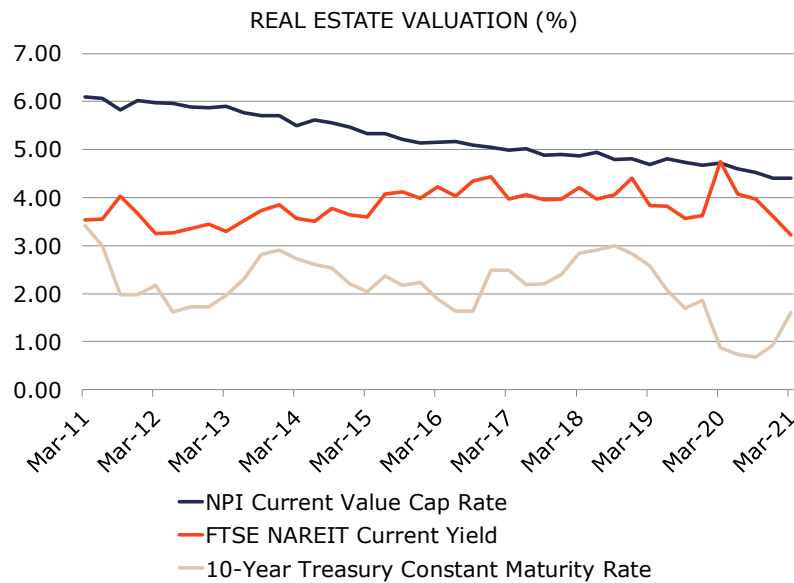
AS OF 3/31/2021		YTW	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg Barclays High Yield		4.2	0.8	0.8	23.7	6.8	8.1	6.5
S&P LSTA Leveraged Loan		3.7	1.0	1.0	15.3	4.1	5.0	3.9
HIGH YIELD QUALITY DISTRIBUTION		WEIGHT						
Ba U.S. High Yield	53.2%	3.4	-0.1	-0.1	22.4	8.0	7.6	6.9
B U.S. High Yield	33.5%	4.5	1.2	1.2	21.6	6.4	7.6	6.1
Caa U.S. High Yield	12.8%	6.5	3.6	3.6	33.3	3.6	9.3	6.2
Ca to D U.S. High Yield	0.5%	17.2	14.6	14.6	67.3	4.2	18.2	-3.3
Non-Rated U.S. High Yield	0.0%	0.0	0.0	0.0	6.1	0.1	3.8	2.8



Data Sources: Bloomberg

# Real Assets

AS OF 3/31/2021	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg Barclays U.S. TIPS	-1.5	-1.5	7.5	5.7	3.9	3.4
Bloomberg Commodity Index	6.9	6.9	35.0	-0.2	2.3	-6.3
Bloomberg Gold Index	-9.8	-9.8	4.4	7.4	5.5	0.9
Wilshire Global RESI Index	6.6	6.6	34.1	6.6	4.8	7.3
NCREIF ODCE Fund Index	2.1	2.1	2.3	4.9	6.2	9.7
NCREIF Timberland Index	0.8	0.8	1.5	1.8	2.6	4.6
Alerian Misstream Energy	20.9	20.9	74.5	4.2	4.8	n.a.



Data Sources: Bloomberg, National Council of Real Estate Investment Fiduciaries

# Asset Class Performance

ASSET CLASS RETURNS - BEST TO WORST						ANNUALIZED 5-YEAR AS OF 3/21
2016	2017	2018	2019	2020	2021 YTD	
MLPs 18.3%	Emrg Mrkts 37.7%	T-Bills 1.9%	U.S. Equity 31.0%	U.S. Equity 20.8%	Midstream 20.9%	U.S. Equity 16.7%
High Yield 17.1%	Developed 25.6%	Core Bond 0.0%	REITs 25.8%	Emrg Mrkts 18.7%	REITs 8.8%	Emrg Mrkts 12.5%
U.S. Equity 13.4%	U.S. Equity 21.0%	U.S. TIPS -1.3%	Developed 22.7%	U.S. TIPS 11.0%	Commodities 6.9%	Developed 9.4%
Commodities 11.8%	High Yield 7.5%	High Yield -2.1%	Emrg Mrkts 18.9%	Developed 8.3%	U.S. Equity 6.5%	High Yield 8.1%
Emrg Mrkts 11.6%	REITs 4.2%	REITs -4.8%	High Yield 14.3%	Core Bond 7.5%	Developed 3.6%	REITs 5.0%
REITs 7.2%	Core Bond 3.6%	U.S. Equity -5.3%	Core Bond 8.7%	High Yield 7.1%	Emrg Mrkts 2.3%	Midstream 4.8%
U.S. TIPS 4.7%	U.S. TIPS 3.0%	Commodities -11.2%	U.S. TIPS 8.4%	T-Bills 0.7%	High Yield 0.8%	U.S. TIPS 3.9%
Core Bond 2.6%	Commodities 1.7%	MLPs -12.4%	Commodities 7.7%	Commodities -3.1%	T-Bills 0.0%	Core Bond 3.1%
Developed 1.5%	T-Bills 0.8%	Developed -13.4%	MLPs 6.6%	REITs -7.9%	U.S. TIPS -1.5%	Commodities 2.3%
T-Bills 0.3%	MLPs -6.5%	Emrg Mrkts -14.2%	T-Bills 2.3%	Midstream -23.4%	Core Bond -3.4%	T-Bills 1.2%

Data Sources: Bloomberg

Note: Developed asset class is developed equity markets ex-U.S., ex-Canada

# Appendix: Private Market Trends

Wilshire

# Private Equity – Fundraising & Investment Activity

Global Quarterly Private Equity Fundraising (Q1 2015 – Q1 2021)



Global Quarterly Private Equity-Backed Deals (Q1 2015 – Q1 2021)

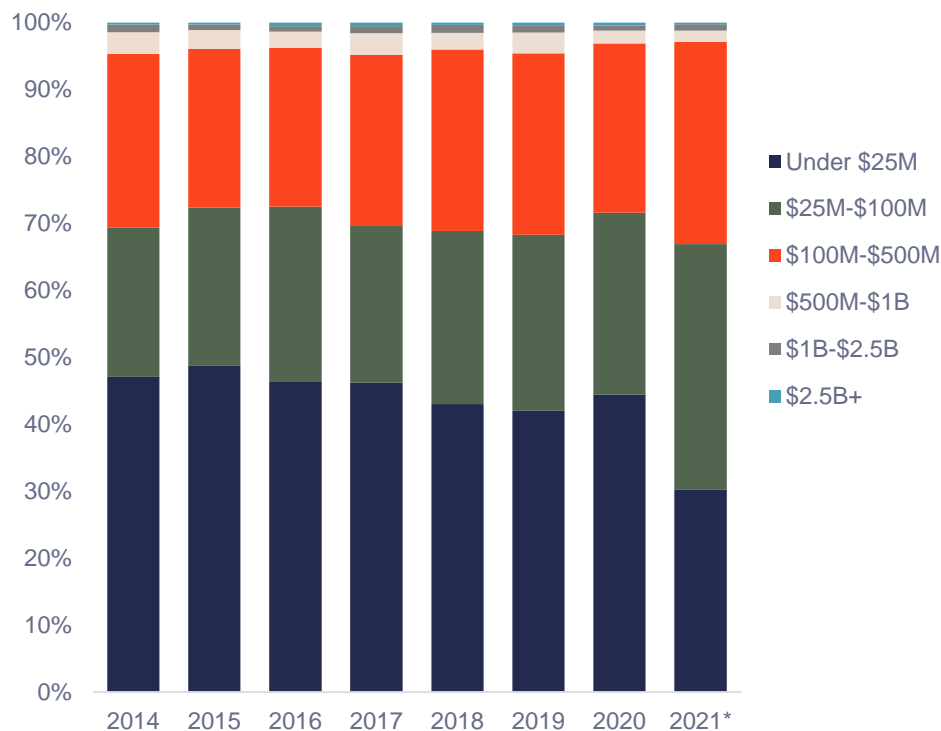


Source: Preqin, as of March 31, 2021.

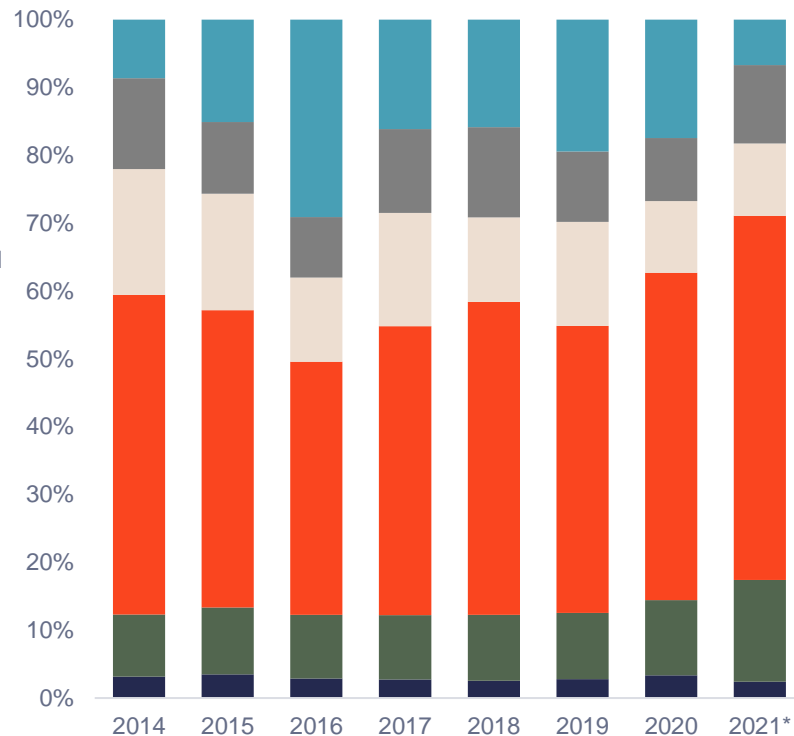


# U.S. Investment Activity by Deal Size

Percentage of Deal Volume by Deal Size (by Count)



Percentage of Deal Volume by Deal Size (by Dollars)

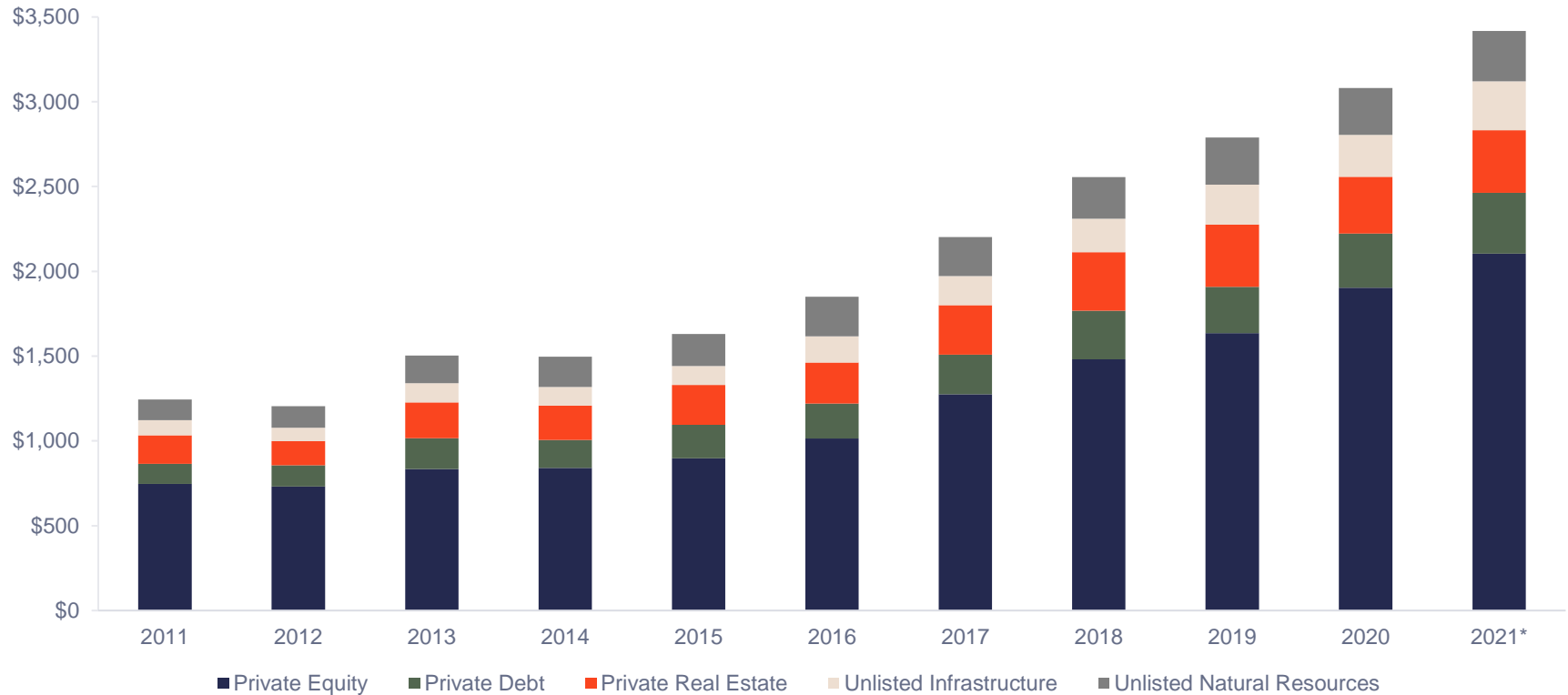


- Deal volume continues to be dominated by lower middle market deals with investment sizes below \$100 million through the first quarter of 2021
- However, deals with below \$100 million check sizes comprised only 17% of all deal volume by amount of capital invested in the first quarter of 2021

Source: Pitchbook, \*as of March 31, 2021.

# Private Capital Dry Powder

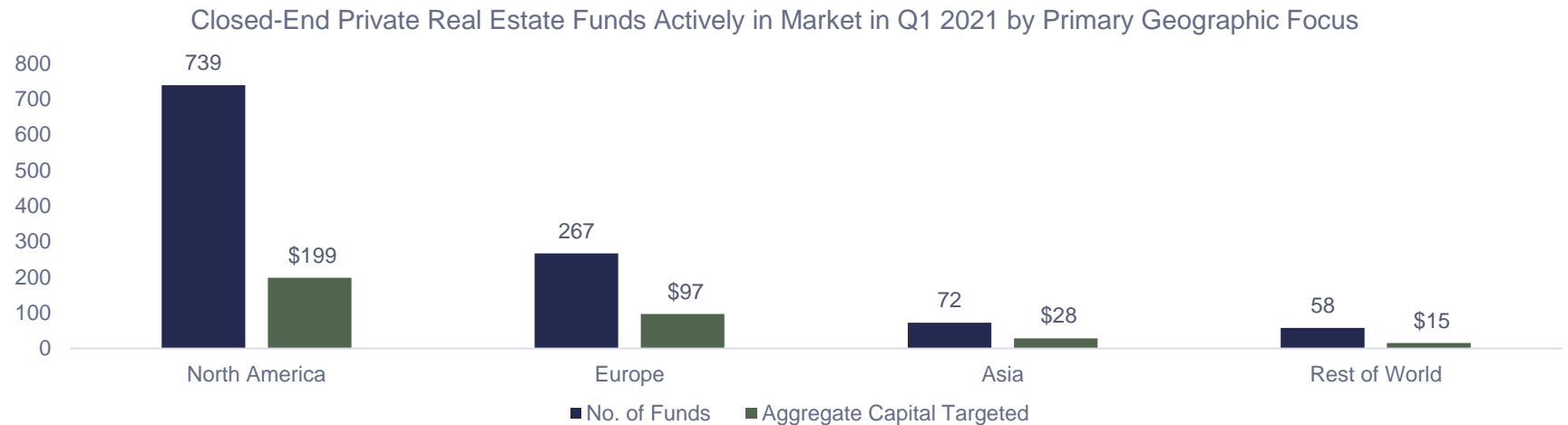
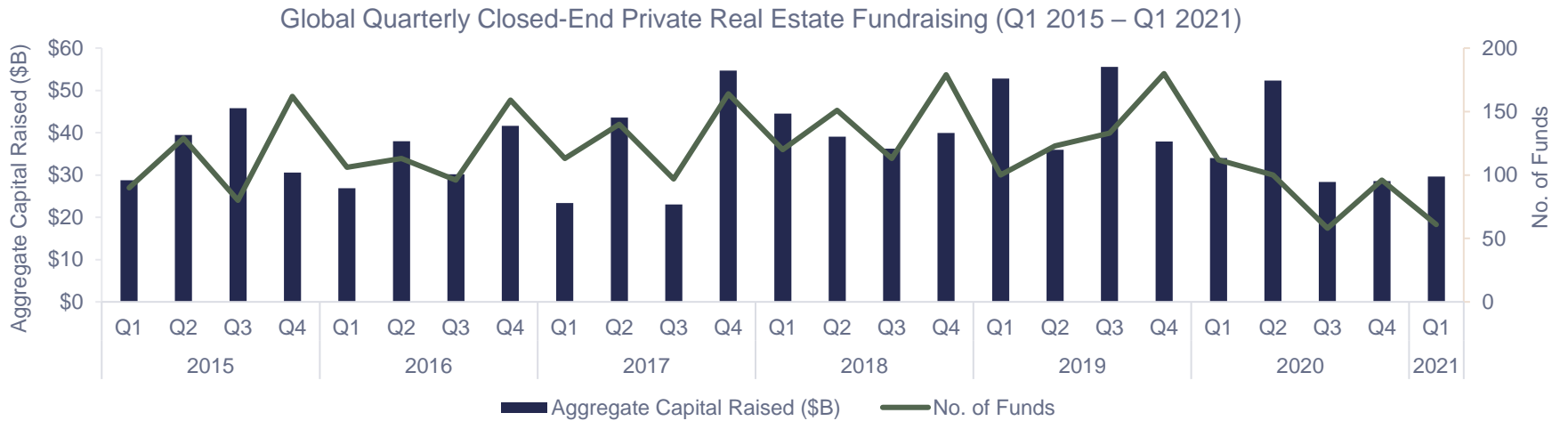
Private Capital Dry Powder by Fund Type (2011 – April 2021)



- Global private capital dry power continues to increase, topping \$3.4 trillion across all fund types
- Private equity comprises just over 61% of total dry powder in the market as of April 2021

Source: Preqin, \*as of April 22, 2021.

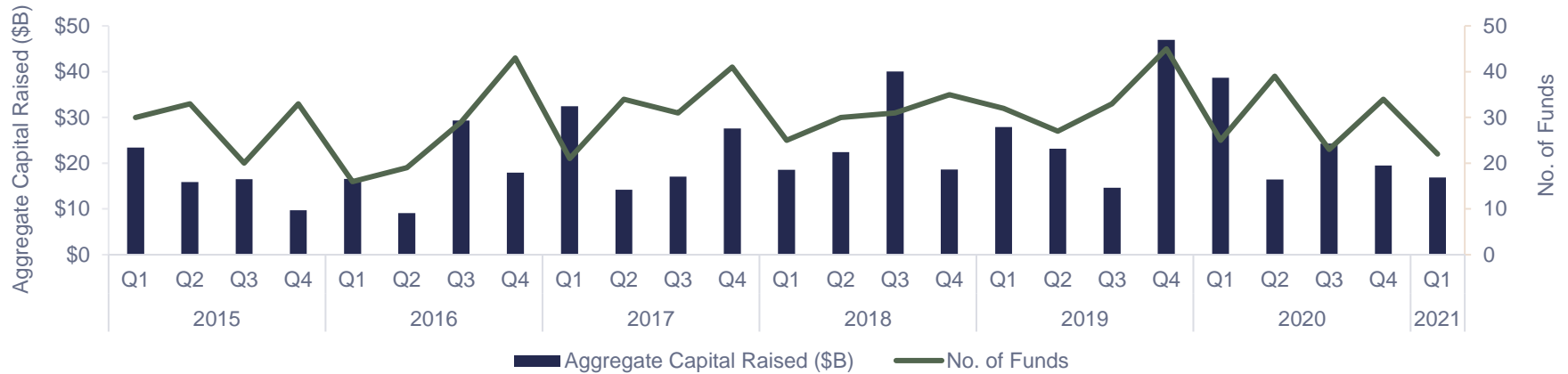
# Private Real Estate – Fundraising Activity



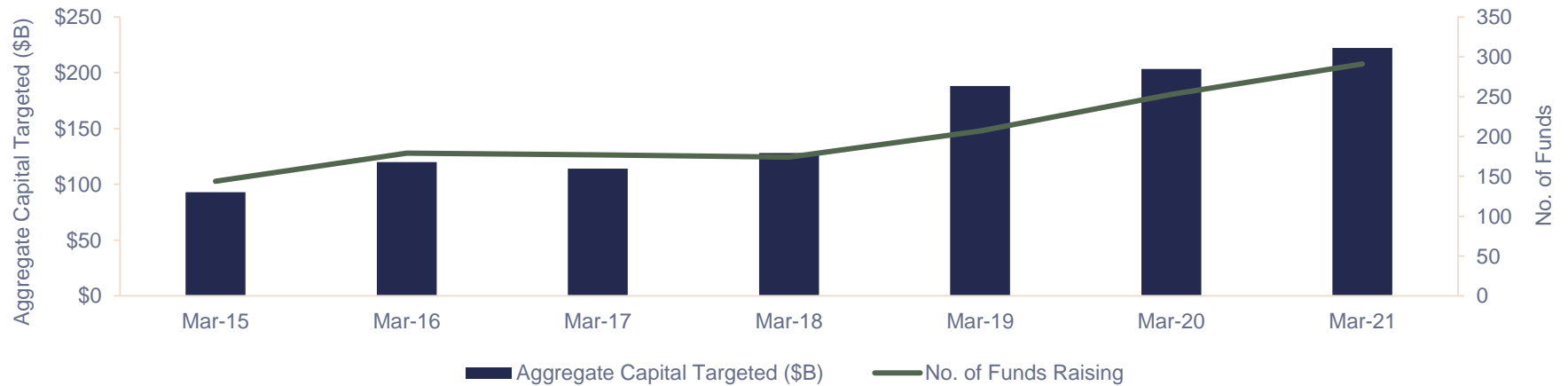
Source: Preqin, as of March 31, 2021.

# Unlisted Infrastructure – Fundraising & Investment Activity

Global Quarterly Unlisted Infrastructure Fundraising (Q1 2015 – Q1 2021)



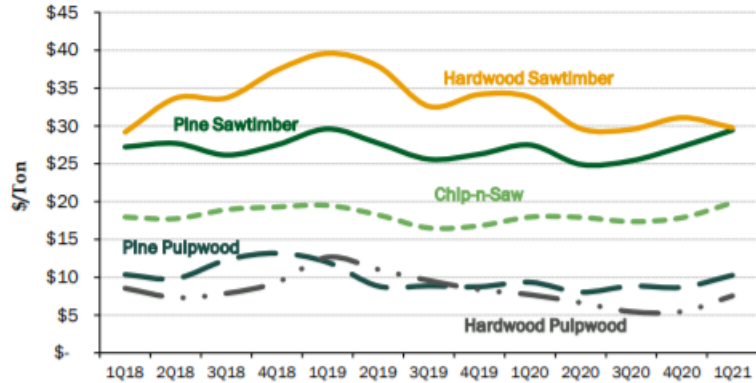
Unlisted Infrastructure Funds in Marker over Time (March 2015 – March 2021)



Source: Preqin, as of March 31, 2021.

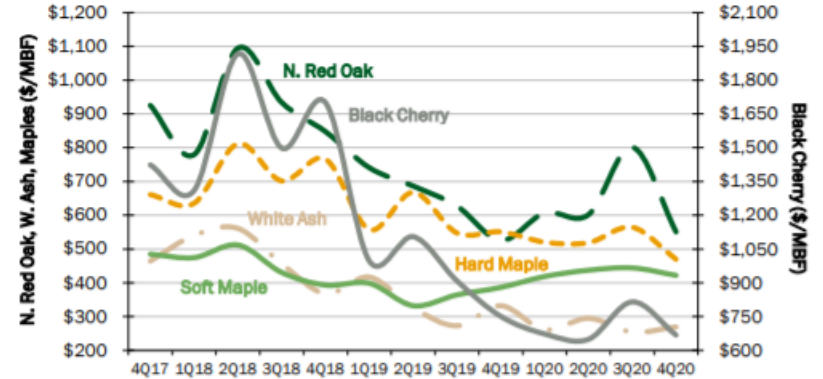
# Timber Investments

## Southeastern Timber Prices



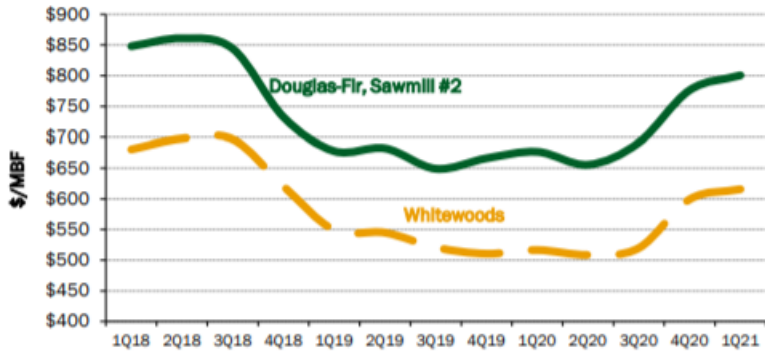
Source: Forest2Market®

## Northeastern Hardwood Timber Prices



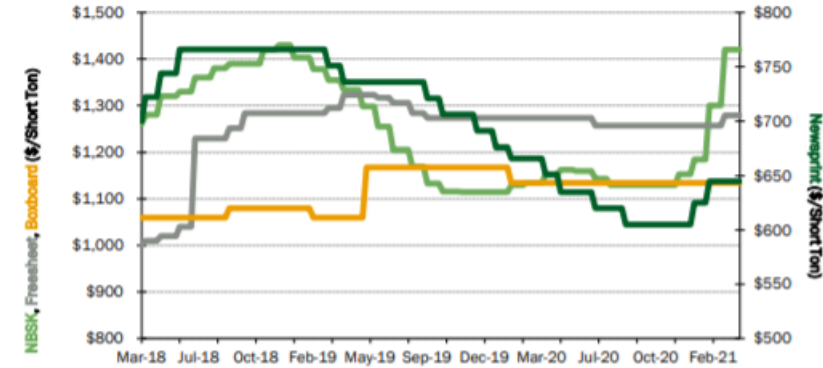
Source: Pennsylvania Woodlands Timber Market Report - Northwest Region

## Pacific Northwest Timber Prices



Source: Fastmarkets RISI - Log Lines®

## Pulp and Paper

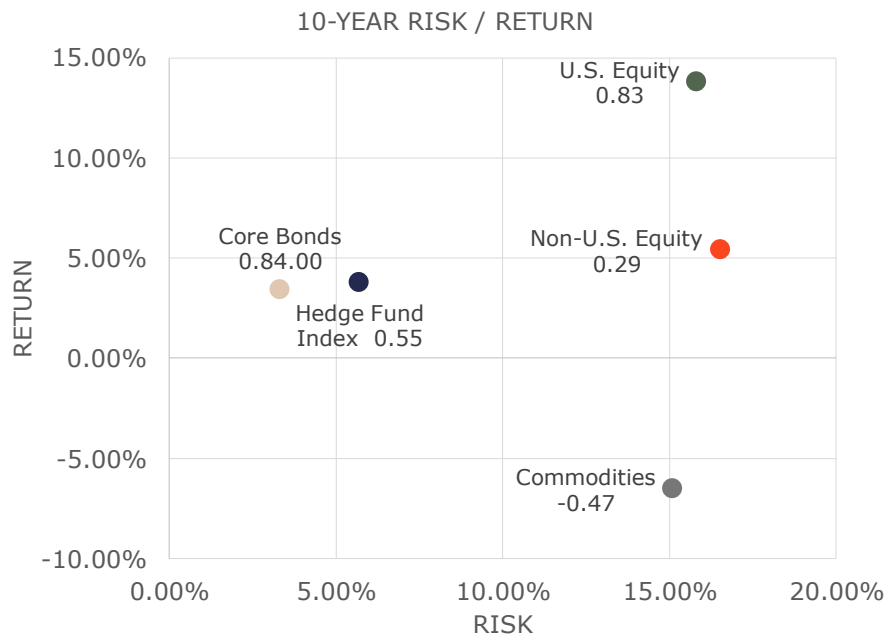


Source: Fastmarkets RISI

Data Sources: Forest Investment Associates

# Hedge Fund Performance

AS OF 3/31/2021	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Credit Suisse Hedge Fund Index	2.1	2.1	19.3	4.6	5.0	3.8
Event Driven	4.6	4.6	32.9	5.2	5.9	3.1
Global Macro	1.2	1.2	17.3	5.7	5.2	4.1
Long/Short Equity	1.6	1.6	23.4	5.1	6.0	4.9
Multi-Strategy	1.0	1.0	14.0	3.6	4.9	5.3
Wilshire 5000 Index	6.5	6.5	62.2	17.2	16.7	13.8
MSCI ACWI ex-US (\$G)	3.6	3.6	50.0	7.0	10.3	5.4
Bloomberg Barclays Aggregate	-3.4	-3.4	0.7	4.7	3.1	3.4
Bloomberg Commodity Index	10.2	10.2	-3.1	-2.5	1.0	-6.5



Data Sources: Bloomberg

Note: Sharpe Ratio is included for each market segment

EXECUTIVE SUMMARY OF PERFORMANCE

## Employees' Retirement Fund of the City of Dallas



First Quarter 2021



## Capital Market Overview

### U.S. Equity Market

The U.S. stock market, represented by the Wilshire 5000 Total Market Index<sup>SM</sup>, was up 6.5% for the first quarter of 2021. All eleven sectors were in positive territory with Energy (+31.7%) and Financials (+16.7%) representing the best performing sectors. There was meaningful return dispersion between size and styles as the large-cap value index outperformed growth by 7.8% and small-cap outperformed large-cap by 7.7%. Inflation indexes have been on the rise during the past few months, with growth rates meaningfully above 2%. A jump in energy prices accounted for more than two-thirds of the increase in the Producer Price Index (PPI) in February, while both gasoline and food prices weigh on consumers. Investors are expecting at least some continued inflation as the 10-year breakeven inflation rate equaled 2.38% at quarter-end, the highest level in more than five years.

