

# Wilshire Advisors

City of Grand Rapids Police & Fire Retirement System  
*Executive Summary of Investment Performance*

*As of March 31, 2022*

# Asset Class Performance

Asset Class Returns - Best to Worst

2017	2018	2019	2020	2021	2022 YTD	Annualized 5-Year as of 3/22
Emrg Mrkts 37.7%	T-Bills 1.9%	U.S. Equity 31.0%	U.S. Equity 20.8%	REITs 46.2%	Commodities 25.5%	U.S. Equity 15.7%
Developed 25.6%	Core Bond 0.0%	REITs 25.8%	Emrg Mrkts 18.7%	Commodities 27.1%	T-Bills 0.0%	REITs 10.0%
U.S. Equity 21.0%	U.S. TIPS -1.3%	Developed 22.7%	U.S. TIPS 11.0%	U.S. Equity 26.7%	U.S. TIPS -3.0%	Commodities 9.0%
High Yield 7.5%	High Yield -2.1%	Emrg Mrkts 18.9%	Developed 8.3%	Developed 11.8%	REITs -3.9%	Developed 7.2%
REITs 4.2%	REITs -4.8%	High Yield 14.3%	Core Bond 7.5%	U.S. TIPS 6.0%	High Yield -4.8%	Emrg Mrkts 6.4%
Core Bond 3.6%	U.S. Equity -5.3%	Core Bond 8.7%	High Yield 7.1%	High Yield 5.3%	U.S. Equity -4.9%	High Yield 4.7%
U.S. TIPS 3.0%	Commodities -11.2%	U.S. TIPS 8.4%	T-Bills 0.7%	T-Bills 0.0%	Developed -5.8%	U.S. TIPS 4.4%
Commodities 1.7%	Developed -13.4%	Commodities 7.7%	Commodities -3.1%	Core Bond -1.5%	Core Bond -5.9%	Core Bond 2.1%
T-Bills 0.8%	Emrg Mrkts -14.2%	T-Bills 2.3%	REITs -7.9%	Emrg Mrkts -2.2%	Emrg Mrkts -6.9%	T-Bills 1.1%

Data Sources: Bloomberg

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

## Market Commentary

### U.S. Equity

The U.S. stock market was down -4.9% for the first quarter of 2022. Sector performance was mixed as Energy (+39.0%) and Utilities (+4.8%) were up, supported by surging commodities prices. The worst performing sectors this quarter were Communication Services (-11.9%), Consumer Discretionary (-9.0%) and Technology (-8.4%). From a size perspective, large-cap outperformed small-cap while growth stocks underperformed value.

Geopolitical events shook the globe during the quarter as Russia invaded neighboring Ukraine. While the humanitarian fallout is of greatest importance, it is also necessary to understand the economic and market impacts that stem from these destabilizing events. Perhaps the most important tensions came from accelerating inflationary pressures the conflict imposed on the Federal Reserve. The Fed had already signaled it would soon raise the Fed Funds Rate and inflation for the first two months of the year had already climbed 1.4% (not annualized). The 10-year breakeven inflation rate pushed toward 3% and fed fund futures pricing implied an overnight rate of 2.25% by the end of the year.

### Non-U.S. Equity

The UK economy surged in January and is now back above the level that existed before the COVID pandemic. An escalating COVID outbreak in China has led to some local lockdowns and is cutting into economic growth forecasts. Russia's invasion of Ukraine led MSCI to reclassify the Russian equity market from Emerging to a Standalone Market since Russian equities are currently uninvestable.

### Fixed Income

The U.S. Treasury yield curve was up across all maturities during the quarter but most sharply in the intermediate range, with pronounced flattening further out the curve. The 2-year Treasury was up 160 basis points to 2.34% while the 10-year Treasury yield also ended the quarter at 2.34%, up 83 basis points. The now nonexistent spread is as low as it has been since August 2019. The Fed raised the overnight rate off zero by 0.25% at their March meeting. Through the Fed's "dot plot," it is messaging that the current intent is for additional increases totaling 150 basis points before the end of 2022.

## Secure Act 2.0

The House of Representatives passed The Securing a Strong Retirement Act of 2022 on March 29, 2022 with strong bipartisan support. The bill would meaningfully increase access to workplace retirement savings and provide further opportunities for enhanced retirement savings. It heads to the Senate next.