Small capitalization stocks outperformed large caps by a significant margin for the quarter as the Wilshire Small-Cap Index was up 13.5% versus 5.8% for the Wilshire US Large-Cap Index. Value stocks led growth during the first quarter but have still underperformed during the past twelve months.

### Fixed Income Market

The U.S. Treasury yield curve was up significantly across most maturities during the first quarter, with the long end approaching pre-COVID levels. The 10-year Treasury yield ended the quarter at 1.74%, up 82 basis points from December. The Federal Open Market Committee met twice during the quarter with no change to their overnight rate. The Committee's "dot plot" indicated that a few members are currently supporting a rate hike for next year, although the median forecast remains unchanged at zero increases through 2023.

### Non-U.S. Markets

Equity markets outside of the U.S. also enjoyed a strong quarter, with emerging markets trailing developed markets. Economic indicators out of the U.K. have been encouraging recently, although a slight contraction in growth is expected for the first quarter. Prime Minister Boris Johnson announced a "roadmap" for reopening the economy from the U.K.'s third lockdown, with restrictions being lifted entirely by midsummer. Conditions in Germany are more concerning as AstraZeneca's COVID-19 vaccine has been suspended due to concerns about serious complications. Despite a significant rise in Manufacturing PMIs in Germany, the country's economic recovery could be hindered if the vaccine rollout continues to face challenges. China, the world's second largest economy, is expected to return to economic growth in the high single-digits this year although many experts believe that the recovery has been uneven. The country's central bank is now attempting to restrict debt and borrowing without slowing the economy.

### Real Assets Markets

Real estate securities were up during the first quarter in both the U.S. and abroad. Gains by sector were broad based, with Retail REITs (+28%) and Hotel & Resort assets (+15%) leading the market. Commodity results were positive for the quarter as crude oil was up 21.9% to \$59.16 per barrel. Oil prices are now up +47% for the past six months. Natural gas prices were up 2.7% during the quarter, ending the quarter at \$2.61 per million BTUs. Midstream energy surged for the second consecutive quarter while the broader infrastructure segment was also positive. Finally, gold prices slid -9.6% and finished at approximately \$1,714 per troy ounce.





**Summary of Index Returns**  
 For Periods Ended March 31, 2021

	<u>Quarter</u>	<u>One Year</u>	<u>Three Years</u>	<u>Five Years</u>	<u>Ten Years</u>
<b>Domestic Equity</b>					
Standard & Poor's 500	6.17%	56.35%	16.78%	16.29%	13.91%
Wilshire 5000	6.49	62.23	17.18	16.71	13.82
Wilshire 4500	8.69	99.00	18.50	18.38	13.48
Wilshire Large Cap	5.80	59.60	17.45	16.83	14.04
Wilshire Small Cap	13.53	94.31	14.76	15.62	12.02
Wilshire Micro Cap	27.21	124.24	13.95	16.37	11.38
<b>Domestic Equity</b>					
Wilshire Large Value	9.81%	51.35%	13.43%	12.90%	12.04%
Wilshire Large Growth	1.96	66.54	21.28	20.66	15.94
Wilshire Mid Value	14.63	71.19	9.26	10.18	10.65
Wilshire Mid Growth	4.99	84.40	17.02	18.11	12.64
Wilshire Small Value	18.21	91.47	11.86	12.34	10.85
Wilshire Small Growth	8.99	96.69	17.67	18.89	13.08
<b>International Equity</b>					
MSCI All World ex U.S. (USD)	3.49%	49.41%	6.51%	9.76%	4.93%
MSCI EAFE	3.48	44.57	6.02	8.85	5.52
MSCI Europe	4.08	44.95	5.65	8.18	5.08
MSCI Pacific	2.53	43.99	6.63	10.19	6.44
MSCI Emerging Markets Index	2.29	58.39	6.48	12.07	3.65
<b>Domestic Fixed Income</b>					
Barclays Aggregate Bond	-3.37%	0.71%	4.65%	3.10%	3.44%
Barclays Treasury	-4.25	-4.43	4.09	2.23	2.91
Barclays Mortgage	-1.10	-0.09	3.75	2.43	2.83
Barclays Credit	-4.45	7.88	5.95	4.67	4.83
Barclays US TIPS	-1.47	7.54	5.68	3.86	3.44
FTSE High Yield Cash Pay	0.87	23.29	6.43	7.81	6.14
91-Day Treasury Bill	0.03	0.12	1.50	1.19	0.63
<b>Currency*</b>					
Euro vs. \$	-3.95%	7.11%	-1.50%	0.62%	-1.87%
Yen vs. \$	-6.56	-2.30	-1.27	0.34	-2.84
Pound vs. \$	0.93	11.26	-0.55	-0.81	-1.49
<b>Real Estate</b>					
Wilshire REIT Index	8.81%	34.74%	9.04%	4.96%	8.48%
Wilshire RESI	8.83	34.89	9.02	5.15	8.60

\*Positive values indicate dollar depreciation



## Total Fund Overview

### Asset Class Performance

	Assets		Performance (%)					
	(\$Mil)	(%)	QTR	YTD	1-year	3-year	5-year	10-year
U.S. Equity	592.5	15.7	11.57	11.57	72.99	15.46	16.07	13.14
International Equity	487.0	12.9	5.67	5.67	62.26	7.54	11.18	6.61
Global Equity	268.2	7.1	3.56	3.56	45.41	9.99	12.29	
Global Low Volatility	453.8	12.1	2.58	2.58	26.41	6.79	8.03	
Real Estate	390.8	10.4	3.37	3.37	12.54	6.61	5.17	8.48
Global Fixed Income	501.5	13.3	-2.85	-2.85	6.08	5.04	3.80	4.07
High Yield	362.8	9.6	0.66	0.66	22.03	6.22	7.04	6.01
Credit Opportunities	179.2	4.8	-0.30	-0.30	23.58	4.96	6.22	
Global Listed Infra.	195.5	5.2	13.30	13.30	62.01	-2.69	0.38	
Private Equity	285.9	7.6	6.68	6.68	7.00	11.09	11.34	11.11
Cash Equivalents	45.0	1.2	0.02	0.02	0.12	1.50	1.19	0.63
<b>Total Fund</b>	<b>3,762.2</b>	<b>100.0</b>	<b>4.16</b>	<b>4.16</b>	<b>31.00</b>	<b>7.78</b>	<b>8.63</b>	<b>7.53</b>
<b>Asset Allocation Policy</b>			<b>3.59</b>	<b>3.59</b>	<b>35.20</b>	<b>8.67</b>	<b>8.84</b>	<b>7.47</b>
<i>Value Added vs Policy</i>			<i>0.57</i>	<i>0.57</i>	<i>-4.20</i>	<i>-0.89</i>	<i>-0.21</i>	<i>0.06</i>
Actuarial Rate			1.77	1.77	7.25	7.37	7.56	7.87
Wilshire 5000 Index			6.49	6.49	62.23	17.18	16.71	13.82
S&P 500 Index			6.17	6.17	56.35	16.78	16.29	13.91
MSCI ACWI x-U.S. IMI Index			3.77	3.77	51.94	6.51	9.84	5.11
MSCI EAFE Index			3.48	3.48	44.57	6.02	8.85	5.52
Bloomberg Aggregate Bond Index			-3.38	-3.38	0.71	4.65	3.10	3.44
Citigroup High Yield Cash Pay			0.87	0.87	23.29	6.43	7.81	6.14
Wilshire RE Securities Index			8.83	8.83	34.89	9.02	5.15	8.60
91-Day Treasury Bill			0.02	0.02	0.12	1.49	1.18	0.62

### Total Fund Asset Growth

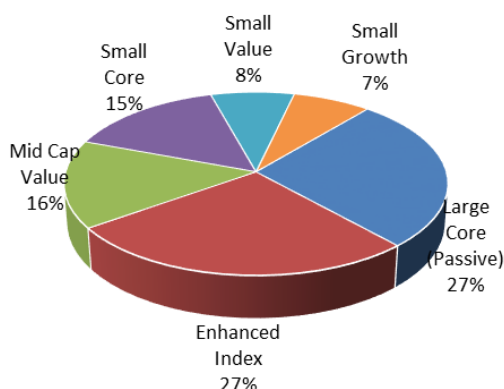
	Beg. Mkt Value (\$Millions)	Net Contrib.	Net Distrib.	Investment Fees	Investment Gain/Loss	End Mkt Value	Total Return
<b>1Q17</b>	3,337.8	36.2	74.6	2.6	140.0	3,436.7	4.15%
<b>2Q17</b>	3,436.7	24.9	68.7	3.2	86.6	3,476.4	2.46%
<b>3Q17</b>	3,476.4	47.8	84.0	3.5	110.0	3,546.6	3.10%
<b>4Q17</b>	3,546.6	31.1	74.1	3.3	107.5	3,607.8	3.02%
<b>1Q18</b>	3,607.8	31.9	74.7	3.1	(37.9)	3,524.0	-1.09%
<b>2Q18</b>	3,524.0	27.2	71.0	3.6	68.0	3,544.4	1.83%
<b>3Q18</b>	3,544.4	31.6	75.1	3.3	101.0	3,598.8	2.74%
<b>4Q18</b>	3,598.8	27.5	73.9	3.5	(274.6)	3,274.3	-7.66%
<b>1Q19</b>	3,274.3	32.4	71.8	3.2	292.5	3,524.2	8.90%
<b>2Q19</b>	3,524.2	27.7	76.6	3.4	108.0	3,579.9	3.04%
<b>3Q19</b>	3,579.9	32.8	76.2	3.2	20.4	3,553.7	0.49%
<b>4Q19</b>	3,553.7	27.7	79.8	3.6	154.3	3,653.6	4.31%
<b>1Q20</b>	3,653.6	32.7	75.8	3.8	(570.4)	3,036.3	-15.91%
<b>2Q20</b>	3,036.3	28.3	76.4	3.2	337.8	3,322.8	11.03%
<b>3Q20</b>	3,322.8	31.5	77.0	3.1	115.4	3,389.6	3.46%
<b>4Q20</b>	3,389.6	33.0	76.5	3.4	322.3	3,664.9	9.49%
<b>1Q21</b>	3,664.9	27.3	81.3	3.7	155.0	3,762.2	4.16%

- At the end of the first quarter of 2021, the Fund's market value was \$3,762.2 million, which represented an increase of \$97 million in total net asset value over the previous quarter. The change in the Fund's value was driven by \$27.3 million in net contributions, \$155 million investment gain, \$81.3 million in net distributions and \$3.7 million in investment management fees.

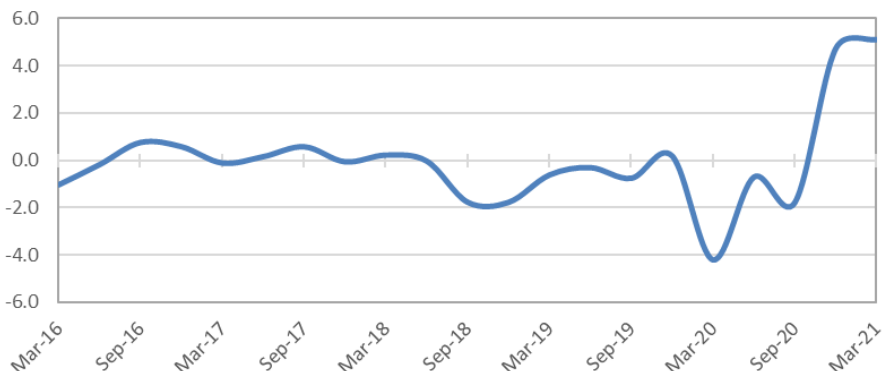


## U.S. Equity Overview

U.S. Equity Structure



U.S. Equity Composite Quarterly Excess Return



## Composite

	Assets		Performance				
	(Millions)	QTR	YTD	1-year	3-year	5-year	10-year
<b>Total U.S. Equity (Gross)</b>	<b>\$ 592.5</b>	<b>11.68</b>	<b>11.68</b>	<b>73.70</b>	<b>15.95</b>	<b>16.51</b>	<b>13.55</b>
<b>Total U.S. Equity (Net)</b>		<b>11.57</b>	<b>11.57</b>	<b>72.99</b>	<b>15.46</b>	<b>16.07</b>	<b>13.14</b>
Custom Benchmark <sup>1</sup>		6.49	6.49	62.23	17.18	16.71	13.82
<i>Net of Fee Value Added vs Benchmark</i>		<i>5.09</i>	<i>5.09</i>	<i>10.76</i>	<i>-1.72</i>	<i>-0.64</i>	<i>-0.68</i>
<b>Small Cap Composite</b>	<b>\$ 180.4</b>	<b>16.09</b>	<b>16.09</b>	<b>89.35</b>	<b>12.72</b>	<b>15.27</b>	<b>11.24</b>
Wilshire 5000 Index		6.49	6.49	62.23	17.18	16.71	13.82
S&P 500 Index		6.17	6.17	56.35	16.78	16.29	13.91
Russell 2000 Index		12.70	12.70	94.85	14.76	16.35	11.68

## U.S. Equity Managers

	Assets		Performance (%)				Since Inception	Inception Date
	(Millions)	QTR	YTD	1-year	3-year	5-year		
<b>Large Core - Passive</b>								
<b>Northern Trust S&amp;P 500 (Gross)</b>	<b>\$ 161.0</b>	<b>6.17</b>	<b>6.17</b>	<b>56.12</b>	<b>16.75</b>	<b>16.27</b>	<b>10.74</b>	<b>Dec-94</b>
<b>Northern Trust S&amp;P 500 (Net)</b>		<b>6.17</b>	<b>6.17</b>	<b>56.11</b>	<b>16.75</b>	<b>16.27</b>	<b>10.71</b>	<b>Dec-94</b>
S&P 500 Index		6.17	6.17	56.35	16.78	16.29	10.67	Dec-94
<i>Net of Fee Value Added vs Benchmark</i>		<i>0.00</i>	<i>0.00</i>	<i>-0.24</i>	<i>-0.03</i>	<i>-0.02</i>	<i>0.04</i>	
<b>Enhanced Index</b>								
<b>T. Rowe Price (Gross)</b>	<b>\$ 159.2</b>	<b>5.64</b>	<b>5.64</b>	<b>58.30</b>	<b>17.61</b>	<b>17.47</b>	<b>10.92</b>	<b>Mar-06</b>
<b>T. Rowe Price (Net)</b>		<b>5.56</b>	<b>5.56</b>	<b>57.83</b>	<b>17.26</b>	<b>17.12</b>	<b>10.59</b>	<b>Mar-06</b>
S&P 500 Index		6.17	6.17	56.35	16.78	16.29	10.02	Mar-06
<i>Net of Fee Value Added vs Benchmark</i>		<i>-0.61</i>	<i>-0.61</i>	<i>1.47</i>	<i>0.48</i>	<i>0.83</i>	<i>0.57</i>	
<b>Information Ratio</b>				<b>0.67</b>	<b>0.37</b>	<b>0.61</b>		
<b>Sharpe Ratio</b>				<b>3.21</b>	<b>0.82</b>	<b>1.03</b>		

<sup>1</sup> Domestic Equity Custom Benchmark: Wilshire 5000 Index (3q99 – Present); S&P 500 Index (1q90 – 2q99).



## U.S. Equity Overview (Continued)

### U.S. Equity Managers

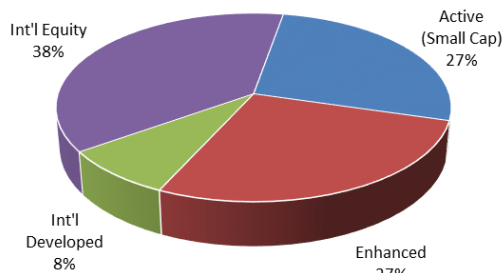
	Assets (Millions)	Performance (%)					Since Inception	Inception Date
		QTR	YTD	1-year	3-year	5-year		
<b>Small Core - Active</b>								
Systematic Financial (Gross)	\$ 89.0	20.68	20.68	87.62	11.14	15.79	12.38	Jun-03
Systematic Financial (Net)		20.45	20.45	86.06	10.20	14.82	11.55	Jun-03
Russell 2000 Index		12.70	12.70	94.85	14.76	16.35	10.57	Jun-03
<i>Net of Fee Value Added vs Benchmark</i>		7.75	7.75	-8.79	-4.56	-1.53	0.98	
<b>Information Ratio</b>				-0.48	-0.64	-0.24		
<b>Sharpe Ratio</b>				5.00	0.35	0.67		
<b>Small Value - Active</b>								
Channing Capital Management (Gross) *	\$ 47.1	15.15	15.15	103.84	12.91	14.50	10.19	Oct-13
Channing Capital Management (Net) *		14.91	14.91	101.93	11.84	13.42	9.17	Oct-13
Russell 2000 Value Index		21.17	21.17	97.05	11.57	13.56	9.05	Oct-13
<i>Net of Fee Value Added vs Benchmark</i>		-6.25	-6.25	4.87	0.27	-0.15	0.12	
<b>Information Ratio</b>				0.25	0.03	-0.02		
<b>Sharpe Ratio</b>				4.31	0.36	0.52		
<b>Small Growth - Active</b>								
Redwood Investments (Gross) *	\$ 44.3	9.47	9.47	82.98	18.66		16.00	Sep-16
Redwood Investments (Net) *		9.30	9.30	81.76	17.84		15.29	Sep-16
Russell 2000 Growth Index		4.88	4.88	90.20	17.16		17.70	
<i>Net of Fee Value Added vs Benchmark</i>		4.43	4.43	-8.44	0.68		-2.41	
<b>Information Ratio</b>				-0.43	0.06	--		
<b>Sharpe Ratio</b>				4.96	0.74	--		
<b>Mid Cap Value - Active</b>								
Smith Graham Mid Cap Value (Gross) *	\$ 91.9	25.79	25.79	112.91	12.99		12.07	Dec-17
Smith Graham Mid Cap Value (Net) *		25.58	25.58	111.33	12.14		11.27	Dec-17
Russell Midcap Index		8.14	8.14	73.64	14.73		13.37	
<i>Net of Fee Value Added vs Benchmark</i>		17.44	17.44	37.69	-2.59		-2.09	
<b>Information Ratio</b>				2.27	-0.20	--		
<b>Sharpe Ratio</b>				5.87	0.36	--		

- ◆ The Fund's domestic equity composite generated a return of 11.57% (net of fees) during the first quarter of 2021, outperforming the Wilshire 5000 Total Market Index, which returned 6.49%. Relative performance was positive during the quarter for Systematic Financial, Redwood Investments and Smith Graham, while negative for Channing Capital. Following this quarter's results, the domestic equity composite is trailing its benchmark over the three-, five- and ten- year periods but is outperforming over the quarter- and one- year periods, trending in a better direction.

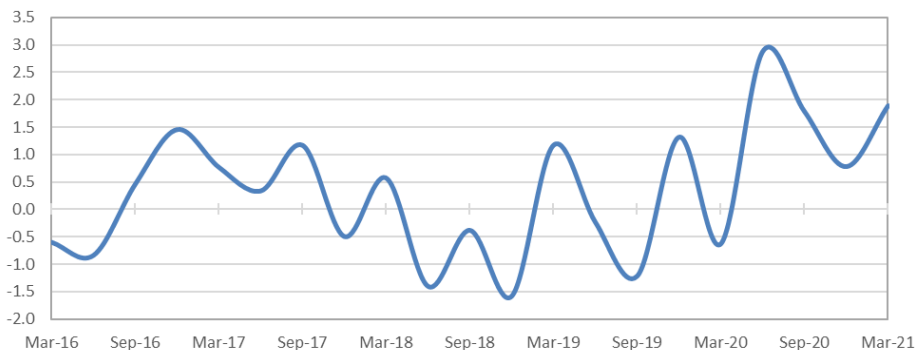


## International Equity Overview

International Equity Structure



International Equity Composite  
 Quarterly Excess Return



### International Equity Composite

	Assets		Performance				
	(Millions)	QTR	YTD	1-year	3-year	5-year	10-year
<b>Total International Equity (Gross)</b>	<b>\$ 487.0</b>	<b>5.81</b>	<b>5.81</b>	<b>63.21</b>	<b>8.07</b>	<b>11.71</b>	<b>7.08</b>
<b>Total International Equity (Net)</b>		<b>5.67</b>	<b>5.67</b>	<b>62.26</b>	<b>7.54</b>	<b>11.18</b>	<b>6.61</b>
Custom Benchmark <sup>1</sup>		3.77	3.77	51.94	6.51	9.84	5.11
<i>Net of Fee Value Added vs Benchmark</i>		<i>1.89</i>	<i>1.89</i>	<i>10.32</i>	<i>1.02</i>	<i>1.33</i>	<i>1.50</i>
MSCI ACWI x-US IMI (Net)		3.77	3.77	51.94	6.51	9.84	5.11
MSCI ACWI x-US (Net)		3.49	3.49	49.41	6.51	9.76	4.93
MSCI EAFE (Net)		3.48	3.48	44.57	6.02	8.85	5.52
MSCI Emerging Markets		2.29	2.29	58.39	6.48	12.07	3.65

### International Equity Managers

	Assets (Millions)	Performance (%)					Since Inception	Inception Date
		QTR	YTD	1-year	3-year	5-year		
<b>Int'l Small Cap - Active</b>								
<b>Acadian International (Gross)</b>	<b>\$ 130.2</b>	<b>9.01</b>	<b>9.01</b>	<b>72.11</b>	<b>6.77</b>	<b>12.91</b>	<b>9.23</b>	<b>Mar-89</b>
<b>Acadian International (Net)</b>		<b>8.86</b>	<b>8.86</b>	<b>71.19</b>	<b>6.13</b>	<b>12.28</b>	<b>8.77</b>	<b>Mar-89</b>
Custom Benchmark		5.53	5.53	69.82	6.61	10.40		Mar-89
<i>Net of Fee Value Added vs Benchmark</i>		<i>3.33</i>	<i>3.33</i>	<i>1.37</i>	<i>-0.47</i>	<i>1.88</i>		
<b>Information Ratio</b>				<b>0.18</b>	<b>-0.17</b>	<b>0.90</b>		
<b>Sharpe Ratio</b>				<b>4.75</b>	<b>0.22</b>	<b>0.64</b>		

<sup>2</sup> International Equity Custom Benchmark: MSCI ACWI x-US IMI (2q10 – Present); MSCI ACWI x-US (1q99 – 1q10); Wilshire Non-US/Non-SA (2q96 – 4q98); MSCI EAFE (4q89 – 1q96)

<sup>3</sup> Acadian Custom Benchmark: MSCI ACWI x-US Small Cap (3q09 – Present); MSCI EAFE Small Cap (4q99 – 2q09); S&P/Citigroup Eur/Pac EMI Index (2q96 – 3q99); MSCI EAFE (2q89 – 1q96). Performance Objective: Custom Benchmark +2% (1q05 – Present); +1% (2q89 – 4q04).



## International Equity Overview (Continued)

### International Equity Managers

	Assets (Millions)	QTR	Performance (%)			Since Inception	Inception Date
			YTD	1-year	3-year	5-year	
<b>Int'l Enhanced Index</b>							
AQR Capital Management (Gross)	\$ 133.2	7.05	7.05	57.88	6.48	10.67	5.07 Mar-06
AQR Capital Management (Net)		6.91	6.91	56.82	5.88	10.05	4.53 Mar-06
Custom Benchmark		3.49	3.49	49.41	6.51	9.76	3.87 Mar-06
<i>Net of Fee Value Added vs Benchmark</i>		3.41	3.41	7.40	-0.63	0.29	0.66
<b>Information Ratio</b>				1.70	-0.19	0.10	
<b>Sharpe Ratio</b>				3.98	0.23	0.57	
<b>Int'l Developed</b>							
Ativo International Developed (Gross) *	\$ 40.6	4.81	4.81	44.47	5.82		4.80 Dec-17
Ativo International Developed (Net) *		4.66	4.66	43.63	5.17		4.19 Dec-17
MSCI EAFE Index		3.48	3.48	44.57	6.02		5.05
<i>Net of Fee Value Added vs Benchmark</i>		1.18	1.18	-0.93	-0.85		-0.85
<b>Information Ratio</b>				-0.11	-0.16	--	
<b>Sharpe Ratio</b>				2.93	0.20	--	
<b>Int'l Equity (Active)</b>							
Baillie Gifford (Gross)	\$ 90.1	1.93	1.93	63.29			23.42 Mar-19
Baillie Gifford (Net)		1.81	1.81	62.44			22.91 Mar-19
MSCI ACWI x-US (Net)		3.49	3.49	49.41			12.31
<i>Net of Fee Value Added vs Benchmark</i>		-1.69	-1.69	13.02			10.60
<b>Information Ratio</b>				--	--	--	
<b>Sharpe Ratio</b>				--	--	--	
<b>Int'l Equity (Active)</b>							
Earnest Partners (Gross) *	\$ 92.9	4.09	4.09	66.04			14.41 Mar-19
Earnest Partners (Net) *		3.95	3.95	65.06			13.79 Mar-19
MSCI ACWI x-US (Net)		3.49	3.49	49.41			12.31
<i>Net of Fee Value Added vs Benchmark</i>		0.45	0.45	15.65			1.48
<b>Information Ratio</b>				--	--	--	
<b>Sharpe Ratio</b>				--	--	--	

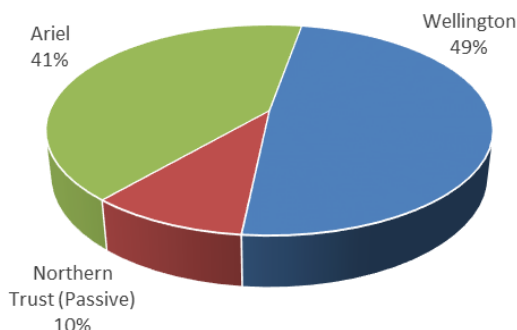
- ◆ The Fund's international equity composite returned 5.67% (net of fees) during the first quarter of 2021, outperforming the MSCI ACWI x-US Investable Market Index (IMI) which returned 3.77%. Active management was consistent for the Fund's international equity program with the majority of managers outperforming their respective benchmarks and only one underperforming. The program's long-standing small cap international equity mandate managed by Acadian outperformed its benchmark by a robust margin. The program's positive performance was buoyed by AQR Capital and lead to composite outperformance for the quarter. The recently funded Earnest Partners portfolio is outperforming its benchmark over all time periods back through inception. The international equity composite is currently outperforming against its benchmark for all time periods.

<sup>5</sup> AQR Custom Benchmark: MSCI ACWI x-US (2q10 – Present); MSCI EAFE (1q06 – 1q10); Performance Objective: Custom Benchmark + 1.5%.



## Global Equity Overview

Global Equity Structure



### Global Equity Composite

	Assets	Performance					
	(Millions)	QTR	YTD	1-year	3-year	5-year	10-year
<b>Total Global Equity (Gross)</b>	<b>\$ 268.2</b>	<b>3.70</b>	<b>3.70</b>	<b>46.22</b>	<b>10.60</b>	<b>12.82</b>	
<b>Total Global Equity (Net)</b>		<b>3.56</b>	<b>3.56</b>	<b>45.41</b>	<b>9.99</b>	<b>12.29</b>	
MSCI ACWI (Net)		4.57	4.57	54.60	12.07	13.21	
<i>Net of Fee Value Added vs Index</i>		<i>-1.01</i>	<i>-1.01</i>	<i>-9.19</i>	<i>-2.09</i>	<i>-0.92</i>	
MSCI ACWI IMI (Net)		5.14	5.14	57.58	11.90	13.21	9.15
MSCI ACWI (Net)		4.57	4.57	54.60	12.07	13.21	9.14
MSCI World (Net)		4.92	4.92	54.03	12.81	13.36	9.88

### Global Equity Managers

	Assets	Performance (%)					Since	Inception
	(Millions)	QTR	YTD	1-year	3-year	5-year	Inception	Date
<b>Global Equity - Active</b>								
<b>Wellington (Gross)</b>	<b>\$ 131.1</b>	<b>2.87</b>	<b>2.87</b>	<b>57.62</b>	<b>12.28</b>	<b>13.80</b>	<b>13.65</b>	<b>Aug-12</b>
<b>Wellington (Net)</b>		<b>2.72</b>	<b>2.72</b>	<b>56.68</b>	<b>11.63</b>	<b>13.13</b>	<b>13.02</b>	<b>Aug-12</b>
MSCI ACWI (Net)		4.57	4.57	54.60	12.07	13.21	11.11	Aug-12
<i>Net of Fee Value Added vs Benchmark</i>		<i>-1.85</i>	<i>-1.85</i>	<i>2.08</i>	<i>-0.45</i>	<i>-0.08</i>	<i>1.90</i>	
<b>Information Ratio</b>				<b>0.31</b>	<b>-0.11</b>	<b>-0.02</b>		
<b>Sharpe Ratio</b>				<b>3.45</b>	<b>0.53</b>	<b>0.77</b>		
<b>Global Equity - Active</b>								
<b>Ariel (Gross) *</b>	<b>\$ 111.1</b>	<b>4.32</b>	<b>4.32</b>	<b>31.40</b>	<b>8.18</b>		<b>7.75</b>	<b>Dec-17</b>
<b>Ariel (Net) *</b>		<b>4.17</b>	<b>4.17</b>	<b>30.59</b>	<b>7.51</b>		<b>7.12</b>	<b>Dec-17</b>
MSCI ACWI (Net)		4.57	4.57	54.60	12.07		10.76	
<i>Net of Fee Value Added vs Benchmark</i>		<i>-0.40</i>	<i>-0.40</i>	<i>-24.01</i>	<i>-4.56</i>		<i>-3.64</i>	
<b>Information Ratio</b>				<b>-2.26</b>	<b>-0.59</b>	<b>--</b>		
<b>Sharpe Ratio</b>				<b>2.26</b>	<b>0.42</b>	<b>--</b>		
<b>Global Equity - Passive</b>								
<b>Northern Trust (Gross)</b>	<b>\$ 26.0</b>	<b>5.15</b>	<b>5.15</b>	<b>57.93</b>	<b>12.37</b>	<b>13.74</b>	<b>13.51</b>	<b>Oct-15</b>
<b>Northern Trust (Net)</b>		<b>5.15</b>	<b>5.15</b>	<b>57.93</b>	<b>12.34</b>	<b>13.70</b>	<b>13.47</b>	<b>Oct-15</b>
MSCI ACWI IMI (Net)		5.14	5.14	57.58	11.90	13.21	12.98	Oct-15
<i>Net of Fee Value Added vs Benchmark</i>		<i>0.02</i>	<i>0.02</i>	<i>0.35</i>	<i>0.44</i>	<i>0.49</i>	<i>0.49</i>	



## Global Equity Overview (Continued)

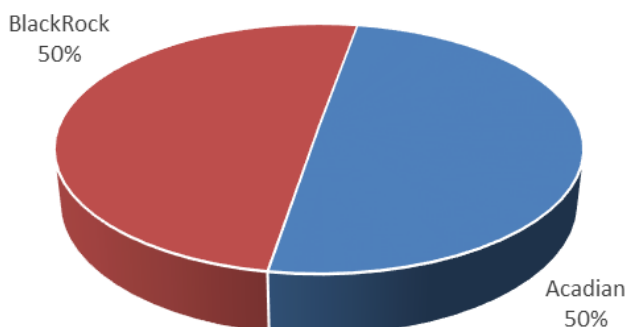
- ◆ The global equity composite is comprised of an actively-managed strategy (with a U.S. bias relative to the benchmark) managed by Wellington. This strategy is complemented by a passively-managed strategy provided by Northern Trust. The composite also added an exposure to the Ariel Global Product strategy three years ago. The current structure favors active management (currently 90% active/10% passive) versus the previous 50%/50% allocation between active and passively managed funds within the composite. During the first quarter, both actively managed mandates trailed their benchmarks. The global equity composite is currently trailing its benchmark over all time periods.





## Global Low Volatility Equity Overview

### Global Low Volatility Structure



### Global Low Volatility Composite

	Assets	Performance					
	(Millions)	QTR	YTD	1-year	3-year	5-year	10-year
<b>Total Global Low Volatility (Gross)</b>	\$ 453.8	2.63	2.63	26.64	7.01	8.22	
<b>Total Global Low Volatility (Net)</b>		2.58	2.58	26.41	6.79	8.03	
MSCI ACWI Minimum Volatility (Net)		1.72	1.72	24.36	7.84	8.30	
<i>Net of Fee Value Added vs Index</i>		0.86	0.86	2.05	-1.04	-0.27	
MSCI ACWI Minimum Volatility (Net)		1.72	1.72	24.36	7.84	8.30	9.07
MSCI World x-US Minimum Volatility (Net)		-0.14	-0.14	19.88	3.57	5.50	6.64
MSCI ACWI (Net)		4.57	4.57	54.60	12.07	13.21	9.14

### Global Equity Managers

	Assets	Performance (%)					Since	Inception
	(Millions)	QTR	YTD	1-year	3-year	5-year	Inception	Date
<b>Global Low Volatility - Active</b>								
<b>Acadian Global Low Vol (Gross)</b>	\$ 226.1	3.47	3.47	28.35	6.06	7.87	7.93	Jun-15
<b>Acadian Global Low Vol (Net)</b>		3.39	3.39	27.92	5.68	7.51	7.58	Jun-15
MSCI ACWI (Net)		4.57	4.57	54.60	12.07	13.21	10.47	Jun-15
<i>Net of Fee Value Added vs MSCI ACWI</i>		-1.18	-1.18	-26.68	-6.39	-5.70	-2.90	
MSCI ACWI Min Vol (Net)		1.72	1.72	24.36	7.84	8.30	8.35	Jun-15
<i>Net of Fee Value Added vs MSCI ACWI Min Vol</i>		1.67	1.67	3.56	-2.16	-0.78	-0.77	
<b>Information Ratio</b>				-2.54	-0.92	-0.92		
<b>Sharpe Ratio</b>				2.14	0.27	0.51		
<b>Global Low Volatility - Passive</b>								
<b>BlackRock Global Low Vol (Gross)</b>	\$ 227.7	1.80	1.80	24.99	7.95	8.56	8.65	Jun-15
<b>BlackRock Global Low Vol (Net)</b>		1.79	1.79	24.94	7.90	8.53	8.62	Jun-15
MSCI ACWI Min Vol (Net)		1.72	1.72	24.36	7.84	8.30	8.35	Jun-15
<i>Net of Fee Value Added vs Benchmark</i>		0.07	0.07	0.58	0.06	0.23	0.28	

\*Acadian Info Ratio/Sharpe Ratio statistics based on MSCI ACWI Min Vol benchmark.



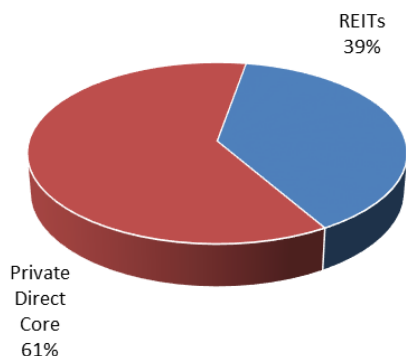
## Global Low Volatility Equity Overview (Continued)

- ◆ In 2015, the Board elected to transfer assets from existing strategies elsewhere in the Fund into two new global low volatility equity portfolios. The first portfolio is actively-managed and run by Acadian. Its primary mandate is to provide the Fund with a better risk/return profile relative to the broad MSCI ACWI, its primary benchmark (the Acadian portfolio's performance is also measured against the MSCI ACWI Minimum Volatility as a secondary benchmark). The second portfolio is a passively-managed index fund provided through BlackRock. Taken together, both funds will add diversification benefits to the existing suite of public equity managers. The global low volatility equity composite currently trails the MSCI ACWI Minimum Volatility Index across longer time-periods but outperformed for the quarter- and one- year periods.

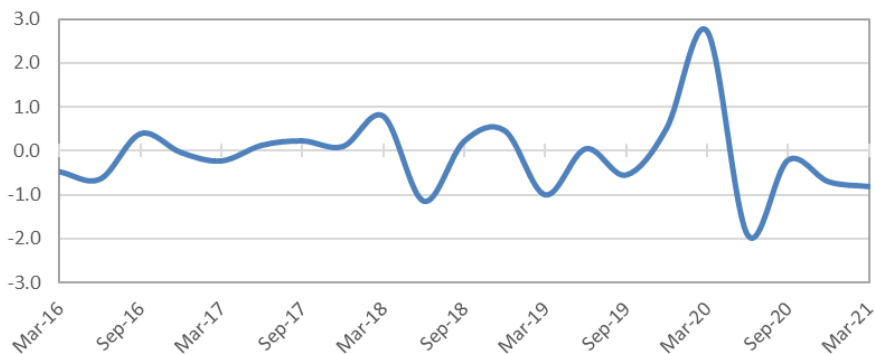


## Real Estate Overview

Real Estate Structure



Total Real Estate Composite  
 Quarterly Excess Return



## Real Estate Composite

	Assets		Performance				
	(Millions)	QTR	YTD	1-year	3-year	5-year	10-year
<b>Total Real Estate (Gross)</b>	<b>\$ 390.8</b>	<b>3.51</b>	<b>3.51</b>	<b>13.18</b>	<b>7.22</b>	<b>5.80</b>	<b>9.21</b>
<b>Total Real Estate (Net)</b>		<b>3.37</b>	<b>3.37</b>	<b>12.54</b>	<b>6.61</b>	<b>5.17</b>	<b>8.48</b>
Custom Benchmark <sup>1</sup>		4.18	4.18	16.56	7.23	5.36	8.59
<i>Net of Fee Value Added vs Benchmark</i>		<i>-0.82</i>	<i>-0.82</i>	<i>-4.02</i>	<i>-0.62</i>	<i>-0.18</i>	<i>-0.11</i>
REIT Strategies	\$ 141.8	8.96	8.96	36.69	10.48	5.85	8.69
Private Core Real Estate	\$ 248.9	0.35	0.35	0.10	4.11	4.80	8.37
Wilshire Real Estate Securities Index		8.83	8.83	34.89	9.02	5.15	8.60
NCREIF Open Diversified Core Equity (Net)		1.91	1.91	1.50	3.97	5.26	8.68

## Real Estate Managers

	Assets (Millions)	QTR	YTD	Performance (%)			Since Inception	Inception Date
				1-year	3-year	5-year		
<b>Real Estate Securities - Public</b>								
<b>Adelante Capital Management (Gross)</b>	<b>\$ 70.5</b>	<b>9.41</b>	<b>9.41</b>	<b>36.36</b>	<b>10.76</b>	<b>6.57</b>	<b>10.28</b>	<b>Sep-01</b>
<b>Adelante Capital Management (Net)</b>		<b>9.26</b>	<b>9.26</b>	<b>35.55</b>	<b>10.12</b>	<b>5.95</b>	<b>9.69</b>	<b>Sep-01</b>
Wilshire Real Estate Securities		8.83	8.83	34.89	9.02	5.15	9.82	Sep-01
<i>Net of Fee Value Added vs Index</i>		<i>0.43</i>	<i>0.43</i>	<i>0.66</i>	<i>1.10</i>	<i>0.80</i>	<i>-0.13</i>	
<b>Information Ratio</b>				<b>0.32</b>	<b>0.49</b>	<b>0.39</b>		
<b>Sharpe Ratio</b>				<b>2.61</b>	<b>0.48</b>	<b>0.31</b>		
<b>CenterSquare (Gross)</b>	<b>\$ 71.3</b>	<b>8.79</b>	<b>8.79</b>	<b>38.52</b>			<b>10.06</b>	<b>May-18</b>
<b>CenterSquare (Net)</b>		<b>8.66</b>	<b>8.66</b>	<b>37.84</b>			<b>9.57</b>	<b>May-18</b>
Wilshire Real Estate Securities		8.83	8.83	34.89			7.67	May-18
<i>Net of Fee Value Added vs Index</i>		<i>-0.17</i>	<i>-0.17</i>	<i>2.95</i>			<i>1.90</i>	
<b>Information Ratio</b>				<b>0.96</b>	--	--		
<b>Sharpe Ratio</b>				<b>2.63</b>	--	--		

<sup>6</sup> Real Estate Custom Benchmark: 50% Wilshire RESI / 39% NCREIF ODCE NOF/11% Invesco Custom Benchmark (4q13 – Present); Wilshire RESI (4q89 – 4q10).



## Real Estate Overview (Continued)

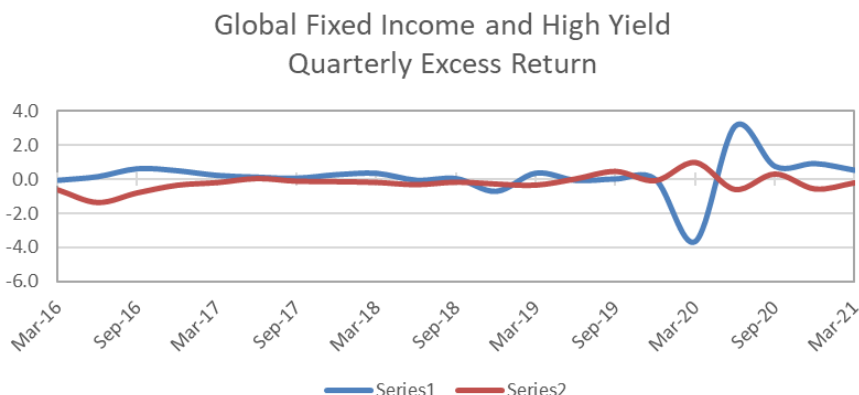
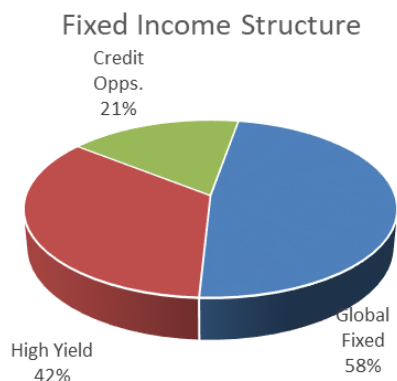
### Real Estate Managers

	Assets (Millions)	Performance (%)					Since Inception	Inception Date
		QTR	YTD	1-year	3-year	5-year		
<b>Direct Core Real Estate - Private</b>								
Heitman America Real Estate Trust (Gross)	\$ 83.9	2.67	2.67	3.57	3.01	5.10	10.05	Aug-10
Heitman America Real Estate Trust (Net)		2.45	2.45	2.64	2.10	4.17	9.04	Aug-10
NCREIF Open-End Diversified Core (Net)		1.91	1.91	1.50	3.97	5.26	9.26	Aug-10
<i>Net of Fee Value Added vs Index</i>		0.54	0.54	1.14	-1.88	-1.10	-0.22	
Invesco Core Real Estate USA (Gross)	\$ 69.7	1.74	1.74	-0.86	5.28	7.27	10.61	Aug-10
Invesco Core Real Estate USA (Net)		1.52	1.52	-1.71	4.39	6.35	9.65	Aug-10
NCREIF Open-End Diversified Core (Net)		1.91	1.91	1.50	3.97	5.26	9.26	Aug-10
<i>Net of Fee Value Added vs Index</i>		-0.39	-0.39	-3.21	0.42	1.09	0.39	
AEW Partners Real Estate Fund IX (Gross)	\$ 1.7							Apr-21
AEW Partners Real Estate Fund IX (Net)								Apr-21
NCREIF Open-End Diversified Core (Net)								Apr-21
<i>Net of Fee Value Added vs Index</i>								
Virtus Real Estate Capital III (Gross)	\$ 23.5						0.00	Feb-21
Virtus Real Estate Capital III (Net)							0.00	Feb-21
NCREIF Open-End Diversified Core (Net)							1.91	Feb-21
<i>Net of Fee Value Added vs Index</i>							-1.91	
Invesco II	\$ 70.1	-1.61	-1.61	1.78	7.84	4.11	2.77	Oct-13

- ◆ The Fund's total real estate composite is comprised of both public market real estate securities (REITs) and private investment in direct core real estate. The total segment returned 3.37% (net of fees) during the first quarter, trailing its benchmark (split 50% Wilshire Real Estate Securities Index, 39% NCREIF Open-End Diversified Core Index and 11% Invesco II Custom Benchmark) which returned 4.18%. On the public side, one REIT outperformed and the other underperformed the Wilshire Real Estate Securities Index. On the private side, it was the same story with one manager outperforming and the other underperforming the NCREIF ODCE Index. Two new managers were added to the private portfolio this quarter, AEW Partners and Virtus RE Capital. Currently, the Fund's total real estate composite trails its benchmark over all time periods.



## Fixed Income Overview



## Fixed Income Composites

	Assets (Millions)	QTR	YTD	1-year	3-year	5-year	10-year
<b>Global Fixed Income (Gross)</b>	\$ 501.5	-2.80	-2.80	6.30	5.26	4.02	4.27
<b>Global Fixed Income (Net)</b>		-2.85	-2.85	6.08	5.04	3.80	4.07
Bloomberg Aggregate Bond Index		-3.38	-3.38	0.71	4.65	3.10	3.44
<i>Net of Fee Value Added vs Benchmark</i>		0.53	0.53	5.37	0.39	0.70	0.63
<b>High Yield (Gross)</b>	\$ 362.8	0.78	0.78	22.56	6.73	7.56	6.52
<b>High Yield (Net)</b>		0.66	0.66	22.03	6.22	7.04	6.01
Custom Benchmark <sup>1</sup>		0.87	0.87	23.29	6.43	7.81	6.14
<i>Net of Fee Value Added vs Benchmark</i>		-0.21	-0.21	-1.25	-0.21	-0.77	-0.12
Bloomberg Aggregate		-3.38	-3.38	0.71	4.65	3.10	3.44
Citigroup High Yield Cash Pay		0.87	0.87	23.29	6.43	7.81	6.14
BofA ML High Yield Master II		0.90	0.90	23.31	6.53	7.94	6.31

## Global Fixed Income Managers

	Assets (Millions)	QTR	YTD	1-year	3-year	5-year	Since Inception	Inception Date
<b>Global Fixed Income</b>								
<b>Securian Asset Mgmt. (Gross)</b>	\$ 218.4	-2.44	-2.44	7.28	4.99	4.11	4.81	May-07
<b>Securian Asset Mgmt. (Net)</b>		-2.48	-2.48	7.09	4.81	3.92	4.63	May-07
Bloomberg Aggregate		-3.38	-3.38	0.71	4.65	3.10	4.25	May-07
<i>Net of Fee Value Added vs Benchmark</i>		0.89	0.89	6.38	0.16	0.82	0.38	
<b>Information Ratio</b>				4.21	0.04	0.29		
<b>Sharpe Ratio</b>				1.45	0.62	0.61		
<b>Aberdeen (Gross)</b>	\$ 217.3	-3.06	-3.06	6.26	5.78	4.19	5.07	Apr-07
<b>Aberdeen (Net)</b>		-3.12	-3.12	6.01	5.54	3.95	4.85	Apr-07
Bloomberg Aggregate		-3.38	-3.38	0.71	4.65	3.10	4.12	Apr-07
<i>Net of Fee Value Added vs Benchmark</i>		0.26	0.26	5.30	0.88	0.85	0.73	
<b>Information Ratio</b>				3.41	0.44	0.54		
<b>Sharpe Ratio</b>				1.19	0.90	0.71		

<sup>7</sup> High Yield Custom Benchmark: Citigroup High Yield Cash Pay (4q99 – Present); Citigroup High Yield Composite Index (1q97 – 3q99).



## Fixed Income Overview (Continued)

Global Fixed Income Managers								
	Assets (Millions)	Performance (%)					Since Inception	Inception Date
		QTR	YTD	1-year	3-year	5-year		
<b>Global Fixed Income</b>								
Garcia Hamilton (Gross)	\$ 65.9	-3.10	-3.10	3.34	4.46	3.27	3.80	Oct-13
Garcia Hamilton (Net)		-3.16	-3.16	3.08	4.19	3.01	3.55	Oct-13
Bloomberg Aggregate		-3.38	-3.38	0.71	4.65	3.10	3.24	Oct-13
<i>Net of Fee Value Added vs Benchmark</i>		<i>0.21</i>	<i>0.21</i>	<i>2.37</i>	<i>-0.46</i>	<i>-0.10</i>	<i>0.30</i>	
<b>Information Ratio</b>				<b>2.00</b>	<b>-0.33</b>	<b>-0.08</b>		
<b>Sharpe Ratio</b>				<b>0.76</b>	<b>0.79</b>	<b>0.60</b>		

- ◆ The Fund's global fixed income segment returned -2.85% (net of fees) during the first quarter of 2021, outperforming the Bloomberg Aggregate Bond Index, which returned -3.38%. The segment is comprised of three actively managed strategies: (1) Securian Asset Management (previously Advantus Capital Management), (2) Aberdeen Asset Management, and (3) Garcia Hamilton. During the period, all three actively managed portfolios outperformed the Bloomberg Aggregate Index. Securian and Aberdeen (both with early 2007 inception dates) manage roughly the same level of assets for the Fund while the Garcia Hamilton portfolio has a smaller mandate. Therefore, quarter to quarter performance is largely driven by the results of the Securian and Aberdeen accounts while the Garcia Hamilton account does not have the ability to move the needle as much, so to speak, on account of its smaller size. Following this period's results, the global fixed income composite now outperforms the Bloomberg Aggregate over all time periods.



## Fixed Income Overview (Continued)

### High Yield/Credit Opportunities Managers

	Assets (Millions)	Performance (%)					Since Inception	Inception Date
		QTR	YTD	1-year	3-year	5-year		
<b>High Yield</b>								
Oaktree Capital Management (Gross)	\$ 182.7	0.88	0.88	23.69	6.36	7.35	7.21	Dec-96
Oaktree Capital Management (Net)		0.76	0.76	23.09	5.83	6.83	6.44	Dec-96
Custom Benchmark		0.87	0.87	23.29	6.43	7.81		Dec-96
<i>Net of Fee Value Added vs Benchmark</i>		-0.11	-0.11	-0.20	-0.59	-0.98		
<b>Information Ratio</b>				-0.22	-0.51	-0.95		
<b>Sharpe Ratio</b>				3.41	0.48	0.77		
<b>BlackRock High Yield (Gross)</b>								
BlackRock High Yield (Gross)	\$ 180.1	0.67	0.67	21.40	7.09	7.75	6.95	Sep-06
BlackRock High Yield (Net)		0.56	0.56	20.94	6.58	7.25	6.47	Sep-06
Citigroup High Yield Cash Pay		1.12	1.12	24.50	7.48	8.88	7.99	Sep-06
<i>Net of Fee Value Added vs Benchmark</i>		-0.56	-0.56	-3.55	-0.90	-1.63	-1.52	
<b>Information Ratio</b>				-0.37	0.05	-0.21		
<b>Sharpe Ratio</b>				2.08	0.53	0.79		
<b>Credit Opportunities</b>								
Neuberger Berman (Gross)	\$ 179.2	-0.23	-0.23	23.95	5.28	6.52	6.92	Jan-16
Neuberger Berman (Net)		-0.30	-0.30	23.58	4.96	6.22	6.64	Jan-16
Custom Benchmark		-0.64	-0.64	20.00	4.92	6.11	6.74	Jan-16
<i>Net of Fee Value Added vs Benchmark</i>		0.34	0.34	3.59	0.03	0.11	-0.11	
<b>Information Ratio</b>				2.12	0.02	0.06		
<b>Sharpe Ratio</b>				3.08	0.32	0.59		

- ◆ The high yield composite returned 0.66% (net of fees) during the first quarter, trailing the Citigroup High Yield Cash Pay Index, which returned 0.87%. The composite is currently split equally between the two actively-managed strategies. During the period, both strategies trailed the benchmark. The high yield composite is currently trailing its benchmark over all time periods.

<sup>8</sup> Oaktree Capital Management Performance Objective: Citigroup High Yield Cash Pay + 1% (4q99 – Present); Citigroup High Yield Composite Index + 1% (2q97 – Present).



## Private Equity Overview

### Private Equity Composite

	Total Commitment	Commit. Year	Cumulative Capital Called		Cumulative Distributions	Capital Balance	Multiple	Calculated IRR
Hamilton Lane Fund VII LP (Series A)	30,000,000	2010	27,569,673	91.9%	32,613,901	12,195,040	1.63	10.9%
Hamilton Lane Fund VII LP (Series B)	20,000,000	2010	18,031,161	90.2%	13,837,632	7,418,365	1.18	3.3%
<i>Hamilton Lane Fund VII LP (Total)</i>	<i>50,000,000</i>		<i>45,600,834</i>	<i>91.2%</i>	<i>46,451,533</i>	<i>19,613,405</i>	<i>1.45</i>	<i>5.7%</i>
Hamilton Lane Secondary Fund II LP	25,000,000	2009	22,058,532	88.2%	31,007,605	529,889	1.43	13.6%
Hamilton Lane Secondary Fund III LP	30,000,000	2012	23,372,292	77.9%	23,738,447	6,654,920	1.30	9.8%
Hamilton Lane Secondary Fund IV LP	30,000,000	2017	25,907,343	86.4%	9,573,885	24,134,855	1.30	15.7%
Hamilton Lane Secondary Fund V LP	40,000,000	2020	11,375,000	28.4%	-	15,254,269	1.34	56.6%
Hamilton Lane Fund VIII LP (Global)	30,000,000	2012	22,162,244	73.9%	8,792,766	18,913,548	1.25	5.0%
GCM Grosvenor - Partnership, L.P.	75,000,000	2011	85,417,430	113.9%	102,385,430	35,978,512	1.62	14.0%
GCM Grosvenor - Partnership II, L.P. (2014)	60,000,000	2014	68,196,751	113.7%	35,323,333	59,456,668	1.39	12.9%
GCM Grosvenor - Partnership II, L.P. (2015)	30,000,000	2015	30,173,173	100.6%	5,824,948	38,207,689	1.46	15.1%
GCM Grosvenor - Partnership II, L.P. (2017)	30,000,000	2018	16,979,304	56.6%	794,423	16,949,016	1.05	4.0%
Fairview Capital - Lone Star Fund I	40,000,000	2015	34,053,847	85.1%	3,616,399	40,174,157	1.29	9.7%
Fairview Capital - Lone Star Fund II	30,000,000	2018	8,747,396	29.2%	-	10,042,959	1.15	-5.5%
<b>Total Private Equity Program</b>	<b>470,000,000</b>	<b>2009</b>	<b>394,044,146</b>	<b>83.8%</b>	<b>267,508,768</b>	<b>285,909,887</b>	<b>1.40</b>	<b>11.8%</b>

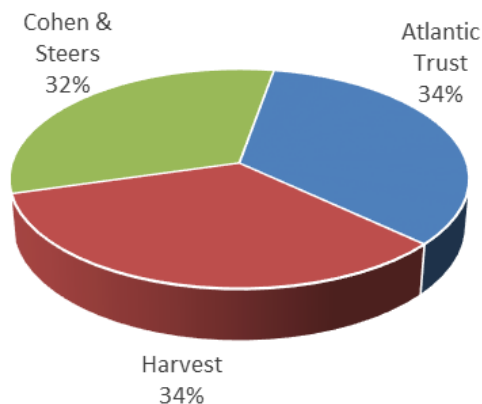
- Multiple calculation = (market value + distributions) / capital called
- Internal Rate of Return shown here is calculated by Wilshire based on cumulative cash flows and annualized since inception.





## Global Listed Infrastructure Overview

### Global Listed Infrastructure



### MLP Composite

	Assets		Performance				
	(Millions)	QTR	YTD	1-year	3-year	5-year	10-year
Global Listed Infra (Gross)	\$ 195.5	13.46	13.46	63.25	-2.01	1.06	
Global Listed Infra (Net)		13.30	13.30	62.01	-2.69	0.38	
GLI Custom Benchmark		17.35	17.35	88.62	-5.35	-2.75	
<i>Net of Fee Value Added vs Index</i>		-4.06	-4.06	-26.61	2.66	3.14	
Alerian MLP Index		21.95	21.95	103.13	-2.98	-1.30	-0.93
S&P MLP Index		17.71	17.71	73.99	-10.83	-7.62	-7.14
Bloomberg Commodities Index		6.92	6.92	35.04	-0.20	2.31	-6.28
FTSE Global Core Infra 50/50 Idx Net		4.08					

### Managers

	Assets (Millions)	Performance (%)					Since Inception	Inception Date
		QTR	YTD	1-year	3-year	5-year		
<b>MLPs</b>								
Harvest Fund Advisors (Gross)	\$ 66.3	18.89	18.89	76.67	2.02	3.34	3.60	
Harvest Fund Advisors (Net)		18.69	18.69	75.14	1.21	2.55	2.86	Dec-11
Alerian MLP Index		21.95	21.95	103.13	-2.98	-1.30	-1.77	Dec-11
<i>Net of Fee Value Added vs Benchmark</i>		-3.26	-3.26	-27.99	4.20	3.85	4.62	
<b>Information Ratio</b>				-0.87	0.30	0.35		
<b>Sharpe Ratio</b>				2.06	-0.01	0.05		
Atlantic Trust CIBC (Gross)	\$ 66.6	17.52	17.52	83.85	0.38	2.72	3.61	
Atlantic Trust CIBC (Net)		17.36	17.36	82.62	-0.22	2.13	3.03	Dec-11
Alerian MLP Index		21.95	21.95	103.13	-2.98	-1.30	-1.77	Dec-11
<i>Net of Fee Value Added vs Benchmark</i>		-4.59	-4.59	-20.51	2.76	3.43	4.80	
<b>Information Ratio</b>				-1.02	0.52	1.02		
<b>Sharpe Ratio</b>				1.87	-0.04	0.03		



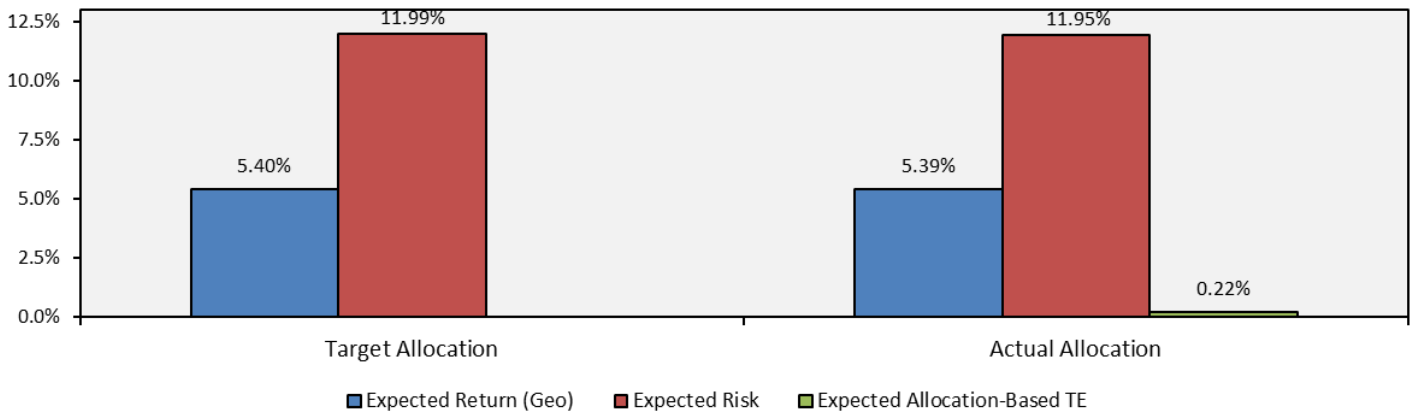
## Global Listed Infrastructure Overview (Continued)

- ◆ The Fund's Master Limited Partnership (MLP) program, which is comprised of Harvest Fund Advisors and Atlantic Trust, was joined last quarter by a Global Listed Infrastructure strategy managed by Cohen & Steers. The three managers will now make up the Global Listed Infrastructure composite. Commodity results were positive for the quarter as crude oil was up 21.9% to \$59.16 per barrel. Oil prices are now up +47% for the past six months. Natural gas prices were up 2.7%, ending the quarter at \$2.61 per million BTUs. Midstream energy surged for the second consecutive quarter while the broader infrastructure segment was also positive. Although the Global Listed Infrastructure composite trailed its benchmark for the quarter, it is outperforming across the three- and five- year time periods, including since inception.

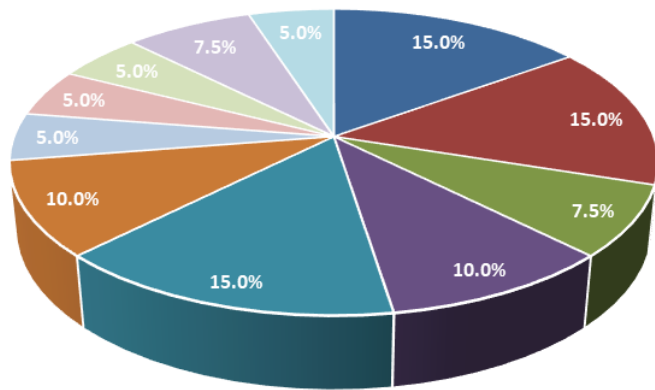
## **Appendix: Risk Analysis & Performance Objectives**



## Expected Return and Risk

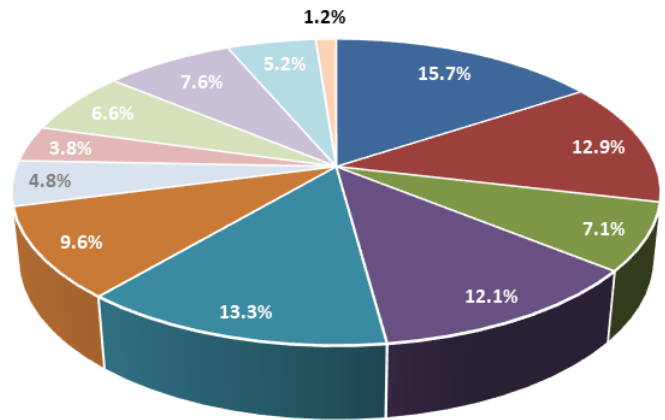


Target Asset Allocation



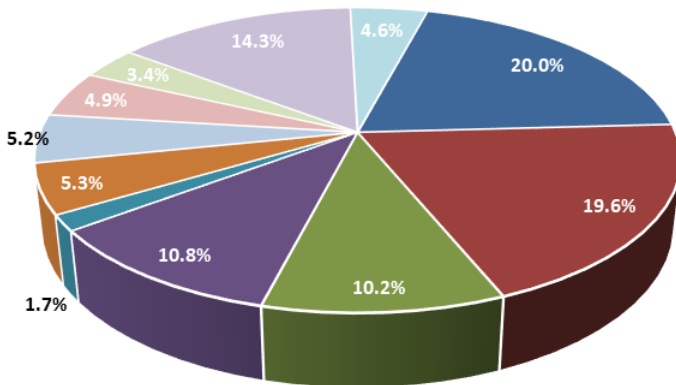
- Domestic Equity
- Int'l Equity
- Global Equity
- Opp Credit
- Public REITs
- Private Real Est.

Actual Asset Allocation



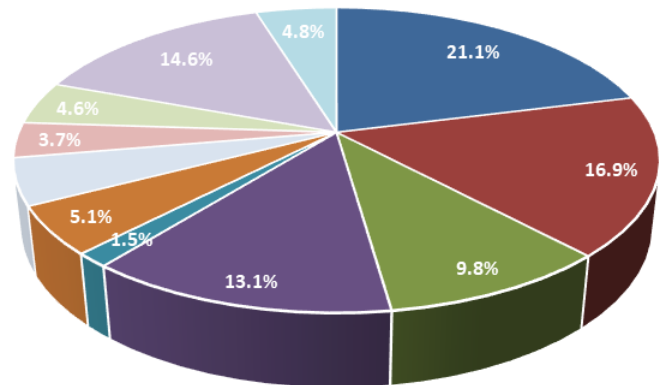
- Global Low Vol
- Global Fixed Income
- High Yield
- Private Equity
- Global Listed Infra
- Cash

Contribution to Total Risk - Target Allocation



- Domestic Equity
- Int'l Equity
- Global Equity
- Opp Credit
- Public REITs
- Private Real Est.

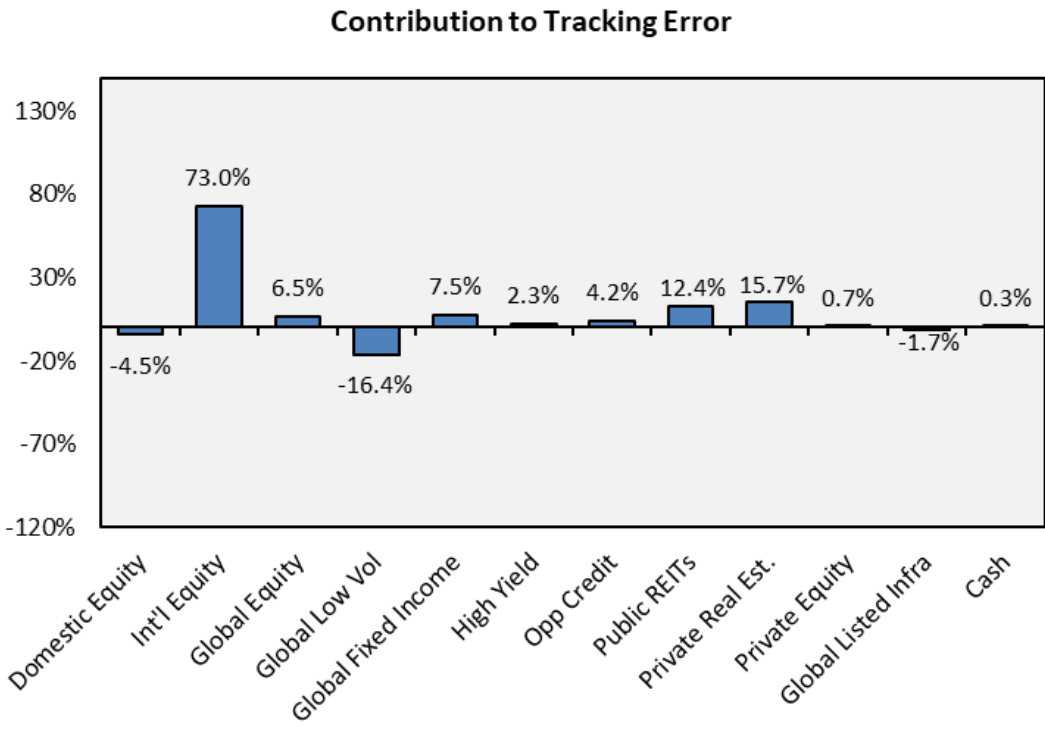
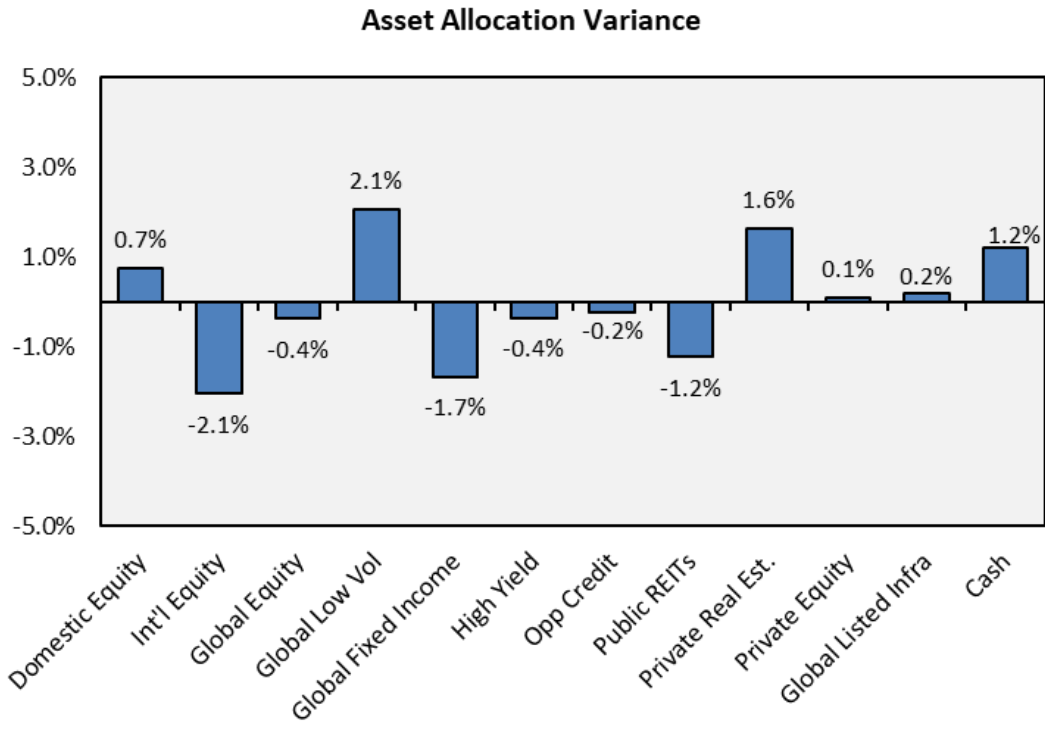
Contribution to Total Risk - Actual Allocation



- Global Low Vol
- Global Fixed Income
- High Yield
- Private Equity
- Global Listed Infra
- Cash



**Expected Return and Tracking Error based on Wilshire's Asset Assumptions**



◆ The variance between the Fund's actual asset allocation and the target allocation is a source of tracking error for the Fund. This "asset allocation tracking error" is currently forecasted to be 0.22% (for the one-year period) at quarter-end. International equity and Private Real Estate provided the largest contributions to tracking error at the total fund level.



### Manager Risk Statistics

U.S. Equity					Non-U.S. Equity				
<u>T. Rowe Price (Enhanced Index)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>	<u>Acadian (Int'l Small Cap)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
Standard Deviation	17.98	18.86	15.23	13.90	Standard Deviation	14.93	20.70	17.08	16.58
Standard Deviation (Index)	17.33	18.40	1.89	13.58	Standard Deviation (Index)	17.27	21.03	17.14	16.38
Sharpe Ratio	3.21	0.82	1.03	0.98	Sharpe Ratio	4.75	0.22	0.64	0.48
Sharpe Ratio (Index)	3.24	0.82	1.00	0.97	Sharpe Ratio (Index)	4.03	0.24	0.53	0.35
Excess Risk	1.39	1.09	1.16	1.07	Excess Risk	4.47	4.55	4.23	3.73
Information Ratio	0.67	0.37	0.61	0.37	Information Ratio	0.18	-0.10	0.40	0.59
<u>Systematic (Small Core)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>	<u>AQR (Int'l Equity)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
Standard Deviation	17.15	24.61	20.25	18.45	Standard Deviation	14.22	18.51	15.29	15.76
Standard Deviation (Index)	20.00	25.70	21.01	18.93	Standard Deviation (Index)	15.04	17.65	14.62	15.15
Sharpe Ratio	5.00	0.35	0.67	0.61	Sharpe Ratio	3.98	0.23	0.57	0.35
Sharpe Ratio (Index)	4.73	0.51	0.71	0.58	Sharpe Ratio (Index)	3.27	0.28	0.58	0.28
Excess Risk	9.45	6.24	5.40	4.55	Excess Risk	2.91	3.06	2.65	2.57
Information Ratio	-0.48	-0.64	-0.24	0.05	Information Ratio	1.70	-0.19	0.10	0.47
<u>Channing Capital (Small Value)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>	<u>Ativo (Int'l Developed)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
Standard Deviation	23.62	28.48	23.31	n/a	Standard Deviation	14.83	18.06	n/a	n/a
Standard Deviation (Index)	20.58	26.96	22.29	n/a	Standard Deviation (Index)	17.33	17.74	n/a	n/a
Sharpe Ratio	4.31	0.36	0.52	n/a	Sharpe Ratio	2.93	0.20	n/a	n/a
Sharpe Ratio (Index)	4.70	0.37	0.55	n/a	Sharpe Ratio (Index)	2.56	0.25	n/a	n/a
Excess Risk	10.07	7.31	6.10	n/a	Excess Risk	5.82	5.05	n/a	n/a
Information Ratio	0.25	0.03	-0.02	n/a	Information Ratio	-0.11	-0.16	n/a	n/a
<u>Redwood (Small Growth)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>	<u>Global Equity</u>				
Standard Deviation	16.45	21.64	n/a	n/a	<u>Wellington (Global Equity)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
Standard Deviation (Index)	21.75	25.53	n/a	n/a	Standard Deviation	16.40	18.82	15.33	n/a
Sharpe Ratio	4.96	0.74	n/a	n/a	Standard Deviation (Index)	16.15	17.89	14.48	n/a
Sharpe Ratio (Index)	4.14	0.60	n/a	n/a	Sharpe Ratio	3.45	0.53	0.77	n/a
Excess Risk	10.25	10.15	n/a	n/a	Sharpe Ratio (Index)	3.37	0.58	0.82	n/a
Information Ratio	-0.43	0.06	n/a	n/a	Excess Risk	4.29	3.72	3.39	n/a
<u>Smith Graham (Mid-Cap)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>	Information Ratio	0.31	-0.11	-0.02	n/a
Standard Deviation	18.94	29.32	n/a	n/a	<u>Ariel (Global Equity)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
Standard Deviation (Index)	17.57	22.02	n/a	n/a	Standard Deviation	13.47	14.16	n/a	n/a
Sharpe Ratio	5.87	0.36	n/a	n/a	Standard Deviation (Index)	16.15	17.89	n/a	n/a
Sharpe Ratio (Index)	4.18	0.59	n/a	n/a	Sharpe Ratio	2.26	0.42	n/a	n/a
Excess Risk	9.55	11.37	n/a	n/a	Sharpe Ratio (Index)	3.37	0.58	n/a	n/a
Information Ratio	2.27	-0.20	n/a	n/a	Excess Risk	6.86	6.89	n/a	n/a
<u>Real Estate Investment Trusts</u>					Information Ratio	-2.26	-0.59	n/a	n/a
<u>Adelante (REIT)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>	<u>Global Low Volatility</u>				
Standard Deviation	13.54	17.65	15.29	15.45	<u>Acadian (Global Low Volatility)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
Standard Deviation (Index)	14.13	18.70	16.21	16.29	Standard Deviation	13.01	14.52	12.03	n/a
Sharpe Ratio	2.61	0.48	0.31	0.54	Standard Deviation (Index)	16.15	17.89	14.48	n/a
Sharpe Ratio (Index)	2.46	0.40	0.24	0.49	Sharpe Ratio	2.14	0.27	0.51	n/a
Excess Risk	1.54	2.06	1.95	1.81	Sharpe Ratio (Index)	3.37	0.58	0.82	n/a
Information Ratio	0.32	0.49	0.39	0.23	Excess Risk	6.78	6.38	5.60	n/a
<u>Centersquare (REIT)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>	Information Ratio	-2.54	-0.92	-0.92	n/a
Standard Deviation	14.35	n/a	n/a	n/a	<u>Fixed Income (Core)</u>				
Standard Deviation (Index)	14.13	n/a	n/a	n/a	<u>Securian (Core Fixed Income)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
Sharpe Ratio	2.63	n/a	n/a	n/a	Standard Deviation	4.81	5.31	4.41	3.66
Sharpe Ratio (Index)	2.46	n/a	n/a	n/a	Standard Deviation (Index)	3.61	3.56	3.31	3.04
Excess Risk	2.27	n/a	n/a	n/a	Sharpe Ratio	1.45	0.62	0.61	0.98
Information Ratio	0.96	n/a	n/a	n/a	Sharpe Ratio (Index)	0.16	0.87	0.57	0.92
					Excess Risk	1.50	3.51	2.73	1.96
					Information Ratio	4.21	0.04	0.29	0.39



### Manager Risk Statistics

High Yield Fixed Income					Fixed Income (Core)				
<u>BlackRock (High Yield)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>	<u>Aberdeen (Core Fixed Income)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
Standard Deviation	10.02	9.49	7.57	6.76	Standard Deviation	4.93	4.41	3.84	3.44
Standard Deviation (Index)	7.05	9.43	7.66	7.10	Standard Deviation (Index)	3.61	3.56	3.31	3.04
Sharpe Ratio	2.08	0.53	0.79	0.80	Sharpe Ratio	1.19	0.90	0.71	0.96
Sharpe Ratio (Index)	3.28	0.52	0.85	0.77	Sharpe Ratio (Index)	0.16	0.87	0.57	0.92
Excess Risk	5.06	3.08	2.44	2.08	Excess Risk	1.54	1.91	1.51	1.35
Information Ratio	-0.37	0.05	-0.21	-0.03	Information Ratio	3.41	0.44	0.54	0.38
<u>Oaktree (High Yield)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>	<u>Garcia Hamilton (Core Fixed Income)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
Standard Deviation	6.72	8.91	7.25	6.75	Standard Deviation	3.90	3.35	3.01	n/a
Standard Deviation (Index)	7.05	9.43	7.66	7.10	Standard Deviation (Index)	3.61	3.56	3.31	n/a
Sharpe Ratio	3.41	0.48	0.77	0.75	Sharpe Ratio	0.76	0.79	0.60	n/a
Sharpe Ratio (Index)	3.28	0.52	0.85	0.77	Sharpe Ratio (Index)	0.16	0.87	0.57	n/a
Excess Risk	0.76	1.08	0.96	1.04	Excess Risk	1.18	1.34	1.18	n/a
Information Ratio	-0.22	-0.51	-0.95	-0.39	Information Ratio	2.00	-0.33	-0.08	n/a
<u>Neuberger Berman (Credit Opps)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>	<u>Master Limited Partnerships</u>				
Standard Deviation	7.62	10.69	8.50	n/a	<u>Harvest (MLP)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
Standard Deviation (Index)	6.48	9.38	7.48	n/a	Standard Deviation	36.44	36.40	29.78	n/a
Sharpe Ratio	3.08	0.32	0.59	n/a	Standard Deviation (Index)	56.54	47.67	38.07	n/a
Sharpe Ratio (Index)	3.06	0.36	0.65	n/a	Sharpe Ratio	2.06	-0.01	0.05	n/a
Excess Risk	1.41	1.79	1.63	n/a	Sharpe Ratio (Index)	1.82	-0.09	-0.06	n/a
Information Ratio	2.12	0.02	0.06	n/a	Excess Risk	15.86	14.17	11.06	n/a
					Information Ratio	-0.87	0.30	0.35	n/a
					<u>Atlantic Trust CIBC (MLP)</u>	<u>1 Yr</u>	<u>3 Yr</u>	<u>5 Yr</u>	<u>10 Yr</u>
					Standard Deviation	44.05	40.24	32.83	27.09
					Standard Deviation (Index)	56.54	47.67	38.07	29.62
					Sharpe Ratio	1.87	-0.04	0.03	0.03
					Sharpe Ratio (Index)	1.82	-0.09	-0.06	-0.05
					Excess Risk	9.87	9.39	7.58	7.81
					Information Ratio	-1.02	0.30	0.46	0.29



**Manager Performance Objectives**

Domestic Equity	<u>3-year</u>	<u>5-year</u>	<u>Since Inception</u>	<u>Inception Date</u>
<b><u>Enhanced Index</u></b>				
<b>T. Rowe Price (Net)</b>	<b>16.75</b>	<b>16.27</b>	<b>10.71</b>	<b>Mar-06</b>
S&P 500 Index + 1%	17.94	17.45	11.15	Mar-06
<i>Net of Fee Value Added vs Objective</i>	<i>-1.19</i>	<i>-1.18</i>	<i>-0.44</i>	
S&P 500 Index	16.78	16.29	10.67	Mar-06
<i>Net of Fee Value Added vs Benchmark</i>	<i>-0.03</i>	<i>-0.02</i>	<i>0.04</i>	
<b><u>Small Core - Active</u></b>				
<b>Systematic Financial (Net)</b>	<b>10.20</b>	<b>14.82</b>	<b>11.55</b>	<b>Jun-03</b>
Russell 2000 Index + 1.25%	16.19	17.80	11.95	Jun-03
<i>Net of Fee Value Added vs Objective</i>	<i>-5.99</i>	<i>-2.98</i>	<i>-0.40</i>	
Russell 2000 Index	14.76	16.35	10.57	Jun-03
<i>Net of Fee Value Added vs Benchmark</i>	<i>-4.56</i>	<i>-1.53</i>	<i>0.98</i>	
<b><u>Small Value - Active</u></b>				
<b>Channing Capital Management (Net) *</b>	<b>11.84</b>	<b>13.42</b>	<b>9.17</b>	<b>Oct-13</b>
Russell 2000 Value Index + 1.25%	12.96	14.98	10.41	Oct-13
<i>Net of Fee Value Added vs Objective</i>	<i>-1.12</i>	<i>-1.56</i>	<i>-1.24</i>	
Russell 2000 Value Index	11.57	13.56	9.05	Oct-13
<i>Net of Fee Value Added vs Benchmark</i>	<i>0.27</i>	<i>-0.15</i>	<i>0.12</i>	
<b><u>Small Growth - Active</u></b>				
<b>Redwood Investments (Net) *</b>	<b>17.84</b>		<b>15.29</b>	<b>Sep-16</b>
Russell 2000 Growth Index + 1.50%	18.91		19.47	Sep-16
<i>Net of Fee Value Added vs Objective</i>	<i>-1.07</i>		<i>-4.18</i>	
Russell 2000 Growth Index	17.16		17.70	
<i>Net of Fee Value Added vs Benchmark</i>	<i>0.68</i>		<i>-2.41</i>	
<b><u>Mid Cap Value - Active</u></b>				
<b>Smith Graham Mid Cap Value (Net) *</b>	<b>12.14</b>		<b>11.27</b>	<b>Dec-17</b>
Russell Midcap Index + 2%	17.03		15.63	Dec-17
<i>Net of Fee Value Added vs Objective</i>	<i>-4.89</i>		<i>-4.36</i>	
Russell Midcap Index	14.73		13.37	
<i>Net of Fee Value Added vs Benchmark</i>	<i>-2.59</i>		<i>-2.09</i>	





**Manager Performance Objectives**

International Equity	<u>3-year</u>	<u>5-year</u>	<u>Since Inception</u>	
<b><u>Int'l Small Cap - Active</u></b>				
<b>Acadian International (Net)</b>	<b>6.13</b>	<b>12.28</b>	<b>8.77</b>	<b>Mar-89</b>
Custom Benchmark + 2%	8.75	12.62	8.51	Mar-89
<i>Net of Fee Value Added vs Objective</i>	<i>-2.62</i>	<i>-0.34</i>	<i>0.26</i>	
Custom Benchmark	6.61	10.40		Mar-89
<i>Net of Fee Value Added vs Benchmark</i>	<i>-0.47</i>	<i>1.88</i>		
<b><u>Int'l Enhanced Index</u></b>				
<b>AQR Capital Management (Net)</b>	<b>5.88</b>	<b>10.05</b>	<b>4.53</b>	<b>Mar-06</b>
Custom Benchmark + 1.5%	8.11	11.40	5.43	Mar-06
<i>Net of Fee Value Added vs Objective</i>	<i>-2.23</i>	<i>-1.35</i>	<i>-0.90</i>	
Custom Benchmark	6.51	9.76	3.87	Mar-06
<i>Net of Fee Value Added vs Benchmark</i>	<i>-0.63</i>	<i>0.29</i>	<i>0.66</i>	
<b><u>Int'l Developed</u></b>				
<b>Ativo International Developed (Net) *</b>	<b>5.17</b>		<b>4.19</b>	<b>Dec-17</b>
MSCI EAFE Index + 2%	8.16		7.54	
<i>Net of Fee Value Added vs Objective</i>	<i>-2.99</i>		<i>-3.35</i>	
MSCI EAFE Index	6.02		5.05	
<i>Net of Fee Value Added vs Benchmark</i>	<i>-0.85</i>		<i>-0.85</i>	
<b><u>Int'l Equity (Active)</u></b>				
<b>Baillie Gifford (Net)</b>	-.-	-.-	<b>22.91</b>	<b>Mar-19</b>
MSCI ACWI x-US (Net) + 2%	-.-	-.-	14.36	
<i>Net of Fee Value Added vs Objective</i>			<i>8.55</i>	
MSCI ACWI x-US (Net)	-.-	-.-	12.31	
<i>Net of Fee Value Added vs Benchmark</i>			<i>10.60</i>	
<b><u>Int'l Equity (Active)</u></b>				
<b>Earnest Partners (Net) *</b>	-.-	-.-	<b>13.79</b>	<b>Mar-19</b>
MSCI ACWI x-US (Net) + 2%	-.-	-.-	14.36	
<i>Net of Fee Value Added vs Objective</i>			<i>-0.57</i>	
MSCI ACWI x-US (Net)	-.-	-.-	12.31	
<i>Net of Fee Value Added vs Benchmark</i>			<i>1.48</i>	



**Manager Performance Objectives**

<b>Global Equity</b>	<b>3-year</b>	<b>5-year</b>	<b>Since Inception</b>	<b>Inception Date</b>
<b>Global Equity - Active</b>				
<b>Wellington (Net)</b>	<b>11.63</b>	<b>13.13</b>	<b>13.02</b>	<b>Aug-12</b>
MSCI ACWI (Net) + 2%	14.32	15.48	13.34	Aug-12
<i>Net of Fee Value Added vs Objective</i>	<i>-2.69</i>	<i>-2.35</i>	<i>-0.32</i>	
MSCI ACWI (Net)	12.07	13.21	11.11	Aug-12
<i>Net of Fee Value Added vs Benchmark</i>	<i>-0.45</i>	<i>-0.08</i>	<i>1.90</i>	

<b>Global Equity - Active</b>				
<b>Ariel (Net) *</b>	<b>7.51</b>		<b>7.12</b>	<b>Dec-17</b>
MSCI ACWI (Net) + 1.5%	13.75		12.43	
<i>Net of Fee Value Added vs Objective</i>	<i>-6.24</i>		<i>-5.31</i>	
MSCI ACWI (Net)	12.07		10.76	
<i>Net of Fee Value Added vs Benchmark</i>	<i>-4.56</i>		<i>-3.64</i>	

<b>Global Low Volatility - Active</b>	<b>3-year</b>	<b>5-year</b>	<b>Since Inception</b>	<b>Inception Date</b>
<b>Acadian Global Low Vol (Net)</b>	<b>5.68</b>	<b>7.51</b>	<b>7.58</b>	<b>Jun-15</b>
MSCI ACWI (Net) + 2%	14.32	15.48	12.07	Jun-15
<i>Net of Fee Value Added vs Objective</i>	<i>-8.64</i>	<i>-7.97</i>	<i>-4.49</i>	
MSCI ACWI (Net)	12.07	13.21	10.47	Jun-15
<i>Net of Fee Value Added vs MSCI ACWI</i>	<i>-6.39</i>	<i>-5.70</i>	<i>-2.90</i>	
MSCI ACWI Min Vol (Net)	7.84	8.30	8.35	Jun-15
<i>Net of Fee Value Added vs MSCI ACWI Min Vol</i>	<i>-2.16</i>	<i>-0.78</i>	<i>-0.77</i>	



**Manager Performance Objectives**

Real Estate	<u>3-year</u>	<u>5-year</u>	<u>Since Inception</u>	<u>Inception Date</u>
<b>Real Estate Securities - Public</b>				
<b>Adelante Capital Management (Net)</b>	<b>10.12</b>	<b>5.95</b>	<b>9.69</b>	<b>Sep-01</b>
Wilshire Real Estate Securities + 1%	10.11	6.20	10.92	Sep-01
<i>Net of Fee Value Added vs Objective</i>	<i>0.01</i>	<i>-0.25</i>	<i>-1.23</i>	
Wilshire Real Estate Securities	9.02	5.15	9.82	Sep-01
<i>Net of Fee Value Added vs Index</i>	<i>1.10</i>	<i>0.80</i>	<i>-0.13</i>	
<hr/>				
<b>CenterSquare (Net)</b>	-.-	-.-	<b>9.57</b>	<b>May-18</b>
Wilshire Real Estate Securities + 1%	-.-	-.-	8.75	May-18
<i>Net of Fee Value Added vs Objective</i>			<i>0.82</i>	
Wilshire Real Estate Securities	-.-	-.-	7.67	May-18
<i>Net of Fee Value Added vs Index</i>			<i>1.90</i>	



## Manager Performance Objectives

Fixed Income			Since	Inception
	<u>3-year</u>	<u>5-year</u>	<u>Inception</u>	<u>Date</u>
<b><u>Global Fixed Income</u></b>				
<b>Securian Asset Mgmt. (Net)</b>	<b>4.81</b>	<b>3.92</b>	<b>4.63</b>	<b>May-07</b>
Bloomberg Aggregate + 0.5%	5.18	3.62	4.72	May-07
<i>Net of Fee Value Added vs Objective</i>	<i>-0.37</i>	<i>0.30</i>	<i>-0.09</i>	
Bloomberg Aggregate	4.65	3.10	4.25	May-07
<i>Net of Fee Value Added vs Benchmark</i>	<i>0.16</i>	<i>0.82</i>	<i>0.38</i>	
<hr/>				
<b>Aberdeen (Net)</b>	<b>5.54</b>	<b>3.95</b>	<b>4.85</b>	<b>Apr-07</b>
Bloomberg Aggregate + 0.5%	5.18	3.62	4.64	Apr-07
<i>Net of Fee Value Added vs Objective</i>	<i>0.36</i>	<i>0.33</i>	<i>0.21</i>	
Bloomberg Aggregate	4.65	3.10	4.12	Apr-07
<i>Net of Fee Value Added vs Benchmark</i>	<i>0.88</i>	<i>0.85</i>	<i>0.73</i>	
<hr/>				
<b>Garcia Hamilton (Net)</b>	<b>4.19</b>	<b>3.01</b>	<b>3.55</b>	<b>Oct-13</b>
Bloomberg Aggregate + 0.5%	5.18	3.62	3.76	Oct-13
<i>Net of Fee Value Added vs Objective</i>	<i>-0.99</i>	<i>-0.61</i>	<i>-0.21</i>	
Bloomberg Aggregate	4.65	3.10	3.24	Oct-13
<i>Net of Fee Value Added vs Benchmark</i>	<i>-0.46</i>	<i>-0.10</i>	<i>0.30</i>	
<hr/>				
	<u>3-year</u>	<u>5-year</u>	Since	Inception
			<u>Inception</u>	<u>Date</u>
<b><u>High Yield</u></b>				
<b>Oaktree Capital Management (Net)</b>	<b>5.83</b>	<b>6.83</b>	<b>6.44</b>	<b>Dec-96</b>
Performance Objective	7.49	8.89	8.06	Dec-96
<i>Net of Fee Value Added vs Objective</i>	<i>-1.66</i>	<i>-2.06</i>	<i>-1.62</i>	
Custom Benchmark	6.43	7.81		Dec-96
<i>Net of Fee Value Added vs Benchmark</i>	<i>-0.59</i>	<i>-0.98</i>		
<hr/>				
<b>BlackRock High Yield (Net)</b>	<b>6.58</b>	<b>7.25</b>	<b>6.47</b>	<b>Sep-06</b>
Citigroup High Yield Cash Pay + 1%	7.48	8.88	7.99	Sep-06
<i>Net of Fee Value Added vs Objective</i>	<i>-0.90</i>	<i>-1.63</i>	<i>-1.52</i>	
Citigroup High Yield Cash Pay	7.48	8.88	7.99	Sep-06
<i>Net of Fee Value Added vs Benchmark</i>	<i>-0.90</i>	<i>-1.63</i>	<i>-1.52</i>	
<hr/>				
<b><u>Credit Opportunities</u></b>				
<b>Neuberger Berman (Net)</b>	<b>4.96</b>	<b>6.22</b>	<b>6.64</b>	<b>Jan-16</b>
Custom Benchmark + 1%	5.97	7.17	7.81	Jan-16
<i>Net of Fee Value Added vs Objective</i>	<i>-1.01</i>	<i>-0.95</i>	<i>-1.17</i>	
Custom Benchmark	4.92	6.11	6.74	Jan-16
<i>Net of Fee Value Added vs Benchmark</i>	<i>0.03</i>	<i>0.11</i>	<i>-0.11</i>	



**Manager Performance Objectives**

MLP's	<u>3-year</u>	<u>5-year</u>	<u>Since Inception</u>	<u>Inception Date</u>
<b>MLPs</b>				
<b>Harvest Fund Advisors (Net)</b>	<b>1.21</b>	<b>2.55</b>	<b>2.86</b>	<b>Dec-11</b>
Alerian MLP Index + 1.5%	-1.50	0.20	0.34	Dec-11
<i>Net of Fee Value Added vs Objective</i>	2.71	2.35	2.52	
Alerian MLP Index	-2.98	-1.30	-1.77	Dec-11
<i>Net of Fee Value Added vs Benchmark</i>	4.20	3.85	4.62	
<b>Atlantic Trust CIBC (Net)</b>	<b>-0.22</b>	<b>2.13</b>	<b>3.03</b>	<b>Dec-11</b>
Alerian MLP Index + 1.5%	-1.50	0.20	0.34	Dec-11
<i>Net of Fee Value Added vs Objective</i>	1.28	1.93	2.69	
Alerian MLP Index	-2.98	-1.30	-1.77	Dec-11
<i>Net of Fee Value Added vs Benchmark</i>	2.76	3.43	4.80	



# Dallas ERF Asset Allocation Refresh

Tom Toth, CFA, Managing Director

Ali Kazemi, Managing Director

May 2021

Wilshire



# Asset Allocation Changes – Adopted in 2019

1. Range of portfolios were considered that factored in the following changes:
2. Increasing Private Equity allocation (Return Seeking)
3. Moving from Market Cap Equities to Low Volatility Equities (Risk Decreasing)
4. Decreasing REIT exposure (Risk Decreasing)
5. Enhancing Private Real Estate with a Value-Add allocation (Return Seeking)
6. Eliminating MLP as a standalone bucket and introducing a diversified Global Public Infrastructure bucket (Risk Decreasing)
7. Introduction of Marketable Alternatives (Risk Decreasing)

# Marketable Alternatives (MALT)

- Wilshire views these strategies as a dynamic implementation tool used to achieve portfolio objectives
- MALT are not homogenous and have varying levels of directionality, risk, and liquidity
- Manager structuring and selection is highly dependent on investor objectives, risk tolerances, and governance capabilities
  
- **Therefore...**
- We think of MALT as:
  - Benchmark agnostic strategies and/or funds with investment lives of < 5 years
- Invest in a diversified set of strategies to achieve one or more outcomes which are integrated and consistent with the asset allocation policy:
  - Drive returns (Growth)
  - Mitigate specific risk factors or provide uncorrelated sources of return (Diversifiers)



# Directional And Diversifying Strategy Groups

- Wilshire recommends segregating the MALT universe of strategies into **Directional** and **Diversifying** groups
- **Directional Alternatives**
  - Strategies that tend to be directionally long risk assets and exhibit higher equity correlations than the global hedge fund index, though some may exhibit lower beta
  - Allocations compete with traditional assets in broader portfolio
  - Organized into Equity, Credit, and Multi-Asset Class categories
- **Diversifying Alternatives**
  - Strategies that rely on relative value opportunities, dynamic directional exposures, or specific market inefficiencies to generate returns.
  - Generally low beta AND low equity correlations
    - Low beta/correlation does not necessarily indicate low risk
  - Designed to diversify versus Policy over most rolling periods > one year
  - Organized into Capital Preservation, Relative Value Arbitrage, Low Correlated Yield, and Dynamic Correlation categories

**ERF MALT search was focused on the diversifying segment of the universe**

# March 2021 Wilshire Capital Market Assumptions

	Domestic Equity	International Equity	Global Equity	Global Low Volatility Equity	Private Equity	Core Fixed Income	High Yield Fixed Income	Credit Opportunities	REITs	Private Real Estate - Core	Private Real Estate - Value Add	Global Public Infrastructure	Marketable Alternatives	Cash
Return - 10-Year (%)	4.75	6.00	5.40	5.35	7.15	2.05	3.90	4.80	5.15	5.15	6.55	6.60	4.00	1.25
Return - 30-Year (%)	6.40	7.20	6.85	6.80	9.00	3.70	5.80	6.15	6.20	5.95	8.15	7.75	5.20	2.25
Risk (%)	17.00	19.15	17.15	13.35	28.00	4.30	10.00	10.35	17.00	12.00	17.50	16.95	4.60	0.75
Correlations														
Domestic Equity	1.00													
International Equity	0.83	1.00												
Global Equity	0.95	0.94	1.00											
Global Low Volatility Equity	0.93	0.91	0.96	1.00										
Private Equity	0.74	0.67	0.74	0.77	1.00									
Core Fixed Income	0.28	0.09	0.20	0.21	0.31	1.00								
High Yield Fixed Income	0.54	0.45	0.51	0.51	0.34	0.25	1.00							
Credit Opportunities	0.59	0.58	0.61	0.60	0.41	0.27	0.74	1.00						
REITs	0.58	0.49	0.56	0.64	0.50	0.17	0.56	0.59	1.00					
Private Real Estate - Core	0.55	0.48	0.53	0.64	0.51	0.17	0.57	0.59	0.85	1.00				
Private Real Estate - Value Add	0.50	0.42	0.48	0.58	0.48	0.18	0.54	0.58	0.70	0.85	1.00			
Global Public Infrastructure	0.50	0.52	0.53	0.50	0.52	0.14	0.57	0.58	0.53	0.50	0.47	1.00		
Marketable Alternatives	0.43	0.54	0.52	0.52	0.42	0.09	0.58	0.59	0.33	0.33	0.29	0.51	1.00	
Cash	-0.05	-0.08	-0.07	-0.04	0.00	0.19	-0.10	-0.03	-0.05	-0.05	-0.05	-0.01	0.07	1.00

# Asset Allocation Refresh

Asset Class	Current Policy with Assumptions when Adopted (Sept 2019)	Current Policy with Latest Assumptions (March 2021)	Current Allocation (March 2021) with Latest Assumptions (March 2021)
Domestic Equity	12.5%	12.5%	15.8%
International Equity	12.5%	12.5%	13.0%
Global Equity	7.5%	7.5%	7.1%
Global Low Volatility Equity	12.5%	12.5%	12.1%
Private Equity	<u>7.5%</u>	<u>7.5%</u>	<u>7.6%</u>
<b>Total Growth</b>	<b>52.5%</b>	<b>52.5%</b>	<b>55.5%</b>
Core Fixed Income	15.0%	15.0%	13.3%
High Yield Fixed Income	10.0%	10.0%	9.6%
Credit Opportunities	<u>5.0%</u>	<u>5.0%</u>	<u>4.8%</u>
<b>Total Fixed Income</b>	<b>30.0%</b>	<b>30.0%</b>	<b>27.7%</b>
REITs	2.5%	2.5%	3.8%
Private Real Estate - Core	5.0%	5.0%	6.0%
Private Real Estate - Value Add	2.5%	2.5%	0.7%
Global Public Infrastructure	<u>5.0%</u>	<u>5.0%</u>	<u>5.2%</u>
<b>Total Inflation Hedging Assets</b>	<b>15.0%</b>	<b>15.0%</b>	<b>15.6%</b>
Marketable Alternatives	<u>2.5%</u>	<u>2.5%</u>	<u>0.0%</u>
<b>Total Diversifying Assets</b>	<b>2.5%</b>	<b>2.5%</b>	<b>0.0%</b>
<b>Cash</b>	<b>0.0%</b>	<b>0.0%</b>	<b>1.2%</b>
<b>Total Assets</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
<b>Expected Return - 10 Years (%)</b>	<b>6.10</b>	<b>5.35</b>	<b>5.35</b>
<b>Standard Deviation of Return (%)</b>	<b>11.50</b>	<b>11.50</b>	<b>11.92</b>
<b>Cash Yield (%)</b>	<b>3.15</b>	<b>2.83</b>	<b>2.85</b>
<b>Return\Risk Ratio</b>	<b>0.53</b>	<b>0.47</b>	<b>0.45</b>
<b>Expected Return - 30 Years (%)</b>	<b>7.55</b>	<b>6.81</b>	<b>6.80</b>
<b>Standard Deviation of Return (%)</b>	<b>11.50</b>	<b>11.50</b>	<b>11.92</b>
<b>Return\Risk Ratio</b>	<b>0.66</b>	<b>0.59</b>	<b>0.57</b>

# Important Information

Wilshire is a global financial services firm providing diverse services to various types of investors and intermediaries. Wilshire's products, services, investment approach and advice may differ between clients and all of Wilshire's products and services may not be available to all clients. For more information regarding Wilshire's services, please see Wilshire's ADV Part 2 available at [www.wilshire.com/ADV](http://www.wilshire.com/ADV).

Wilshire believes that the information obtained from third party sources contained herein is reliable, but has not undertaken to verify such information. Wilshire gives no representations or warranties as to the accuracy of such information, and accepts no responsibility or liability (including for indirect, consequential or incidental damages) for any error, omission or inaccuracy in such information and for results obtained from its use.

This material may include estimates, projections, assumptions and other "forward-looking statements." Forward-looking statements represent Wilshire's current beliefs and opinions in respect of potential future events. These statements are not guarantees of future performance and undue reliance should not be placed on them. Such forward-looking statements necessarily involve known and unknown risks and uncertainties, which may cause actual events, performance and financial results to differ materially from any projections. Forward-looking statements speak only as of the date on which they are made and are subject to change without notice. Wilshire undertakes no obligation to update or revise any forward-looking statements.

Wilshire Advisors, LLC (Wilshire) is an investment advisor registered with the SEC. Wilshire® is a registered service mark.

Copyright © 2021 Wilshire. All rights reserved.

# Return and Risk Statistics

Risk Statistics as of 3/31/2021	Strategy	Ann. Return 3 Yrs	Ann. Return 5 Yrs	Ann. Return	Ann. Vol. 3 Yrs	Ann. Vol. 5 Yrs	Ann. Volatility	Annual Sharpe (Rf = 0)	Annual Sortino (vs 0)	Downside Deviation	Max Drawdown	Max Monthly Loss
Brevet Direct Lending Short Duration	Alternative Income	7.4%	7.8%	8.9%	0.4%	0.6%	0.7%	12.71	---	0.0%	0.0%	0.0%
Brevan Howard Fund Limited	Macro Multi-Strategy	16.5%	9.3%	9.0%	12.2%	10.3%	7.9%	1.14	3.07	2.9%	(10.0%)	(3.9%)
Dallas ERF Total Fund	Total Fund	7.8%	8.6%	7.9%	11.7%	9.5%	11.1%	0.71	1.05	7.5%	(42.9%)	(16.0%)
S&P 500 Total Return Index	Index	16.8%	16.3%	11.0%	18.4%	14.9%	14.5%	0.76	1.17	9.4%	(50.9%)	(16.8%)
MSCI ACWI Net Total Return USD Index	Index	12.1%	13.2%	6.3%	17.9%	14.5%	15.8%	0.40	0.57	11.1%	(54.9%)	(19.8%)
Bloomberg Barclays Global-Aggregate	Index	2.8%	2.7%	5.6%	4.5%	4.7%	5.3%	1.05	1.89	2.9%	(10.1%)	(4.0%)
Bloomberg Barclays US Corporate HY	Index	6.8%	8.1%	8.8%	9.3%	7.6%	8.3%	1.06	1.62	5.4%	(33.3%)	(15.9%)
Bloomberg Commodity Index Total Return	Index	(0.2%)	2.3%	8.2%	14.7%	12.7%	16.8%	0.49	0.84	9.8%	(72.0%)	(21.3%)
HFN Asset Based Lending Index	Index	5.9%	5.3%	9.4%	2.2%	1.7%	1.7%	5.53	18.14	0.5%	(3.9%)	(1.5%)
HFRI Fund Weighted Composite Index	Index	7.6%	7.5%	9.6%	9.0%	7.2%	6.8%	1.41	2.41	4.0%	(21.4%)	(9.1%)
HFRI Fund of Funds Composite Index	Index	5.4%	5.6%	6.5%	7.2%	5.8%	5.6%	1.16	1.87	3.5%	(22.2%)	(7.6%)
HFRI Directional Strategies	Index	7.6%	8.8%	4.5%	12.0%	9.3%	9.2%	0.49	0.69	6.5%	(29.0%)	(11.5%)
HFRI Diversifying Strategies	Index	2.6%	2.4%	2.9%	4.2%	3.8%	3.5%	0.82	1.36	2.1%	(5.4%)	(4.2%)

Source: HFRI, Bloomberg, Wilshire

# Correlation Matrix

Correlation Analysis as of 3/31/2021		1	2	3	4	5	6	7	8	9	10	11	12	13	Avg. Pairwise
<b>Brevet Short Duration Fund</b>	<b>1</b>	<b>1.00</b>	-0.14	0.02	0.01	0.01	0.04	0.03	-0.11	0.03	0.01	0.01	0.01	0.09	<b>-0.01</b>
<b>Brevan Howard Fund Limited</b>	<b>2</b>	-0.14	<b>1.00</b>	-0.26	-0.25	-0.23	0.01	-0.25	0.00	-0.07	-0.17	-0.13	-0.28	0.04	<b>-0.11</b>
<b>Dallas ERF Total Fund</b>	<b>3</b>	0.02	-0.26	<b>1.00</b>	0.95	0.97	0.28	0.77	0.44	0.22	0.85	0.73	0.92	0.47	<b>0.85</b>
S&P 500	<b>4</b>	0.01	-0.25	0.95	<b>1.00</b>	0.96	0.19	0.62	0.27	0.14	0.76	0.59	0.89	0.45	<b>0.35</b>
MSCI ACWI	<b>5</b>	0.01	-0.23	0.97	0.96	<b>1.00</b>	0.28	0.73	0.53	0.23	0.89	0.78	0.93	0.50	<b>0.41</b>
Barclays Global Agg.	<b>6</b>	0.04	0.01	0.28	0.19	0.28	<b>1.00</b>	0.26	0.26	0.14	0.18	0.13	0.33	0.40	<b>0.15</b>
Bloomberg Barclays U.S. High Yield Index	<b>7</b>	0.03	-0.25	0.77	0.62	0.73	0.26	<b>1.00</b>	0.25	0.14	0.67	0.52	0.83	0.40	<b>0.31</b>
Bloomberg Commodity Index	<b>8</b>	-0.11	0.00	0.44	0.27	0.53	0.26	0.25	<b>1.00</b>	0.20	0.44	0.45	0.67	0.49	<b>0.24</b>
HFN Asset Based Lending Index	<b>9</b>	0.03	-0.07	0.22	0.14	0.23	0.14	0.14	0.20	<b>1.00</b>	0.30	0.33	0.38	0.36	<b>0.16</b>
HFRI Fund Weighted Composite Index	<b>10</b>	0.01	-0.17	0.85	0.76	0.89	0.18	0.67	0.44	0.30	<b>1.00</b>	0.89	0.99	0.68	<b>0.40</b>
HFRI Fund of Funds Composite Index	<b>11</b>	0.01	-0.13	0.73	0.59	0.78	0.13	0.52	0.45	0.33	0.89	<b>1.00</b>	0.94	0.68	<b>0.37</b>
HFRI Directional Strategies	<b>12</b>	0.01	-0.28	0.92	0.89	0.93	0.33	0.83	0.67	0.38	0.99	0.94	<b>1.00</b>	0.56	<b>0.45</b>
HFRI Diversifying Strategies	<b>13</b>	0.09	0.04	0.47	0.45	0.50	0.40	0.40	0.49	0.36	0.68	0.68	0.56	<b>1.00</b>	<b>0.32</b>

Source: HFRI, Bloomberg, Wilshire

## INVESTMENT SUMMARY

### FIRM OVERVIEW

Brevet Capital Management, LLC (“Brevet”, “BCM” or the “Firm”) is an alternative investment firm founded in 1998 and based in New York City, NY with approximately \$2.1 billion of assets under management. Brevet was founded by Doug Monticciolo and Mark Callahan to replicate the investment strategies they pursued within the Principal Finance Groups at Goldman Sachs, Lehman Brothers and Deutsche Bank. The Firm’s flagship strategy, Brevet Direct Lending – Short Duration Fund (“Fund”) currently has \$829 million of assets. Brevet Direct Lending – Short Duration Fund was launched in an evergreen comingled structure in January 2009 following three years of operation as a separate account solution. The Firm employs 62 professionals of which 17 are dedicated to the investment sourcing, structuring and underwriting efforts.

### INVESTMENT STRATEGY

The strategy focuses on creating asset-based finance solutions, with a strong bias towards middle market companies whose growth is catalyzed by a federal, state, and/or municipal government program. Brevet SDF executes this mandate via four types of investments: (i) senior-secured loans collateralized by government receivables or, (ii) other government assets (i.e. real estate), (iii) government-guaranteed loans to companies that create jobs and revitalize specific geographies, and (iv) payments mandated by government enforced contracts. The inefficiencies upon which the strategy seeks to capitalize are driven by sub-optimal capital allocation by governments as well as the perceived complexity of working with governments as a counterparty in bilateral transactions. Brevet focuses on non-competed opportunities where the absence of a market mechanism confers significant control over price and structure at the deal level, whereby payments typically come from governments into bankruptcy remote accounts controlled by Brevet. As a result, the strategy is able to generate outsized returns relative to the government counterparty credit risk of its instruments.

### OPPORTUNITY SUMMARY

Firm AUM	\$2.1 billion
Strategy AUM	\$886 million
Firm Inception	1998
Fund Inception	2009
Strategy	Alternative Income
Geographic Focus	Global
Sector	Government
Investment Size	\$1m - \$100m
Number of Investments	200-500
Liquidity	Quarterly 90 days' notice
Lock-Up	1 year soft
Gate	10% Fund Level
Management Fee	2%
Performance Fee	20%

Since 2009, Brevet has invested over \$2.1 billion in its flagship, Short Duration Fund, strategy. The Fund has invested over 500 assets over the past 11 years, of which approximately 80% are government related transactions. Since inception, only one transaction has experienced a loss of principal, resulting in an overall 0.3% loss ratio on total invested capital.

### TRACK RECORD SUMMARY

Inception Oct 2009	Brevet SDF	BBG Barc Agg TR	HFN ABL
Return	9.0%	3.9%	5.3%
Volatility	0.7%	2.9%	1.7%
Sharpe	12.38	1.26	3.03
Correl.	--	0.07	0.04
Beta	--	0.02	0.02
Alpha	--	8.5%	8.6%

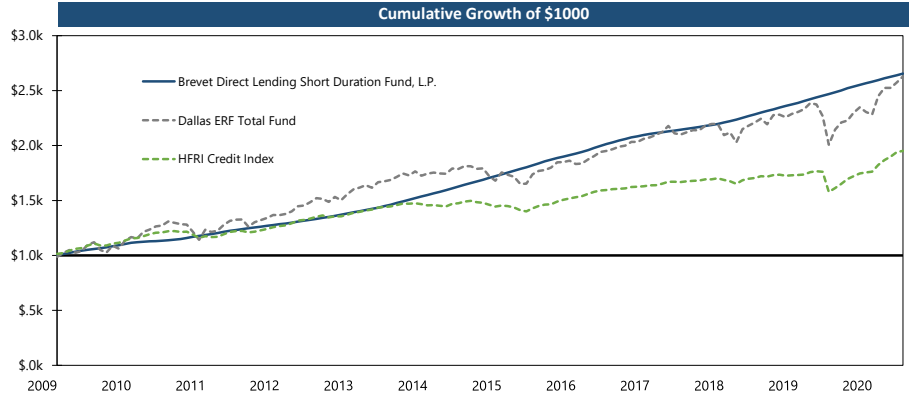
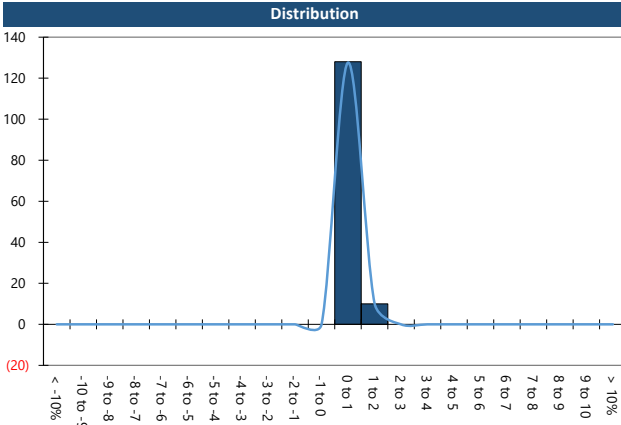
Source: Brevet as of 12/31/2020

### KEY INVESTMENT PERSONNEL

Name	Title	Experience
Doug Monticciolo	CEO, CIO	Deutsche Bank, Lehman Brothers, Goldman Sachs
Mark Callahan	President	Deutsche Bank, Lehman Brothers, Chase Manhattan Bank
Zalman Vitenson	Head of Platforms	LendingPoint, eCapital, Shell Capital Commercial Finance
Mark Dunsheath	Head of Governments	Syncora Alternative Investments, Advanta Corp., Imperial Savings
Abteen Vaziri	Head of Real Assets	Greystone & Co.

Performance Start Date: Oct-09  
Performance End Date: Mar-21  
Benchmark 1 (BM1): Dallas ERF Total Fund  
Benchmark 2 (BM2): HFRI Credit Index

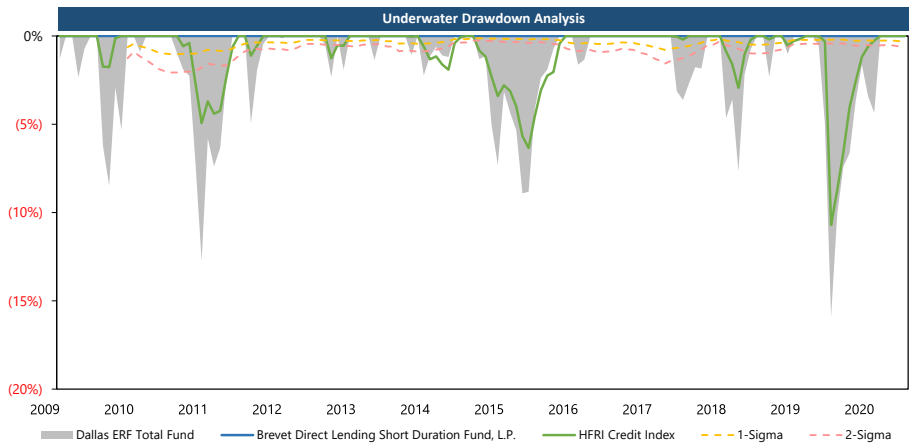
Returns Summary	YTD	QTD	Q4	Q3	Q2	1 Year	3 Year	5 Year	10 Year	Vol 3 Year	Vol 5 Year	Sharpe 3 Year	Sharpe 5 Year
Brevet Direct Lending Short Duration Fund, L.P.	1.63%	1.63%	1.76%	1.80%	2.17%	7.56%	7.38%	7.85%	8.88%	0.39%	0.59%	19.16	13.29
Dallas ERF Total Fund	4.16%	4.16%	9.49%	3.46%	11.03%	31.00%	7.78%	8.63%	7.53%	11.75%	9.46%	0.66	0.91
HFRI Credit Index	4.45%	4.45%	6.38%	3.59%	7.46%	23.69%	5.39%	6.44%	4.90%	7.46%	5.86%	0.72	1.10



Inception Statistics	Total	BM 1	BM 2
Annualized Return	8.86%	8.77%	5.99%
Annualized Standard Deviation	0.70%	9.55%	4.70%
Sharpe Ratio (Rf)	12.71	0.92	1.27
Sortino Ratio (0%)		1.45	1.72
Average Gain	0.71%	2.09%	0.97%
Average Loss		(2.23%)	(1.06%)
Skewness	(0.23)	(0.63)	(3.88)
Excess Kurtosis	(0.63)	2.83	30.01

Up vs Down Markets	Total	When BM1 > 0	When BM1 < 0	When BM2 > 0	When BM2 < 0
Monthly Alpha	0.71%	0.67%	0.75%	0.67%	0.76%
Beta	0.00	0.02	0.01	0.03	0.01
Correlation	0.02	0.13	0.08	0.11	0.08
Average Return	0.71%	0.70%	0.73%	0.70%	0.75%

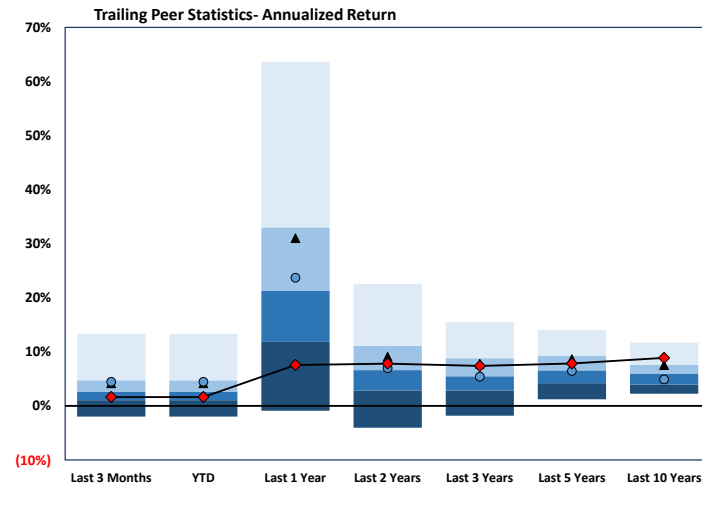
Drawdown Table	Drawdown	Length	Recovery	Peak	Valley	Recovery Date
	0.00%	---	---	Jan-00	Oct-09	---
	0.00%	---	---	Jan-00	Oct-09	---
	0.00%	---	---	Jan-00	Oct-09	---
	0.00%	---	---	Jan-00	Oct-09	---
	0.00%	---	---	Jan-00	Oct-09	---
<b>Total Drawdowns Greater Than 5%:</b>						<b>0</b>



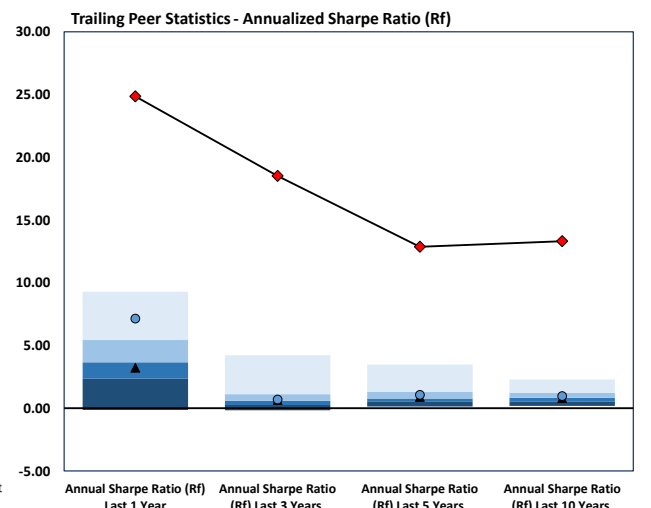
	Top 3 Months		Bottom 3 Months	
	BM1	Product	BM1	Product
	7.95%	0.73%	(11.52%)	0.59%
	7.35%	0.56%	(6.24%)	0.69%
	6.94%	0.68%	(5.99%)	0.72%

**Peer Group Comparison**

Peer Universe: HFRI Credit Index



- Bottom Quartile
- Third Quartile
- Second Quartile
- Top Quartile
- Blank
- Top Quartile
- Second Quartile
- Third Quartile
- Bottom Quartile
- Blank
- ▲ Dallas ERF Total Fund
- HFRI Credit Index
- ◆ Brevet Direct Lending Short Duration Fund, L.P.



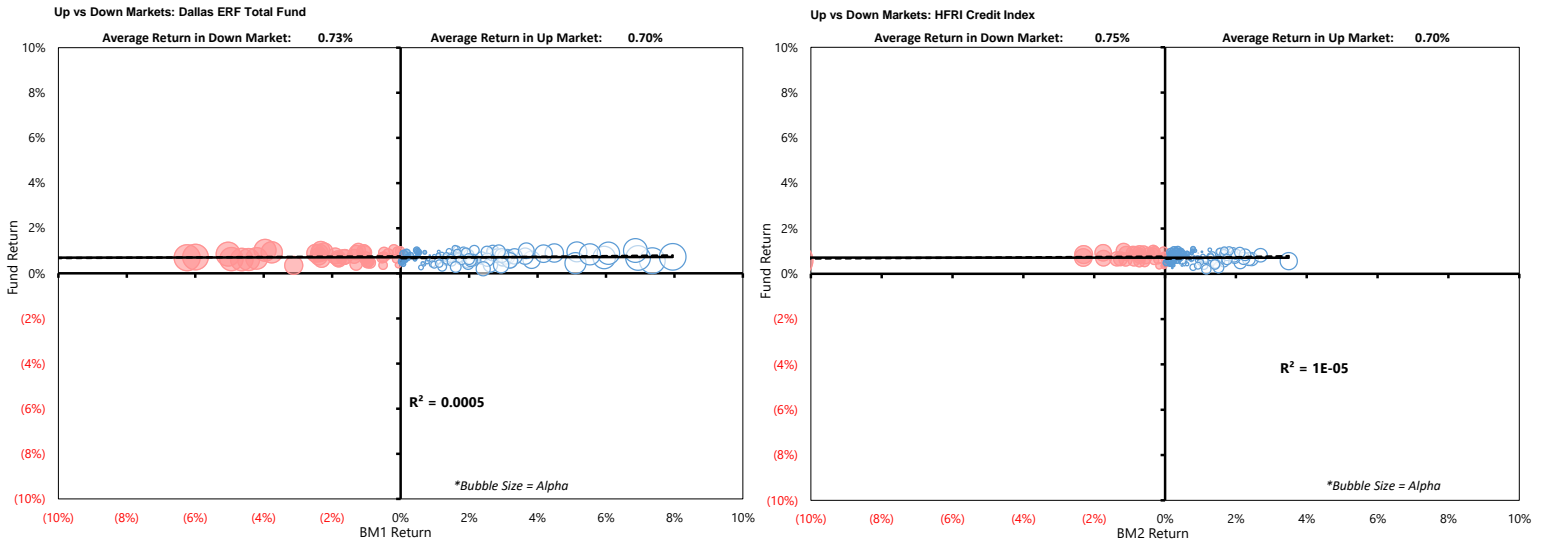


Monthly Net Performance Table

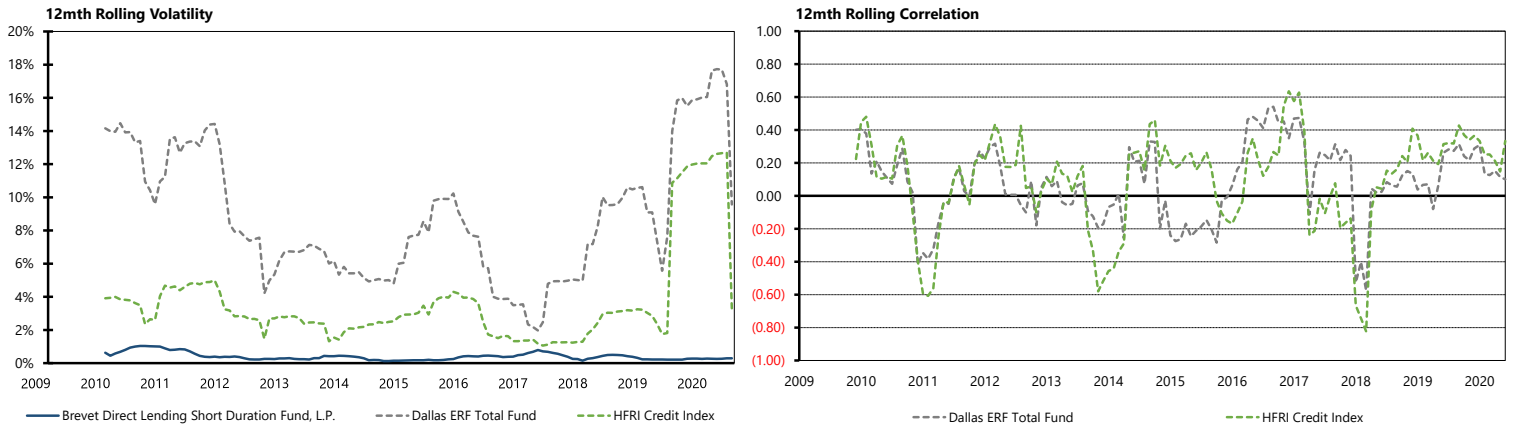
Performance Start Date: Oct-09  
 Performance End Date: Mar-21  
 Benchmark 1 (BM1): Dallas ERF Total Fund  
 Benchmark 2 (BM2): HFRI Credit Index

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD	BM1	BM2
2021	0.53%	0.50%	0.59%										1.63%	4.16%	4.45%
2020	0.69%	0.61%	0.59%	0.68%	0.65%	0.82%	0.59%	0.59%	0.61%	0.54%	0.56%	0.65%	7.85%	5.76%	6.23%
2019	0.70%	0.75%	0.69%	0.70%	0.63%	0.60%	0.70%	0.68%	0.54%	0.59%	0.75%	0.68%	8.31%	17.62%	6.47%
2018	0.37%	0.35%	0.36%	0.38%	0.41%	0.37%	0.43%	0.41%	0.41%	0.61%	0.55%	0.66%	5.44%	(4.44%)	(0.04%)
2017	1.06%	0.90%	0.87%	0.79%	0.77%	0.72%	0.69%	0.49%	0.58%	0.44%	0.43%	0.29%	8.33%	13.33%	5.98%
2016	0.93%	0.85%	0.95%	0.98%	1.02%	0.82%	0.84%	0.65%	0.69%	0.73%	0.79%	0.83%	10.56%	9.19%	8.55%
2015	0.96%	0.97%	1.04%	0.97%	0.98%	0.92%	0.90%	1.02%	0.90%	0.90%	1.01%	0.92%	12.11%	(1.70%)	(1.02%)
2014	0.75%	0.73%	0.97%	0.93%	1.10%	0.92%	0.97%	1.02%	0.96%	0.96%	0.94%	0.91%	11.75%	6.50%	3.00%
2013	0.75%	0.62%	0.60%	0.60%	0.72%	0.66%	0.73%	0.77%	0.76%	0.78%	0.75%	0.77%	8.85%	16.93%	8.96%
2012	0.87%	0.79%	0.62%	0.61%	0.63%	0.57%	0.52%	0.66%	0.55%	0.63%	0.51%	0.60%	7.83%	14.29%	10.58%
2011	0.28%	0.20%	0.26%	0.36%	0.49%	0.54%	0.86%	0.85%	0.72%	0.73%	0.72%	0.80%	7.02%	0.91%	(0.53%)
2010	1.02%	0.89%	0.84%	0.63%	0.69%	0.75%	0.89%	0.89%	1.01%	0.97%	0.47%	0.45%	9.92%	15.85%	12.66%
2009										0.41%	1.00%	0.94%	2.37%	4.91%	4.34%

Up vs Down Market Analysis



Rolling Window Analysis



## INVESTMENT SUMMARY

### FIRM OVERVIEW

Brevan Howard is a multi-PM macro shop headquartered in the U.K. with five additional offices globally. The firm was founded in 2002 by former members of the CSFB Developed Markets Rates trading team, led by Alan Howard. The firm manages \$12.2 billion in AUM and distributes capital across multi- and single-PM funds, currently employing 57 portfolio managers, 38 execution traders, 6 risk officers, 7 economists, and one strategist. Each offering at the firm has the explicit goal of capital appreciation through global macro and relative value trading across predominantly fixed income and FX instruments, with lesser allocations to equities, commodities, and credit.

### INVESTMENT STRATEGY

The strategy was launched in early 2003 as a multi-trader, global macro/relative value absolute return fund. The Master Fund allocates to single-PM funds, opportunistic vehicles, multi-PM funds, and individual traders, with the goal of giving investors exposure to the best traders across the Brevan Howard platform and balancing macro directional and macro relative value strategies. The result is a diversified multi-strategy offering with an underlying global macro trading philosophy and convex return profile, with positive expected returns during difficult market environments for equity hedge, event-driven and relative value multi-strategy peers.

**Approximately 30%** of risk is allocated to the Alpha Strategies Fund, which is a multi-PM fund comprised of a subset of 30 traders that employ relative value strategies with a narrow investment focus and low drawdown tolerance. **Another 30%** of the risk will be allocated to single-PM funds managed by Alfredo Saitta, Minal Bathwal, Fash Golchin, and Ville Helske, with these funds employing a less-constrained directional macro trading style. **Lastly, 40%** of the risk is allocated to an “Other” bucket, which consists of allocations to Alan Howard, and other traders that do not have a dedicated single-PM fund and whose trading style does not fit the Alpha Strategies Fund.

### OPPORTUNITY SUMMARY

Firm AUM	\$14.0 billion
Strategy AUM	\$5.6 billion
Firm Inception	2002
Fund Inception	2003
Strategy	Macro – Multi-Strategy
Geographic Focus	Global
Sector	Multi-Asset
Number of Investments	Thousands
Liquidity	Monthly, 90 days' notice
Lock-Up	None
Gate	25% Quarterly (Investor)
Management Fee	2.00%
Performance Fee	20.00%

### TRACK RECORD SUMMARY

Feb. 2004 – Dec. 2020	Brevan Howard	S&P 500	HFRI Macro
Ann. Return	8.94%	9.57%	3.34%
Ann. Volatility	7.95%	14.45%	4.69%
Sharpe (0%)	1.12	0.66	0.71
Sortino (0%)	3.12	0.99	1.27
Max Drawdown	<b>-10.05%</b>	<b>-50.95%</b>	<b>-8.02%</b>

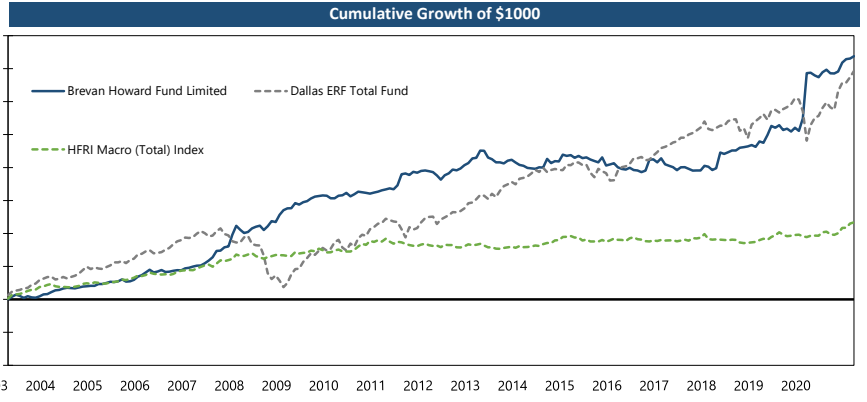
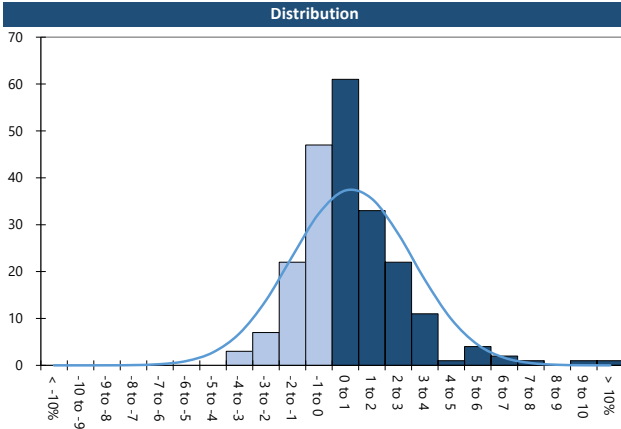
Source: HFRI, Bloomberg, Wilshire

### KEY INVESTMENT PERSONNEL

Name	Title	Experience
Alan Howard	Founder, Senior Trader	CSFB, Tokai Bank Europe, Salomon Brothers
Klaus Oestergaard	Senior Trader	Tudor Proprietary Trading, CSFB, Carnegie, SEB S.A.
Minal Bathwal	Senior Trader	UBS Hong Kong
Fash Golchin	Senior Trader	Citigroup London, West LB London
Alfredo Saitta	Senior Trader	JP Morgan Europe, Citibank London
Mark Hillery	Senior Trader	Tudor Capital, CSFB, Tokai Bank Europe, Bank of America
Trifon Natsis	Founder, Senior Trader	CSFB, Endeavor, Salomon Brothers

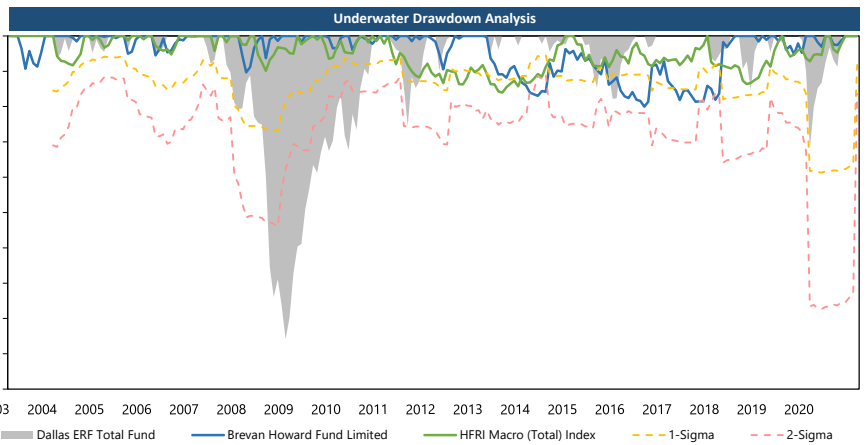
Performance Start Date: Apr-03  
Performance End Date: Mar-21  
Benchmark 1 (BM1): Dallas ERF Total Fund  
Benchmark 2 (BM2): HFRI Macro (Total) Index

Returns Summary	YTD	QTD	Q4	Q3	Q2	1 Year	3 Year	5 Year	10 Year	Vol 3 Year	Vol 5 Year	Sharpe 3 Year	Sharpe 5 Year
<b>Brevan Howard Fund Limited</b>	2.12%	2.12%	3.63%	1.39%	(1.38%)	5.82%	16.54%	9.31%	5.85%	12.16%	10.33%	1.28	0.80
<b>Dallas ERF Total Fund</b>	4.16%	4.16%	9.49%	3.46%	11.03%	31.00%	7.78%	8.63%	7.53%	11.75%	9.46%	0.58	0.81
<b>HFRI Macro (Total) Index</b>	4.06%	4.06%	4.88%	1.17%	0.95%	11.46%	4.42%	2.64%	1.46%	4.68%	4.65%	0.73	0.35



Inception Statistics	Total	BM 1	BM 2
Annualized Return	8.96%	8.67%	4.40%
Annualized Standard Deviation	7.89%	10.90%	4.87%
Sharpe Ratio (Rf)	1.01	0.70	0.70
Sortino Ratio (0%)	3.07	1.16	1.72
Average Gain	1.80%	2.25%	1.33%
Average Loss	(1.09%)	(2.67%)	(0.85%)
Skewness	2.75	(1.10)	0.38
Excess Kurtosis	17.01	4.64	0.65

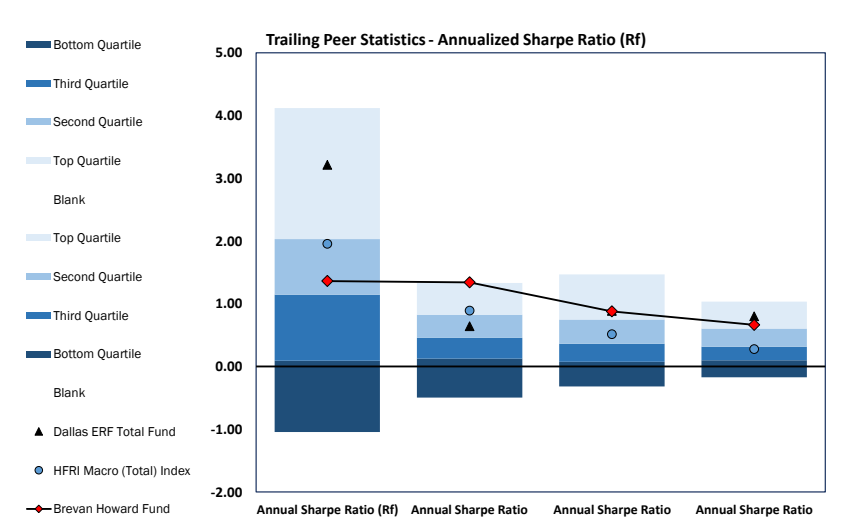
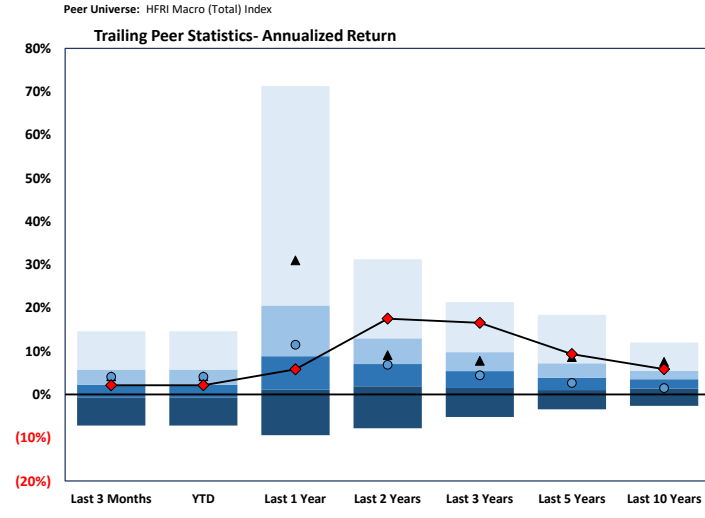
Up vs Down Markets	Total	When BM1 > 0	When BM1 < 0	When BM2 > 0	When BM2 < 0
Monthly Alpha	0.88%	0.49%	(0.05%)	0.07%	0.86%
Beta	(0.19)	0.02	(0.48)	0.70	0.53
Correlation	(0.26)	0.02	(0.42)	0.40	0.14
Average Return	0.74%	0.53%	1.23%	1.00%	0.42%



Drawdown Table	Drawdown	Length	Recovery	Peak	Valley	Recovery Date
	(10.02%)	63	23	May-13	Sep-16	Aug-18
	(5.15%)	5	4	Mar-08	Apr-08	Aug-08
	(4.73%)	6	3	Mar-12	Jun-12	Sep-12
	(4.64%)	6	5	Jul-03	Aug-03	Jan-04
	(3.16%)	2	2	Sep-08	Sep-08	Nov-08
<b>Total Drawdowns Greater Than 5%:</b>						<b>2</b>

	Top 3 Months		Bottom 3 Months	
	BM1	Product	BM1	Product
	10.32%	0.09%	(15.99%)	2.76%
	7.95%	(0.75%)	(11.52%)	18.32%
	7.35%	0.67%	(8.42%)	(3.16%)

**Peer Group Comparison**

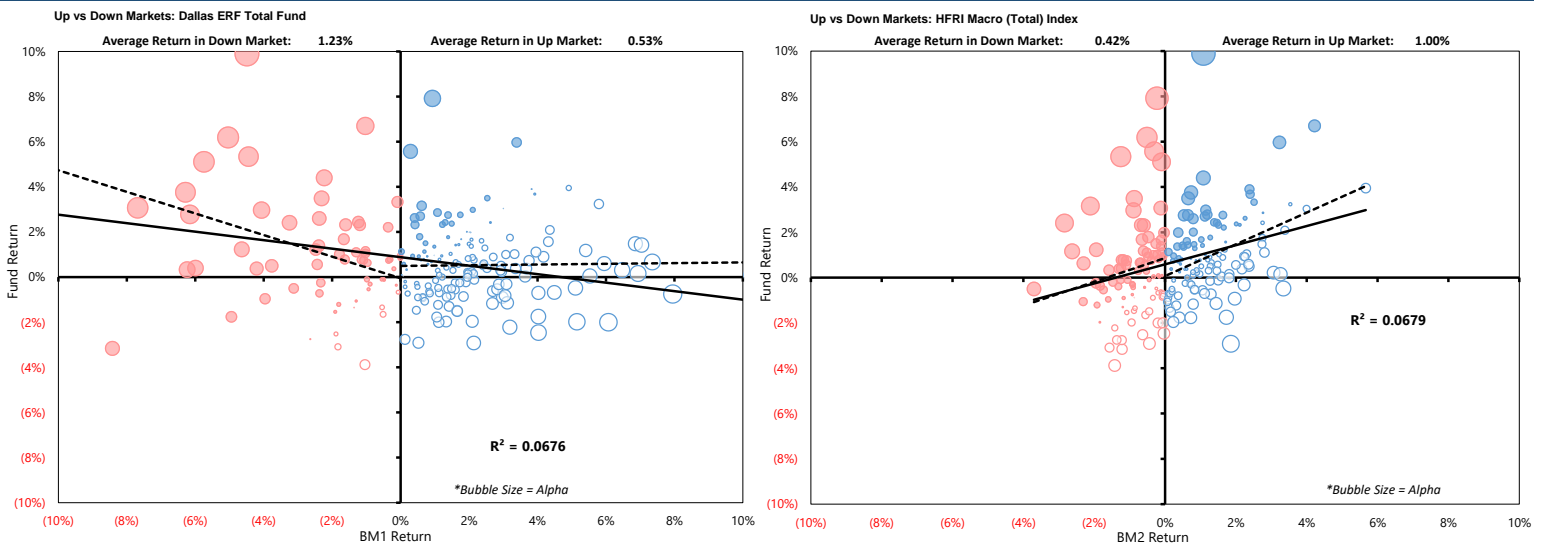


Monthly Net Performance Table

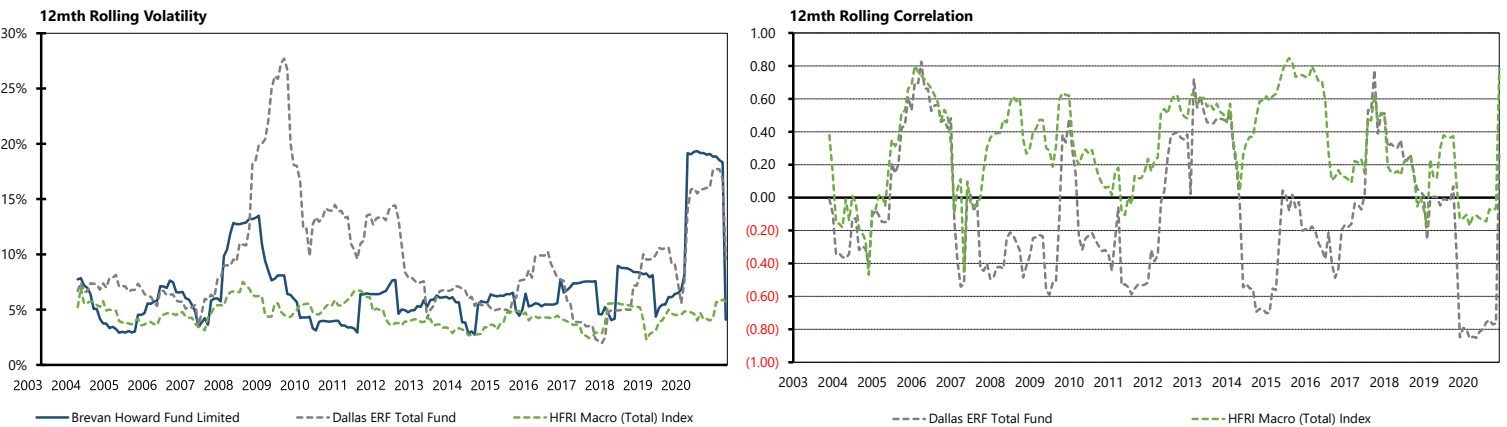
Performance Start Date: Apr-03  
 Performance End Date: Mar-21  
 Benchmark 1 (BM1): Dallas ERF Total Fund  
 Benchmark 2 (BM2): HFRI Macro (Total) Index

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD	BM1	BM2
2021	1.13%	0.22%	0.76%										2.12%	4.16%	4.06%
2020	(1.34%)	5.34%	18.32%	0.16%	(0.90%)	(0.64%)	1.75%	0.87%	(1.21%)	(0.10%)	0.67%	3.04%	27.42%	5.76%	5.38%
2019	0.60%	(0.80%)	2.42%	(0.56%)	3.49%	3.90%	(0.73%)	1.05%	(1.97%)	0.57%	(1.23%)	1.61%	8.47%	17.62%	6.50%
2018	2.42%	(0.50%)	(1.65%)	0.96%	7.92%	(0.67%)	0.82%	0.80%	0.04%	1.23%	0.29%	0.38%	12.39%	(4.44%)	(4.08%)
2017	(1.49%)	2.01%	(2.91%)	(0.72%)	(0.70%)	(1.47%)	1.44%	0.10%	(0.88%)	(0.93%)	0.10%	0.00%	(5.41%)	13.33%	2.20%
2016	0.50%	0.58%	(1.98%)	(0.86%)	(0.29%)	0.94%	(1.17%)	(0.20%)	(0.89%)	0.78%	5.57%	0.22%	3.05%	9.19%	1.03%
2015	3.33%	(0.62%)	0.37%	(1.30%)	0.95%	(1.06%)	0.33%	(0.96%)	(0.72%)	(0.68%)	2.44%	(3.88%)	(1.97%)	(1.70%)	(1.26%)
2014	(1.35%)	(1.14%)	(0.43%)	(1.07%)	(0.25%)	(0.24%)	0.75%	(0.12%)	4.40%	(2.00%)	0.92%	(0.12%)	(0.79%)	6.50%	5.58%
2013	1.02%	2.32%	0.25%	3.50%	(0.09%)	(3.09%)	(0.82%)	(1.54%)	0.03%	(0.54%)	1.35%	0.42%	2.68%	16.93%	(0.44%)
2012	0.90%	0.24%	(0.39%)	(0.43%)	(1.76%)	(2.22%)	2.37%	1.03%	1.98%	(0.36%)	0.92%	1.68%	3.92%	14.29%	(0.06%)
2011	0.66%	0.51%	0.75%	0.50%	0.63%	(0.54%)	2.21%	6.19%	0.40%	(0.75%)	1.68%	(0.48%)	12.21%	0.91%	(4.16%)
2010	(0.25%)	(1.51%)	0.05%	1.47%	0.33%	1.39%	(2.00%)	1.22%	1.48%	(0.32%)	(0.31%)	(0.48%)	1.00%	15.85%	8.06%
2009	5.11%	3.07%	1.18%	0.09%	3.24%	(0.90%)	1.42%	0.73%	1.57%	1.10%	0.38%	0.39%	18.66%	30.75%	4.34%
2008	9.89%	6.70%	(2.76%)	(2.46%)	0.78%	2.78%	1.16%	0.78%	(3.16%)	2.76%	3.76%	(0.70%)	20.41%	(30.85%)	4.83%
2007	1.99%	0.74%	1.13%	0.89%	0.15%	2.32%	2.60%	3.16%	5.97%	0.15%	2.97%	0.77%	25.21%	3.73%	11.11%
2006	3.68%	1.79%	2.98%	2.86%	(2.75%)	0.93%	1.50%	(1.96%)	0.30%	1.00%	0.59%	(0.15%)	11.10%	17.33%	8.15%
2005	0.56%	(0.01%)	2.31%	(0.10%)	1.37%	1.42%	(0.31%)	0.85%	2.33%	(2.52%)	0.30%	1.77%	8.16%	8.28%	6.79%
2004	2.76%	0.56%	2.70%	2.41%	0.68%	1.66%	1.01%	(0.25%)	(0.53%)	1.29%	1.11%	0.38%	14.61%	15.62%	4.63%
2003				0.31%	3.95%	2.75%	(1.77%)	(2.92%)	2.62%	(1.75%)	(0.51%)	2.09%	4.63%	29.31%	18.87%

Up vs Down Market Analysis



Rolling Window Analysis





Employees' Retirement Fund  
of the City of DALLAS

# **Employees' Retirement Fund of the City of Dallas**

## **Marketable Alternatives Search Update**

May 11, 2021



## ERF Marketable Alternatives manager search

---

- As per Trustee approval at the November 2019 Board meeting, this search is to fulfill the 2.5% allocation to Marketable Alternatives
- The purpose of the allocation is to invest in a diversified set of strategies to achieve outcomes which are integrated and consistent with the ERF asset allocation policy: drive returns; mitigate risk; and provide uncorrelated sources of return (diversifiers)
- ERF received 26 RFPs that met minimum qualifications; that list was then narrowed down to 4 managers for on-site (virtual) due diligence based on the following scoring criteria:
  - Investment philosophy and process (30 points)
  - Organization and team (20)
  - Resources/ implementation (20)
  - Performance/ attribution (20)
  - Fees (10)



**The following 8 managers were narrowed down to 4 for on-site (virtual) due diligence; the 2 highlighted managers are recommended for final presentations to the Board in June**

---

- Arena Special Opportunities Fund LP
- Brevan Howard Fund (due diligence)
- Brevet Direct Lending Short Duration Fund (due diligence)
- Ceres Farms, LLC (due diligence)
- Crabel Advanced Trend Fund
- FORT Global Contrarian L.P. (due diligence)
- Maniyar Macro Portfolio
- TIG Arbitrage Enhanced



## A review of the 2 managers for final presentations

---

### Brevan Howard

- Brevan Howard is a multi-PM macro shop headquartered in the U.K. with five additional offices globally; founded in 2002 by former members of the CSFB Developed Markets Rates trading team led by Alan Howard. The firm manages \$12.2B in AUM and distributes capital across multi- and single-PM funds, currently employing 57 portfolio managers, 38 execution traders, 6 risk officers, 7 economists, and 1 strategist. Each offering at the firm has the explicit goal of capital appreciation through global macro and relative value trading across predominantly fixed income and FX instruments, with lesser allocations to equities, commodities, and credit.
- The Master Fund strategy was launched in early 2003 as a multi-trader, global macro/relative value absolute return fund. The Fund allocates to single-PM funds, opportunistic vehicles, multi-PM funds, and individual traders, with the goal of giving investors exposure to the best traders across the Brevan Howard platform and balancing macro directional and macro relative value strategies. The result is a diversified multi-strategy offering with an underlying global macro trading philosophy and convex return profile, with positive expected returns during difficult market environments for equity hedge, event-driven, and relative value multi-strategy peers.

### Brevet Capital Management

- Brevet is an alternative investment firm founded in 1998 and based in New York City with approximately \$2.1B in AUM; founders pursued similar strategies at Principal Finance Groups at Goldman Sachs, Lehman Brothers, and Deutsche Bank. The Firm's flagship strategy, Brevet Direct Lending – Short Duration Fund, currently has \$829 million in assets and was launched in an evergreen comingled structure in January 2009 following three years of operation as a separate account solution. Brevet employs 62 professionals of which 17 are dedicated to the investment sourcing, structuring, and underwriting efforts.
- The strategy focuses on creating asset-based finance solutions, with a strong bias towards middle market companies whose growth is catalyzed by a federal, state, or municipal government program. The inefficiencies the strategy seeks to capitalize on are driven by sub-optimal capital allocation by governments as well as the perceived complexity of working with governments as a counterparty.





## Recommendations & next steps

---

### *Timeline*

- ✓ As per Board approval in December 2020 staff issued the Marketable Alternatives RFP in January 2021
- ✓ RFP responses sent to ERF by February deadline
- ✓ February/ March – Staff and Wilshire reviewed all RFP responses
- ✓ April 13th – Review managers for due diligence with the Board
- ✓ April/ May – Staff and Wilshire conduct manager due diligence meetings (virtually)
- May 11<sup>th</sup> – Review list of managers for final presentations to the Board
- June 8<sup>th</sup> – Finalists present to the Board; Trustees make final decision on manager selection



## Appendix – RFP Scorecard

Investment Manager Strategy	Brevet Direct Lending Short Duration Fund, L.P. Alternative Income	Ceres Farms LLC Alternative Income	FORT Global Contrarian L.P. CTA - Trend	Brevan Howard Fund Limited Macro - Multi-Strategy
ERF Staff 1	77	60	71	82
ERF Staff 2	93	80	80	92
ERF Staff 3	63	81	62	72
ERF Staff 4	74	70	77	80
<b>Total Average Points</b>	<b>77</b>	<b>73</b>	<b>73</b>	<b>82</b>

# DISCUSSION SHEET

## Employees' Retirement Fund Board of Trustees Meeting

May 11, 2021

- Issue:** Aberdeen Standard Investments Product Closure
- Attachments:** None
- Discussion:** Aberdeen Standard Investments is terminating their Total Return Bond (TRB) product and team at the end of August.
- ERF Staff and Wilshire recommend moving the 6.5% allocation currently with Aberdeen to an index fund until such time as ERF may launch a new manager search.
- Recommendation:** Suggested motion for the approval is as follows: Move to approve the Aberdeen Standard allocation be moved to an index fund.

## ASSET ALLOCATION COMPARISON

April 30, 2021

	Market Value	% of Total Fund	Allocation Policy	% Difference from Allocation	Prior Period Market Value	Prior Period % of Total Fund
<b>EQUITY</b>						
CHANNING CAPITAL	48,742,123.93	1.27			47,061,035.10	1.25
REDWOOD- SL	46,710,388.45	1.21			44,282,878.02	1.18
SYSTEMATIC	91,405,659.92	2.37			89,039,178.87	2.37
<i>Total Small Cap</i>	<b>186,858,172.30</b>	<b>4.85</b>			<b>180,383,091.99</b>	<b>4.80</b>
SMITH GRAHAM	95,593,883.36	2.48			91,895,019.51	2.44
T. ROWE PRICE	168,342,371.05	4.37			159,205,025.82	4.23
<i>Total Domestic/Enhanced equity</i>	<b>263,936,254.41</b>	<b>6.86</b>			<b>251,100,045.33</b>	<b>6.68</b>
NTGI S&P 500 EQUITY INDEX	169,606,099.95	4.41			161,016,229.28	4.28
<i>Total Index</i>	<b>169,606,099.95</b>	<b>4.41</b>			<b>161,016,229.28</b>	<b>4.28</b>
<i>Total Domestic</i>	<b>620,400,526.66</b>	<b>16.12</b>	<b>12.50</b>	<b>3.62</b>	<b>592,499,366.60</b>	<b>15.76</b>
ADELANTE CAPITAL	75,867,001.40	1.97			70,539,203.93	1.88
CENTERSQUARE-SL	76,964,011.54	2.00			71,305,335.85	1.90
<i>Total REITS</i>	<b>152,831,012.94</b>	<b>3.98</b>	<b>2.50</b>	<b>1.48</b>	<b>141,844,539.78</b>	<b>3.78</b>
AEW PARTNERS	1,672,104.00	0.04			1,672,103.00	0.04
HEITMAN	84,487,286.80	2.20			82,461,169.93	2.19
INVESCO	69,511,111.00	1.81			70,113,010.00	1.86
INVESCO - SL	69,749,921.87	1.81			69,261,964.72	1.84
VIRTUS REAL ESTATE CAP	23,534,721.00	0.61			23,534,721.00	0.63
<i>Total Real Estate</i>	<b>248,955,144.67</b>	<b>6.47</b>	<b>7.50</b>	<b>-1.03</b>	<b>247,042,968.65</b>	<b>6.57</b>
FAIRVIEW CAPITAL	56,656,904.00	1.47			50,217,116.00	1.34
GROSVENOR GCM - CFGI	141,044,911.62	3.66			150,591,885.00	4.00
HAMILTON LANE	84,144,885.00	2.19			85,100,886.00	2.26
<i>Total Private Equity</i>	<b>281,846,700.62</b>	<b>7.32</b>	<b>7.50</b>	<b>-0.18</b>	<b>285,909,887.00</b>	<b>7.60</b>
ACADIAN	138,904,418.34	3.61			130,196,893.15	3.46
AQR CAPITAL	135,852,423.83	3.53			133,240,987.71	3.54
ATIVO	41,809,544.93	1.09			40,551,831.46	1.08
BAILLIE GIFFORD	92,652,473.49	2.41			90,087,787.67	2.40
BLACKROCK ACW-EXUS-SL	0.62	0.00			0.62	0.00
EARNEST PARTNERS	95,693,304.70	2.49			92,928,731.07	2.47
GLOBAL TRANSITION ACCOUNT	940.39	0.00			940.39	0.00
<i>Total International</i>	<b>504,913,106.30</b>	<b>13.11</b>	<b>12.50</b>	<b>0.61</b>	<b>487,007,172.07</b>	<b>12.94</b>
ARIEL	113,138,583.91	2.94			111,127,435.18	2.96
NORTHERN TRUST INTL EQ ACWI INDEX	27,097,113.59	0.70			25,955,986.29	0.69
WELLINGTON MGMT	137,535,959.88	3.57			131,075,424.72	3.49
<i>Total Global Equity</i>	<b>277,771,657.38</b>	<b>7.23</b>	<b>7.50</b>	<b>-0.27</b>	<b>268,158,846.19</b>	<b>7.14</b>
ACADIAN-LVG	229,484,121.98	5.96			226,062,536.59	6.01
BLACKROCK	234,077,459.89	6.08			227,734,381.65	6.06
<i>Total Global Low Volatility Equity</i>	<b>463,561,581.87</b>	<b>12.04</b>	<b>12.50</b>	<b>-0.46</b>	<b>453,796,918.24</b>	<b>12.07</b>
ATLANTIC TRUST	70,866,098.09	1.84			66,648,783.12	1.77
HARVEST FUND	70,262,949.35	1.83			66,320,942.65	1.76
COHEN & STEERS	65,271,894.65	1.70			62,516,066.40	1.66
<i>Total Global Listed Infrastructure</i>	<b>206,400,942.09</b>	<b>5.35</b>	<b>5.00</b>	<b>0.35</b>	<b>195,485,792.17</b>	<b>5.19</b>
<i>Total Marketable Alternatives</i>	-	0.00	2.50	-2.50	-	0.00
<b>TOTAL EQUITY</b>	<b>2,756,680,672.53</b>	<b>71.62</b>	<b>70.00</b>	<b>1.62</b>	<b>2,671,745,490.70</b>	<b>71.05</b>
<b>FIXED INCOME</b>						
ABERDEEN ASSET MGMT	219,508,018.61	5.70			217,284,054.27	5.78
GARCIA HAMILTON	66,180,108.14	1.72			65,896,084.90	1.75
SECURIAN ASSET MANAGEMENT	220,370,601.47	5.73			218,353,797.59	5.81
<i>Total Investment Grade</i>	<b>506,058,728.22</b>	<b>13.15</b>	<b>15.00</b>	<b>-1.85</b>	<b>501,533,936.76</b>	<b>13.34</b>
NEUBERGER BERMAN	181,508,763.71	4.72			179,206,164.18	4.77
<i>Total Opportunistic Credit</i>	<b>181,508,763.71</b>	<b>4.72</b>	<b>5.00</b>	<b>-0.28</b>	<b>179,206,164.18</b>	<b>4.77</b>
BLACKROCK-HY	181,631,475.30	4.72			180,108,405.10	4.79
OAKTREE	185,137,749.62	4.81			182,675,822.25	4.86
<i>Total High Yield</i>	<b>366,769,224.92</b>	<b>9.53</b>	<b>10.00</b>	<b>-0.47</b>	<b>362,784,227.35</b>	<b>9.65</b>
CASH ACCOUNT	38,026,181.19	0.99			45,049,733.20	1.20
<i>Total Short Term</i>	<b>38,026,181.19</b>	<b>0.99</b>	<b>0.00</b>	<b>0.99</b>	<b>45,049,733.20</b>	<b>1.20</b>
<b>TOTAL FIXED INCOME</b>	<b>1,092,362,898.04</b>	<b>28.38</b>	<b>30.00</b>	<b>-1.62</b>	<b>1,088,574,061.49</b>	<b>28.38</b>

TOTAL FUND \$ 3,849,043,570.57

\$ 3,760,319,552.19

Market Value YE 2020 \$ 3,662,162,799.23

Market Value Variance

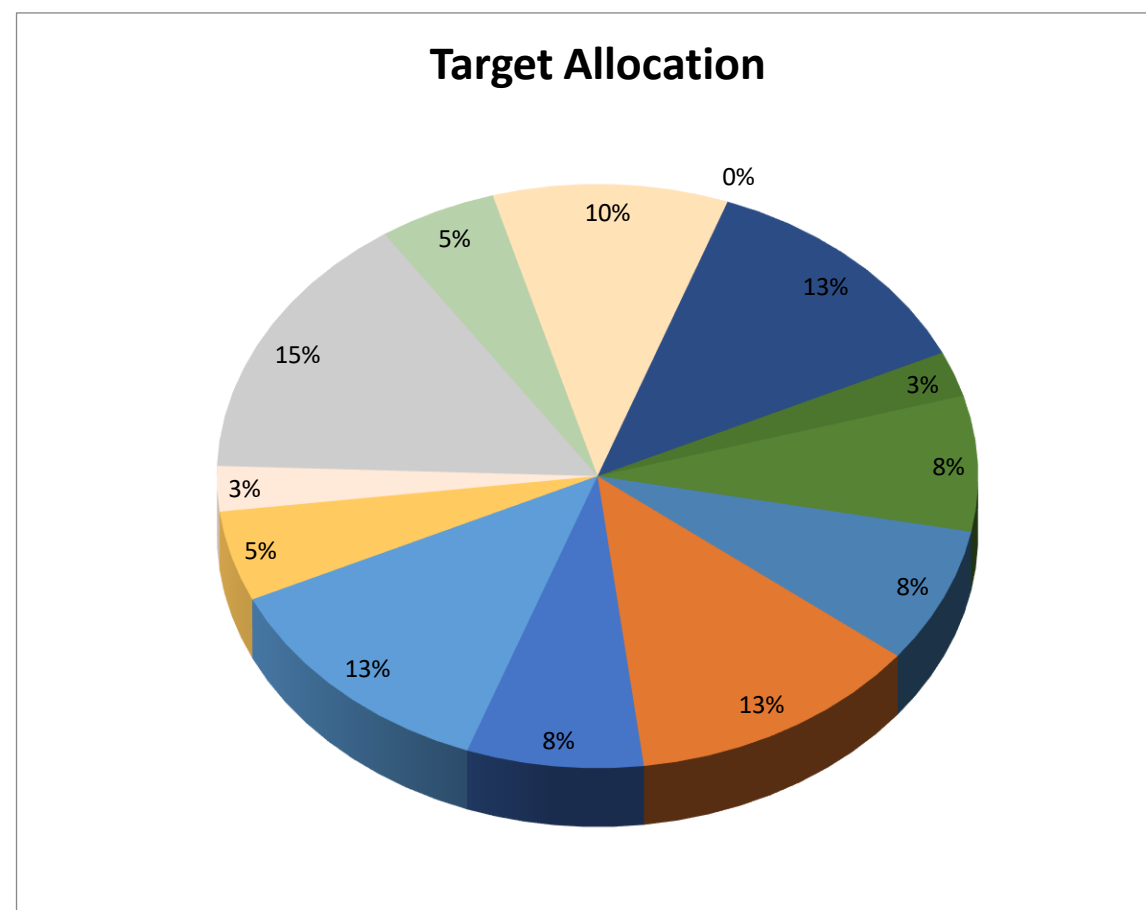
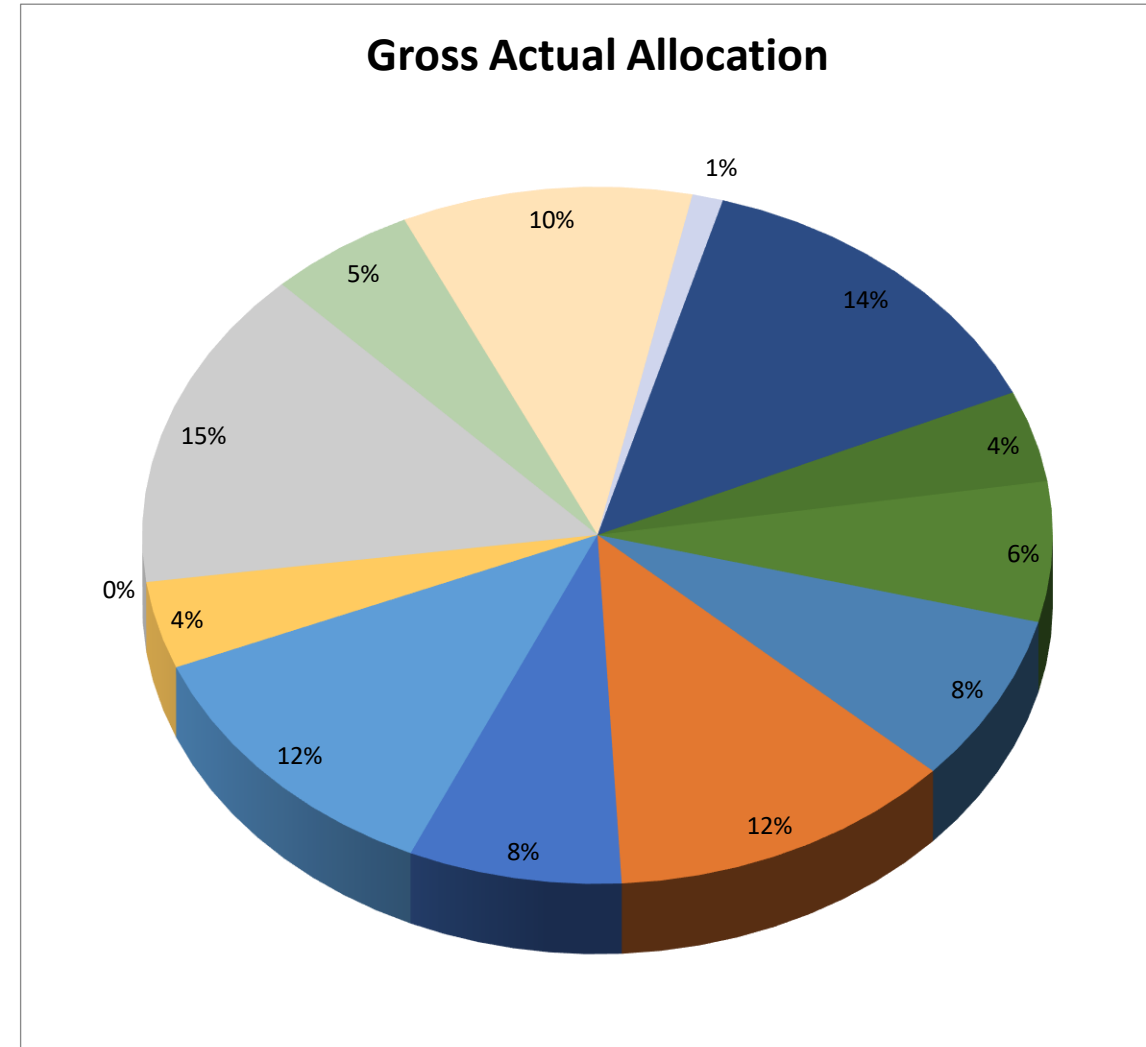
Change from YE 2020: \$ 186,880,771.34

Change from prior month: \$ 88,724,018.38

**Asset Allocation: Actual vs. Target**

April 30, 2021

	Market Value	Gross Actual Allocation	Target Allocation	% Difference from Allocation
<b>EQUITY</b>				
CHANNING CAPITAL	48,742,123.93	1.27		
REDWOOD- SL	46,710,388.45	1.21		
SYSTEMATIC	91,405,659.92	2.37		
<i>Total Small Cap</i>	186,858,172.30	4.85		
SMITH GRAHAM	95,593,883.36	2.48		
T. ROWE PRICE	168,342,371.05	4.37		
<i>Total Domestic/Enhanced equity</i>	263,936,254.41	6.86		
NTGI S&P 500 EQUITY INDEX	169,606,099.95	4.41		
<i>Total Index</i>	169,606,099.95	4.41		
<i>Total Domestic</i>	620,400,526.66	16.12	12.50	3.62
ADELANTE CAPITAL	75,867,001.40	1.97		
CENTERSQUARE-SL	76,964,011.54	2.00		
<i>Total REITS</i>	152,831,012.94	3.98	2.50	1.48
AEW PARTNERS	1,672,104.00	0.04		
HEITMAN	84,487,286.80	2.20		
INVESCO	69,511,111.00	1.81		
INVESCO - SA	69,749,921.87	1.81		
VIRTUS REAL ESTATE CAP	23,534,721.00	0.61		
<i>Total Real Estate</i>	248,955,144.67	6.47	7.50	-1.03
FAIRVIEW CAPITAL	56,656,904.00	1.47		
GROSVENOR GCM - CFG	141,044,911.62	3.66		
HAMILTON LANE	84,144,885.00	2.19		
<i>Total Private Equity</i>	281,846,700.62	7.32	7.50	-0.18
ACADIAN	138,904,418.34	3.61		
AQR CAPITAL	135,852,423.83	3.53		
ATIVO	41,809,544.93	1.09		
BAILLIE GIFFORD	92,652,473.49	2.41		
BLACKROCK ACW-EXUS-SL	0.62	0.00		
EARNEST PARTNERS	95,693,304.70	2.49		
GLOBAL TRANSITION ACCOUNT	940.39	0.00		
<i>Total International</i>	504,913,106.30	13.12	12.50	0.61
ARIEL	113,138,583.91	2.94		
NORTHERN TRUST INTL EQ ACWI INDEX	27,097,113.59	0.70		
WELLINGTON MGMT	137,535,959.88	3.57		
<i>Total Global Equity</i>	277,771,657.38	7.22	7.50	-0.27
ACADIAN-LVG	229,484,121.98	5.96		
BLACKROCK	234,077,459.89	6.08		
<i>Total Global Low Volatility Equity</i>	463,561,581.87	12.04	12.50	-0.46
ATLANTIC TRUST	70,866,098.09	1.84		
HARVEST FUND	70,262,949.35	1.83		
COHEN & STEERS	65,271,894.65	1.70		
<i>Total Global Listed Infrastructure</i>	206,400,942.09	5.35	5.00	0.35
<i>Total Marketable Alternatives</i>	-	0.00	2.50	-2.50
<b>TOTAL EQUITY</b>	<b>2,756,680,672.53</b>	<b>71.62</b>	<b>70.00</b>	<b>1.62</b>
<b>FIXED INCOME</b>				
ABERDEEN ASSET MGMT	219,508,018.61	5.70		
GARCIA HAMILTON	66,180,108.14	1.72		
SECURIAN ASSET MANAGEMENT	220,370,601.47	5.73		
<i>Total Investment Grade</i>	506,058,728.22	13.15	15.00	-1.85
NEUBERGER BERMAN	181,508,763.71	4.72		
<i>Total Opportunistic Credit</i>	181,508,763.71	4.72	5.00	-0.28
BLACKROCK-HY	181,631,475.30	4.72		
OAKTREE	185,137,749.62	4.81		
<i>Total High Yield</i>	366,769,224.92	9.53	10.00	-0.47
CASH ACCOUNT	38,026,181.19	0.99		
<i>Total Short Term</i>	38,026,181.19	0.99	0.00	0.99
<b>TOTAL FIXED INCOME</b>	<b>1,092,362,898.04</b>	<b>28.38</b>	<b>30.00</b>	<b>-1.62</b>
<b>TOTAL FUND</b>	<b>\$ 3,849,043,570.57</b>			





WILSHIRE

Wilshire Consulting

A horizontal banner image showing a close-up of a modern building's facade with white architectural details and a blue sky background.

## Employees' Retirement Fund of the City of Dallas

Monthly Investment Summary

*April 30, 2021*

Wilshire

# MARKET COMMENTARY

*Month Ended April 30, 2021*

## **U.S. Economy and Markets**

- Domestic equity markets were positive in April, as the Wilshire 5000 Total Market Index<sup>SM</sup> and the S&P 500 Index returned 5.28% and 5.34%, respectively.
- The CBOE Volatility Index (VIX) ended April at 18.61, a decrease from its March close of 19.40 and the lowest level since December 2019.
- Performance across GICS sectors was positive for the month, with the Communications and Real Estate sectors leading the group, gaining 8.42% and 7.97%, respectively. The Energy and Consumer Staples sectors lagged but were still positive at 0.57% and 2.20%, respectively.
- Small cap stocks underperformed their large cap counterparts in April, with the Wilshire U.S. Small Cap Index<sup>SM</sup> and the Wilshire U.S. Large Cap Index<sup>SM</sup> returning 2.97% and 5.52%, respectively.
- Value-oriented equities underperformed their growth-oriented counterparts in the large capitalization segment but led within small capitalization stocks.

## **International Economy and Markets**

- Developed international equity markets, as measured by the MSCI EAFE Index, returned 3.01% this month.
- The MSCI Emerging Markets Index gained 2.49% in April.

## **Fixed Income & Real Assets**

- The 10-year U.S. Treasury yield ended the month at 1.65%, a decrease from its March close of 1.74%.
- The Bloomberg Barclays U.S. Aggregate Index posted a gain of 0.79% in April.
- Long duration bonds were the best performing segment within U.S. fixed income, with the Bloomberg Barclays Long-Term Treasury Index returning 2.33%. Leveraged loans were positive but underperformed other segments, with the S&P/LSTA Leveraged Loan Index returning 0.51%.
- Listed U.S. real estate posted positive returns in April, with the Wilshire U.S. Real Estate Securities Index<sup>SM</sup> returning 7.99%. Listed global infrastructure was up, as well, with the S&P Global Infrastructure Index gaining 3.54%.
- Commodities, as measured by the Bloomberg Commodity Index, advanced 8.29% in April.

# Monthly Index Performance

Periods Ended April 30, 2021

	Performance (%)				
	1 Month	YTD	1 Year	3 Years	5 Years
<b>U.S. Equity</b>					
Wilshire 5000 Total Market TR Index	5.28	12.11	50.81	19.05	17.76
S&P 500	5.34	11.84	45.98	18.67	17.42
Wilshire 4500 Completion Index	4.46	13.53	79.94	20.09	18.99
MSCI USA Minimum Volatility Index	4.06	6.46	24.34	13.90	12.90
<b>U.S. Equity by Size/Style</b>					
Wilshire U.S. Large-Cap Index	5.52	11.64	48.82	19.78	18.17
Wilshire U.S. Large-Cap Growth Index	7.57	9.68	55.77	23.12	21.85
Wilshire U.S. Large-Cap Value Index	3.09	13.20	40.32	14.80	13.57
Wilshire U.S. Small-Cap Index	2.97	16.89	74.85	15.44	15.77
Wilshire U.S. Small-Cap Growth Index	2.80	12.04	75.47	17.96	18.72
Wilshire U.S. Small-Cap Value Index	3.13	21.91	73.76	12.18	12.36
Wilshire U.S. Micro-Cap Index	0.64	28.02	96.30	14.08	15.83
<b>Non-U.S. Equity (USD)</b>					
MSCI AC World ex USA (Net)	2.94	6.54	42.98	6.98	9.83
MSCI ACWI ex USA Minimum Volatility Index (Net)	1.58	2.16	17.43	4.11	5.93
MSCI EAFE Index (Net)	3.01	6.59	39.88	6.27	8.87
MSCI Emerging Markets (Net)	2.49	4.83	48.71	7.51	12.50
MSCI AC World ex USA Small Cap (Net)	4.59	10.38	58.37	7.80	10.79
<b>U.S. Fixed Income</b>					
Blmbg. Barc. U.S. Aggregate	0.79	-2.61	-0.27	5.19	3.19
Blmbg. Barc. U.S. Treasury: Long	2.33	-11.50	-15.55	7.38	3.71
Blmbg. Barc. U.S. Long Corporate Index	1.73	-6.92	3.39	9.01	6.71
Blmbg. Barc. U.S. TIPS	1.40	-0.09	6.09	6.19	4.08
Blmbg. Barc. U.S. Credit Index	1.06	-3.44	4.25	6.65	4.63
Blmbg. Barc. U.S. Corp: High Yield	1.09	1.95	19.67	7.00	7.46
S&P LSTA Leverage Loan Index					



# Asset Allocation & Performance

Dallas Total Fund

Periods Ended April 30, 2021

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
Global Equity Composite	3.59	7.85	7.28	36.62	11.05	12.71	10.57	9/1/2012	277,771,657	7.22
Global Low Volatility Composite	2.15	5.86	4.79	19.66	7.50	8.31	8.38	7/1/2015	463,561,582	12.05
Domestic Equity Composite	4.71	16.40	16.83	60.83	17.18	17.06	10.82	1/1/1990	620,400,527	16.12
International Equity Composite	3.71	9.44	9.59	53.48	8.50	11.51	6.15	1/1/1990	504,913,106	13.12
Global Fixed Income Composite	0.90	-1.52	-1.97	3.78	5.59	3.87	5.05	10/1/1995	506,058,728	13.15
High Yield Composite	0.90	1.52	1.57	18.45	6.33	6.52	6.52	1/1/1997	366,769,225	9.53
Credit Opportunities Composite	1.29	0.96	0.99	20.06	5.37	5.98	6.79	2/1/2016	181,508,764	4.72
Total Real Estate Composite	2.81	6.41	6.28	12.68	7.42	5.97	6.58	1/1/1990	400,132,867	10.40
Global Listed Infrastructure Composite	5.58	16.33	19.63	27.08	-3.54	-0.94	2.59	1/1/2012	206,400,942	5.36
Private Equity Composite	1.92	8.14	8.72	8.58	11.19	11.79	12.95	6/1/2009	281,972,091	7.33
Managed Short Term Composite	0.00	0.02	0.03	0.11	1.45	1.18	2.83	1/1/1990	38,026,181	0.99
Dallas Total Fund	2.74	6.99	7.01	25.86	8.40	8.83	9.12	1/1/1985	3,847,515,671	100.00
Policy Index	2.98	6.99	6.76	26.79	9.27	9.04	9.73			

# Asset Allocation & Performance

Dallas Total Fund

Periods Ended April 30, 2021

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
<b>Systematic Financial</b> Russell 2000 Index	<b>2.66</b> 2.10	<b>20.39</b> 9.55	<b>23.65</b> 15.07	<b>71.58</b> 74.91	<b>11.59</b> 15.23	<b>15.52</b> 16.48	<b>11.65</b> 10.65	<b>8/1/2003</b>	<b>91,405,660</b>	<b>14.73</b>
<b>Redwood Investments *</b> Russell 2000 Growth Index	<b>5.48</b> 2.18	<b>11.81</b> 2.23	<b>15.30</b> 7.16	<b>75.12</b> 69.15	<b>20.18</b> 17.97		<b>16.34</b> 17.90	<b>10/1/2016</b>	<b>46,710,388</b>	<b>7.53</b>
<b>Channing Capital *</b> Russell 2000 Value Index	<b>3.57</b> 2.02	<b>20.56</b> 17.44	<b>19.02</b> 23.62	<b>83.30</b> 78.96	<b>12.60</b> 11.68	<b>13.65</b> 13.54	<b>9.58</b> 9.24	<b>12/1/2013</b>	<b>48,742,124</b>	<b>7.86</b>
<b>Domestic Equity Small Cap Composite</b>	<b>3.59</b>	<b>18.16</b>	<b>20.25</b>	<b>76.01</b>	<b>14.19</b>	<b>15.92</b>	<b>10.77</b>	<b>6/1/2003</b>	<b>186,858,172</b>	<b>30.12</b>
<b>Smith Graham *</b> Russell Midcap Index	<b>4.03</b> 5.10	<b>25.22</b> 13.95	<b>30.64</b> 13.65	<b>91.01</b> 59.57	<b>13.53</b> 16.71		<b>12.30</b> 14.71	<b>1/1/2018</b>	<b>95,593,883</b>	<b>15.41</b>
<b>T. Rowe Price</b> S&P 500	<b>5.74</b> 5.34	<b>13.45</b> 12.98	<b>11.62</b> 11.84	<b>48.30</b> 45.98	<b>19.27</b> 18.67	<b>18.36</b> 17.42	<b>10.94</b> 10.34	<b>4/1/2006</b>	<b>168,342,371</b>	<b>27.13</b>
<b>Northern Trust S&amp;P 500 (Lending)</b> S&P 500	<b>5.33</b> 5.34	<b>12.98</b> 12.98	<b>11.84</b> 11.84	<b>45.75</b> 45.98	<b>18.64</b> 18.67	<b>17.39</b> 17.42	<b>10.89</b> 10.85	<b>1/1/1995</b>	<b>169,606,100</b>	<b>27.34</b>
<b>Domestic Equity Composite</b> Custom Benchmark	<b>4.71</b> 5.28	<b>16.40</b> 12.48	<b>16.83</b> 12.11	<b>60.83</b> 50.81	<b>17.18</b> 19.05	<b>17.06</b> 17.76	<b>10.82</b> 10.89	<b>1/1/1990</b>	<b>620,400,527</b>	<b>100.00</b>

# Asset Allocation & Performance

Dallas Total Fund

Periods Ended April 30, 2021

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
<b>Adelante Capital Management</b>	<b>7.55</b>	<b>16.27</b>	<b>17.51</b>	<b>35.51</b>	<b>12.42</b>	<b>8.00</b>	<b>10.05</b>	<b>10/1/2001</b>	<b>75,867,001</b>	<b>18.96</b>
Wilshire U.S. Real Estate Securities Index	7.99	16.96	17.53	34.33	11.33	7.36	10.21			
<b>CenterSquare</b>	<b>7.94</b>	<b>17.83</b>	<b>17.28</b>	<b>38.22</b>			<b>12.18</b>	<b>6/1/2018</b>	<b>76,964,012</b>	<b>19.23</b>
Wilshire U.S. Real Estate Securities Index	7.99	16.96	17.53	34.33			10.31			
<b>REIT Composite</b>	<b>7.75</b>	<b>17.05</b>	<b>17.39</b>	<b>36.86</b>	<b>12.78</b>	<b>7.95</b>	<b>10.18</b>	<b>10/1/2001</b>	<b>152,831,013</b>	<b>38.20</b>
Wilshire U.S. Real Estate Securities Index	7.99	16.96	17.53	34.33	11.33	7.36	10.21			
<b>Heitman America Real Estate Trust, LP</b>	<b>0.00</b>	<b>2.45</b>	<b>2.45</b>	<b>2.64</b>	<b>2.10</b>	<b>4.17</b>	<b>8.96</b>	<b>12/1/2010</b>	<b>83,244,278</b>	<b>20.80</b>
NCREIF ODCE NOF	0.00	1.89	1.89	1.47	3.96	5.26	9.18			
<b>Invesco Core Real Estate USA, LLC</b>	<b>0.00</b>	<b>1.52</b>	<b>1.52</b>	<b>-1.71</b>	<b>4.39</b>	<b>6.35</b>	<b>9.57</b>	<b>12/1/2010</b>	<b>69,339,640</b>	<b>17.33</b>
NCREIF ODCE NOF	0.00	1.89	1.89	1.47	3.96	5.26	9.18			
<b>Virtus Real Estate Capital III</b>	<b>0.00</b>	<b>0.00</b>					<b>0.00</b>	<b>2/1/2021</b>	<b>23,534,721</b>	<b>5.88</b>
NCREIF ODCE NOF	0.00	1.89					1.89			
<b>AEW Partners Real Estate Fund IX</b>	<b>0.00</b>						<b>0.00</b>	<b>4/1/2021</b>	<b>1,672,104</b>	<b>0.42</b>
NCREIF ODCE NOF	0.00						0.00			
<b>Private Core Real Estate Composite</b>	<b>0.00</b>	<b>0.78</b>	<b>0.35</b>	<b>0.10</b>	<b>4.11</b>	<b>4.80</b>	<b>8.67</b>	<b>10/1/2010</b>	<b>247,301,854</b>	<b>61.80</b>
Custom Benchmark	0.00	1.11	1.11	1.56	4.90	5.10	8.33			
<b>Total Real Estate Composite</b>	<b>2.81</b>	<b>6.41</b>	<b>6.28</b>	<b>12.68</b>	<b>7.42</b>	<b>5.97</b>	<b>6.58</b>	<b>1/1/1990</b>	<b>400,132,867</b>	<b>100.00</b>
Custom Benchmark	4.00	8.86	9.12	17.14	8.64	6.63	8.57			

**Employees' Retirement Fund of the City of Dallas**  
**Private Equity & Direct Private Real Estate Monthly Performance and Market Value Summary**



Periods Ended 04/30/21

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	Multiple <sup>3</sup>
Invesco II	69,511,111	65,188,333	65,188,333	8,208,120	Jan-14	3.9%	1.2
<b>Total Direct Private Real Estate</b>	<b>69,511,111</b>	<b>65,188,333</b>	<b>65,188,333</b>	<b>8,208,120</b>	<b>Jan-14</b>	<b>3.9%</b>	<b>1.2</b>

	Month-End Market Value	Commitment Value	Drawn Down Capital	Cash Distributions	Inception Date	IRR Since Inception	Multiple <sup>3</sup>
Hamilton Lane Secondary Fund II	529,889	25,000,000	22,058,532	31,007,605	Jul-09	13.6%	1.4
Hamilton Lane Secondary Fund III	6,654,920	30,000,000	23,372,292	23,738,447	Nov-12	9.8%	1.3
Hamilton Lane Secondary Fund IV	18,127,963	30,000,000	25,907,343	15,580,777	Mar-17	15.3%	1.3
Hamilton Lane Secondary Fund V	20,305,160	40,000,000	16,415,282	-	Mar-20	52.5%	1.2
Hamilton Lane Fund VII Composite	19,613,405	50,000,000	45,600,834	46,451,533	Jan-10	5.6%	1.4
Hamilton Lane Fund VIII (Global)	18,913,548	30,000,000	22,162,244	8,792,766	Nov-12	4.9%	1.3
GCM Grosvenor - Partnership, L.P.	33,210,251	75,000,000	85,610,430	105,346,691	Jun-11	14.0%	1.6
GCM Grosvenor - Partnership II, L.P. (2014)	53,306,693	60,000,000	69,559,751	42,836,147	Jul-14	12.9%	1.4
GCM Grosvenor - Partnership II, L.P. (2015)	37,704,342	30,000,000	32,126,901	8,282,014	Dec-15	15.1%	1.2
GCM Grosvenor - Partnership II, L.P. (2017)	16,949,016	30,000,000	17,458,710	1,285,521	Jan-18	4.0%	1.0
Fairview Capital - Lone Star Fund I	45,375,790	40,000,000	34,053,847	3,616,399	Aug-15	13.7%	1.4
Fairview Capital - Lone Star Fund II	10,736,560	30,000,000	8,792,396	-	Dec-18	1.2%	1.2
Fairview Capital - Lone Star Fund III	544,554	25,000,000	544,554	-	Apr-21	-	1.0
<b>Total Private Equity Composite</b>	<b>281,972,091</b>	<b>495,000,000</b>	<b>403,663,117</b>	<b>286,937,900</b>	<b>Jul-09</b>	<b>11.7%</b>	<b>1.4</b>

**Public Market Equivalent (PME) <sup>2</sup>**

**467,821,232**

**18.7%**

\* Next Generation Manager

<sup>1</sup> Total Value to Paid-in Capital ("TVPI") multiple calculation = (market value + distributions) / capital called

<sup>2</sup> The Public Market Equivalent (PME) approach creates a hypothetical investment vehicle that mimics the private equity composite cash flows. The performance difference between the PME vehicle and the private equity portfolio is determined by their net asset value (NAV) at the end of the benchmarking period. The performance of the "public market" is simulated using the monthly S&P 500 index returns, plus a 300 BPs annual hurdle rate.

<sup>3</sup> Private Equity cash account

# Asset Allocation & Performance

Dallas Total Fund

Periods Ended April 30, 2021

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
<b>Acadian International</b> Custom Benchmark	<b>6.69</b> 4.59	<b>16.17</b> 10.57	<b>16.15</b> 10.38	<b>63.95</b> 58.37	<b>8.60</b> 7.80	<b>13.28</b> 10.79	<b>8.96</b> 6.51	<b>4/1/1989</b>	<b>138,904,418</b>	<b>27.51</b>
<b>Ativo International *</b> MSCI EAFE Index (Net)	<b>3.10</b> 3.01	<b>9.59</b> 7.74	<b>7.91</b> 6.59	<b>37.43</b> 39.88	<b>5.30</b> 6.27		<b>5.05</b> 5.86	<b>1/1/2018</b>	<b>41,809,545</b>	<b>8.28</b>
<b>AQR Capital Management</b> Custom Benchmark	<b>2.08</b> 2.94	<b>8.19</b> 6.31	<b>9.13</b> 6.54	<b>46.23</b> 42.98	<b>6.18</b> 6.98	<b>10.08</b> 9.83	<b>4.65</b> 4.05	<b>4/1/2006</b>	<b>135,852,424</b>	<b>26.91</b>
<b>Baillie Gifford</b> MSCI AC World ex USA (Net)	<b>2.85</b> 2.94	<b>4.35</b> 6.31	<b>4.71</b> 6.54	<b>53.04</b> 42.98			<b>23.56</b> 13.36	<b>4/1/2019</b>	<b>92,652,473</b>	<b>18.35</b>
<b>Earnest Partners</b> MSCI AC World ex USA (Net)	<b>2.98</b> 2.94	<b>7.27</b> 6.31	<b>7.04</b> 6.54	<b>55.80</b> 42.98			<b>14.81</b> 13.36	<b>4/1/2019</b>	<b>95,693,305</b>	<b>18.95</b>
<b>BlackRock ACWI Ex U.S.</b>									<b>1</b>	<b>0.00</b>
<b>International Equity Composite</b> Custom Benchmark	<b>3.71</b> 3.17	<b>9.44</b> 6.88	<b>9.59</b> 7.06	<b>53.48</b> 44.94	<b>8.50</b> 7.08	<b>11.51</b> 9.95	<b>6.15</b> 5.06	<b>1/1/1990</b>	<b>504,913,106</b>	<b>100.00</b>

# Asset Allocation & Performance

Dallas Total Fund

Periods Ended April 30, 2021

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
<b>Ariel Global *</b>	<b>1.81</b>	<b>5.00</b>	<b>6.05</b>	<b>22.28</b>	<b>7.47</b>		<b>7.52</b>	<b>1/1/2018</b>	<b>113,138,584</b>	<b>40.73</b>
MSCI AC World Index (Net)	4.37	9.64	9.14	45.75	13.32		11.91			
<b>Wellington</b>	<b>4.93</b>	<b>9.90</b>	<b>7.79</b>	<b>47.40</b>	<b>13.55</b>	<b>13.84</b>	<b>13.51</b>	<b>9/1/2012</b>	<b>137,535,960</b>	<b>49.51</b>
MSCI AC World Index (Net)	4.37	9.64	9.14	45.75	13.32	13.85	11.55			
<b>Northern Trust Global Equity</b>	<b>4.40</b>	<b>10.06</b>	<b>9.78</b>	<b>48.84</b>	<b>13.74</b>	<b>14.31</b>	<b>14.13</b>	<b>10/1/2015</b>	<b>27,097,114</b>	<b>9.76</b>
MSCI AC World IMI (Net)	4.34	9.89	9.70	48.11	13.15	13.82	13.64			
<b>Global Equity Composite</b>	<b>3.59</b>	<b>7.85</b>	<b>7.28</b>	<b>36.62</b>	<b>11.05</b>	<b>12.71</b>	<b>10.57</b>	<b>9/1/2012</b>	<b>277,771,657</b>	<b>100.00</b>
MSCI AC World Index (Net)	4.37	9.64	9.14	45.75	13.32	13.85	11.55			

# Asset Allocation & Performance

Dallas Total Fund

Periods Ended April 30, 2021

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
<b>Acadian Global Low Vol.</b>	<b>1.52</b>	<b>5.37</b>	<b>4.96</b>	<b>19.81</b>	<b>6.17</b>	<b>7.64</b>	<b>7.74</b>	<b>7/1/2015</b>	<b>229,484,122</b>	<b>49.50</b>
MSCI AC World Index (Net)	4.37	9.64	9.14	45.75	13.32	13.85	11.13			
MSCI ACWI Minimum Volatility Index (Net)	2.72	6.20	4.49	18.88	8.80	8.74	8.72			
<b>BlackRock Global Low Vol.</b>	<b>2.78</b>	<b>6.34</b>	<b>4.62</b>	<b>19.50</b>	<b>8.82</b>	<b>8.97</b>	<b>9.00</b>	<b>7/1/2015</b>	<b>234,077,460</b>	<b>50.50</b>
MSCI ACWI Minimum Volatility Index (Net)	2.72	6.20	4.49	18.88	8.80	8.74	8.72			
<b>Global Low Volatility Composite</b>	<b>2.15</b>	<b>5.86</b>	<b>4.79</b>	<b>19.66</b>	<b>7.50</b>	<b>8.31</b>	<b>8.38</b>	<b>7/1/2015</b>	<b>463,561,582</b>	<b>100.00</b>
MSCI ACWI Minimum Volatility Index (Net)	2.72	6.20	4.49	18.88	8.80	8.74	8.72			

# Asset Allocation & Performance

Dallas Total Fund

Periods Ended April 30, 2021

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
<b>Atlantic Trust CIBC</b> Alerian MLP Index	<b>6.33</b> 7.15	<b>19.74</b> 23.45	<b>24.79</b> 30.67	<b>40.23</b> 45.47	<b>-0.88</b> -3.27	<b>0.73</b> -2.00	<b>3.68</b> -1.02	<b>1/1/2012</b>	<b>70,866,098</b>	<b>34.33</b>
<b>Harvest Fund Advisors MLP</b> Alerian MLP Index	<b>5.94</b> 7.15	<b>19.08</b> 23.45	<b>25.75</b> 30.67	<b>41.58</b> 45.47	<b>0.55</b> -3.27	<b>1.47</b> -2.00	<b>3.47</b> -1.02	<b>1/1/2012</b>	<b>70,262,949</b>	<b>34.04</b>
<b>C&amp;S Global Listed Infrastructure</b> FTSE Global Core Infrastructure 50/50 (Net)	<b>4.41</b> 3.44	<b>9.69</b> 9.72	<b>8.02</b> 7.66				<b>16.69</b> 17.59	<b>11/1/2020</b>	<b>65,271,895</b>	<b>31.62</b>
<b>Global Listed Infrastructure Composite</b> Global Listed Infrastructure Benchmark	<b>5.58</b> 6.22	<b>16.33</b> 19.96	<b>19.63</b> 24.65	<b>27.08</b> 33.91	<b>-3.54</b> -5.90	<b>-0.94</b> -3.61	<b>2.59</b> -1.90	<b>1/1/2012</b>	<b>206,400,942</b>	<b>100.00</b>



# Asset Allocation & Performance

Dallas Total Fund

Periods Ended April 30, 2021

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
<b>Securian Asset Management</b>	<b>0.92</b>	<b>-1.19</b>	<b>-1.58</b>	<b>4.67</b>	<b>5.32</b>	<b>3.97</b>	<b>4.67</b>	<b>7/1/2007</b>	<b>220,370,601</b>	<b>43.55</b>
Blmbg. Barc. U.S. Aggregate	0.79	-1.91	-2.61	-0.27	5.19	3.19	4.28			
<b>Aberdeen Global Fixed Income</b>	<b>1.03</b>	<b>-1.72</b>	<b>-2.12</b>	<b>3.72</b>	<b>6.20</b>	<b>4.02</b>	<b>4.89</b>	<b>5/1/2007</b>	<b>219,508,019</b>	<b>43.38</b>
Blmbg. Barc. U.S. Aggregate	0.79	-1.91	-2.61	-0.27	5.19	3.19	4.15			
<b>Garcia Hamilton *</b>	<b>0.43</b>	<b>-1.94</b>	<b>-2.75</b>	<b>1.13</b>	<b>4.46</b>	<b>3.10</b>	<b>3.57</b>	<b>11/1/2013</b>	<b>66,180,108</b>	<b>13.08</b>
Blmbg. Barc. U.S. Aggregate	0.79	-1.91	-2.61	-0.27	5.19	3.19	3.31			
<b>Global Fixed Income Composite</b>	<b>0.90</b>	<b>-1.52</b>	<b>-1.97</b>	<b>3.78</b>	<b>5.59</b>	<b>3.87</b>	<b>5.05</b>	<b>10/1/1995</b>	<b>506,058,728</b>	<b>100.00</b>
Blmbg. Barc. U.S. Aggregate	0.79	-1.91	-2.61	-0.27	5.19	3.19	5.10			

# Asset Allocation & Performance

Dallas Total Fund

Periods Ended April 30, 2021

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
<b>Neuberger Berman</b>	<b>1.29</b>	<b>0.96</b>	<b>0.99</b>	<b>20.06</b>	<b>5.37</b>	<b>5.98</b>	<b>6.79</b>	<b>2/1/2016</b>	<b>181,508,764</b>	
Custom Benchmark	1.27	0.46	0.63	17.40	5.41	5.84	6.89			

# Asset Allocation & Performance

Dallas Total Fund

Periods Ended April 30, 2021

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
<b>Oaktree Capital Management</b> FTSE High Yield Cash Pay	<b>0.95</b> 1.07	<b>1.52</b> 1.67	<b>1.72</b> 1.96	<b>19.75</b> 20.34	<b>5.98</b> 6.58	<b>6.27</b> 7.18	<b>6.71</b> 6.87	<b>2/1/1997</b>	<b>185,137,750</b>	<b>50.48</b>
<b>BlackRock</b> FTSE High Yield Cash Pay	<b>0.85</b> 1.07	<b>1.51</b> 1.67	<b>1.41</b> 1.96	<b>17.12</b> 20.34	<b>6.66</b> 6.58	<b>6.77</b> 7.18	<b>6.49</b> 6.96	<b>10/1/2006</b>	<b>181,631,475</b>	<b>49.52</b>
<b>High Yield Composite</b> FTSE High Yield Cash Pay	<b>0.90</b> 1.07	<b>1.52</b> 1.67	<b>1.57</b> 1.96	<b>18.45</b> 20.34	<b>6.33</b> 6.58	<b>6.52</b> 7.18	<b>6.52</b> 6.88	<b>1/1/1997</b>	<b>366,769,225</b>	<b>100.00</b>

# Asset Allocation & Performance

Dallas Total Fund

Periods Ended April 30, 2021

	Performance (%) net of fees								Allocation	
	1 Month	1 Quarter	YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date	Market Value \$	%
<b>Cash Account</b>	0.00	0.02	0.03	0.11	1.45	1.18	3.18	1/1/1988	38,026,181	100.00
<b>Managed Short Term Composite</b>	0.00	0.02	0.03	0.11	1.45	1.18	2.83	1/1/1990	38,026,181	100.00

# At A Glance

For period ended April 30, 2021

	2020		2021	
	This Month	YTD	This Month	YTD
<b>Retirements</b>				
Age	16	62	14	73
Service	3	11	1	11
Rule of 78	4	30	10	38
QDRO	1	2	0	0
<i>Total</i>	24	105	25	122
<b>Disability Retirements</b>				
Service	0	0	0	0
Non-service	0	3	0	3
<i>Total</i>	0	3	0	3
<b>Benefits Paid</b>	\$ 23,523,905.50	\$ 94,195,250.75	\$ 24,666,822.64	\$ 98,027,451.26
<b>Refunds</b>	\$ 485,228.32	\$ 2,633,592.40	\$ 1,012,921.46	\$ 2,898,179.14
<b>Number of refunds</b>	35	188	62	173
<b>*Contributions</b>	\$ 9,144,566.79	\$ 41,597,697.73	\$ 9,066,879.52	\$ 36,499,613.41

<b>Members on record at month end</b>					
	Retirees & beneficiaries	Disabilities	Actives	Tier A actives	Tier B Actives
Jan	7,534	151	7,280	4,762	2,518
Feb	7,584	151	7,268	4,706	2,562
Mar	7,547	148	7,258	4,655	2,603
April	7,562	145	7,263	4,622	2,641
May					
June					
July					
Aug					
Sep					
Oct					
Nov					
Dec					



**Government Finance Officers Association**

203 North LaSalle Street, Suite 2700

Chicago, Illinois 60601-1210

312.977.9700 fax: 312.977.4806

4/14/2021

Cheryl Alston  
Executive Director  
Employees' Retirement Fund of the City of Dallas, Texas

Dear Ms. Alston:

We are pleased to notify you that your comprehensive annual financial report for the fiscal year ended December 31, 2019 qualifies for GFOA's Certificate of Achievement for Excellence in Financial Reporting. The Certificate of Achievement is the highest form of recognition in governmental accounting and financial reporting, and its attainment represents a significant accomplishment by a government and its management.

When a Certificate of Achievement is awarded to a government, an Award of Financial Reporting Achievement (AFRA) is also presented to the individual(s) or department designated by the government as primarily responsible for its having earned the Certificate. This award has been sent to the submitter as designated on the application.

We hope that you will arrange for a formal presentation of the Certificate and Award of Financial Reporting Achievement, and give appropriate publicity to this notable achievement. A sample news release is included to assist with this effort.

We hope that your example will encourage other government officials in their efforts to achieve and maintain an appropriate standard of excellence in financial reporting.

Sincerely,

A handwritten signature in black ink that reads "Michele Mark Levine". The signature is written in a cursive, flowing style.

Michele Mark Levine  
Director, Technical Services



GOVERNMENT FINANCE OFFICERS ASSOCIATION  
**NEWS RELEASE**

**FOR IMMEDIATE RELEASE**

4/14/2021

**For more information contact:**  
**Michele Mark Levine, Director/TSC**  
**Phone: (312) 977-9700**  
**Fax: (312) 977-4806**  
**Email: [mlevine@gfoa.org](mailto:mlevine@gfoa.org)**

(Chicago, Illinois)—Government Finance Officers Association of the United States and Canada (GFOA) has awarded the Certificate of Achievement for Excellence in Financial Reporting to **Employees' Retirement Fund of the City of Dallas** for its comprehensive annual financial report for the fiscal year ended December 31, 2019. The report has been judged by an impartial panel to meet the high standards of the program, which includes demonstrating a constructive "spirit of full disclosure" to clearly communicate its financial story and motivate potential users and user groups to read the report.

The Certificate of Achievement is the highest form of recognition in the area of governmental accounting and financial reporting, and its attainment represents a significant accomplishment by a government and its management.

*Government Finance Officers Association (GFOA) advances excellence in government finance by providing best practices, professional development, resources, and practical research for more than 21,000 members and the communities they serve.*