Headline proposals include:

- Expanding automatic enrollment in 401(k) and 403(b) retirement plans, by requiring new plans to enroll participants at initial 3% of pay and increasing it by 1% annually until 10%, unless the participant opts out — all current 401(k) and 403(b) plans are grandfathered
- Allowing 403(b) plans to participate in multiple employer plans and invest in Collective Investment Trusts
- Raising the age for required minimum distributions to 75 from 72 over the next decade
- Raising catch-up contribution limits and requiring them to be treated as Roth contributions starting in 2023
- Permitting plan sponsors to make matching contributions to a 401(k) and 403(b) plan on qualified student loan payments
- Removing the 25% cap on qualified longevity annuity contracts, or QLACs — currently retirement savers can spend up to 25% of their account on a QLAC
- Creating a national online database of lost retirement accounts to reduce the number of missing participants

Source: [https://waysandmeans.house.gov/sites/democrats.waysandmeans.house.gov/files/documents/SECURE2.0\\_SxS\\_032822.pdf](https://waysandmeans.house.gov/sites/democrats.waysandmeans.house.gov/files/documents/SECURE2.0_SxS_032822.pdf)

# March 2022 Asset Class Assumptions

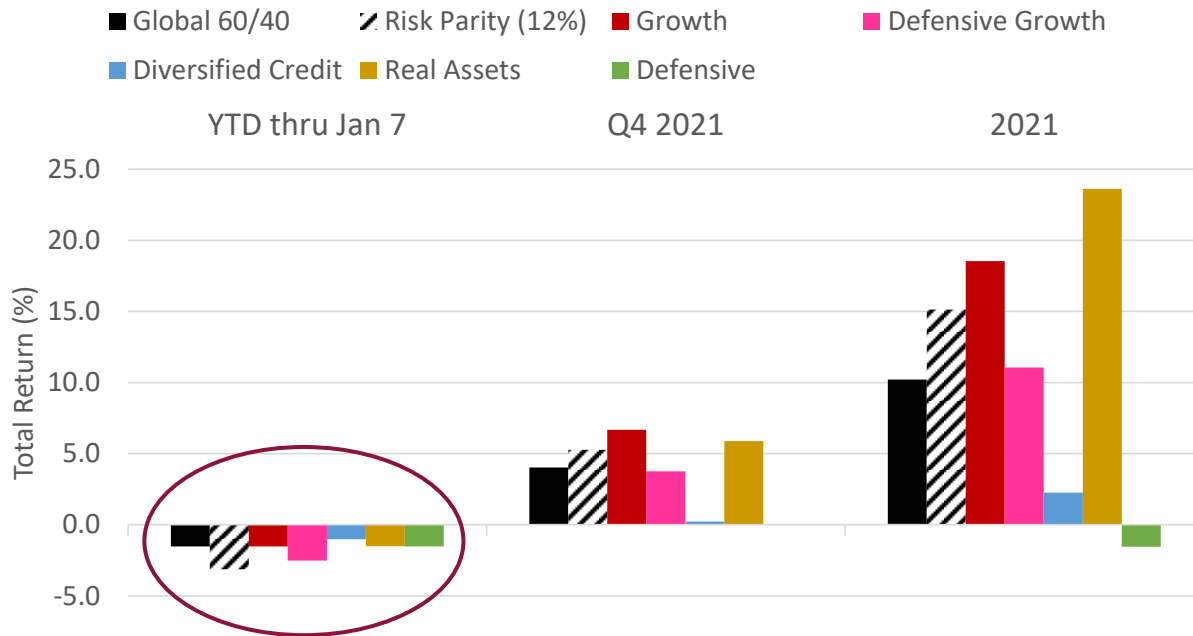
	Equity						Fixed Income					Real Assets						
	US Stock	Dev ex-US Stock	Emg Stock	Global ex-US Stock	Global Stock	Private Equity	Cash	Core Bond	LT Core Bond	TIPS	High Yield	Dev ex-US Bond (Hdg)	US RES	Global RES	Private RE	Cmdty	Real Assets	US CPI
Compound Return (%)	5.25	6.25	6.25	6.50	5.85	9.10	1.95	3.05	3.30	2.45	4.65	1.50	5.00	5.15	6.55	4.80	6.40	2.85
Expected Risk (%)	17.00	18.00	26.00	19.10	17.10	28.00	0.75	4.25	8.90	6.00	10.00	4.25	17.50	16.45	14.00	16.00	10.35	1.75
Cash Yield (%)	1.35	2.90	2.35	2.75	1.90	0.00	1.95	3.40	3.80	3.00	8.05	2.10	2.85	2.85	2.30	1.95	2.15	0.00
Growth Exposure	8.00	8.00	8.00	8.00	8.00	13.50	0.00	-0.85	-2.25	-3.00	4.00	-1.00	6.00	6.00	3.50	0.00	1.80	0.00
Inflation Exposure	-3.00	0.00	5.00	1.50	-1.25	-3.80	0.00	-2.50	-6.70	2.50	-1.00	-3.00	1.00	1.80	1.00	12.00	4.85	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

# 2022 Environmental Risk: A Year of Payback?

If some/much of COVID market returns have been liquidity fueled, can we expect to hang on to these gains when support is withdrawn?

Revisiting the environmental risk we noted in early 2022

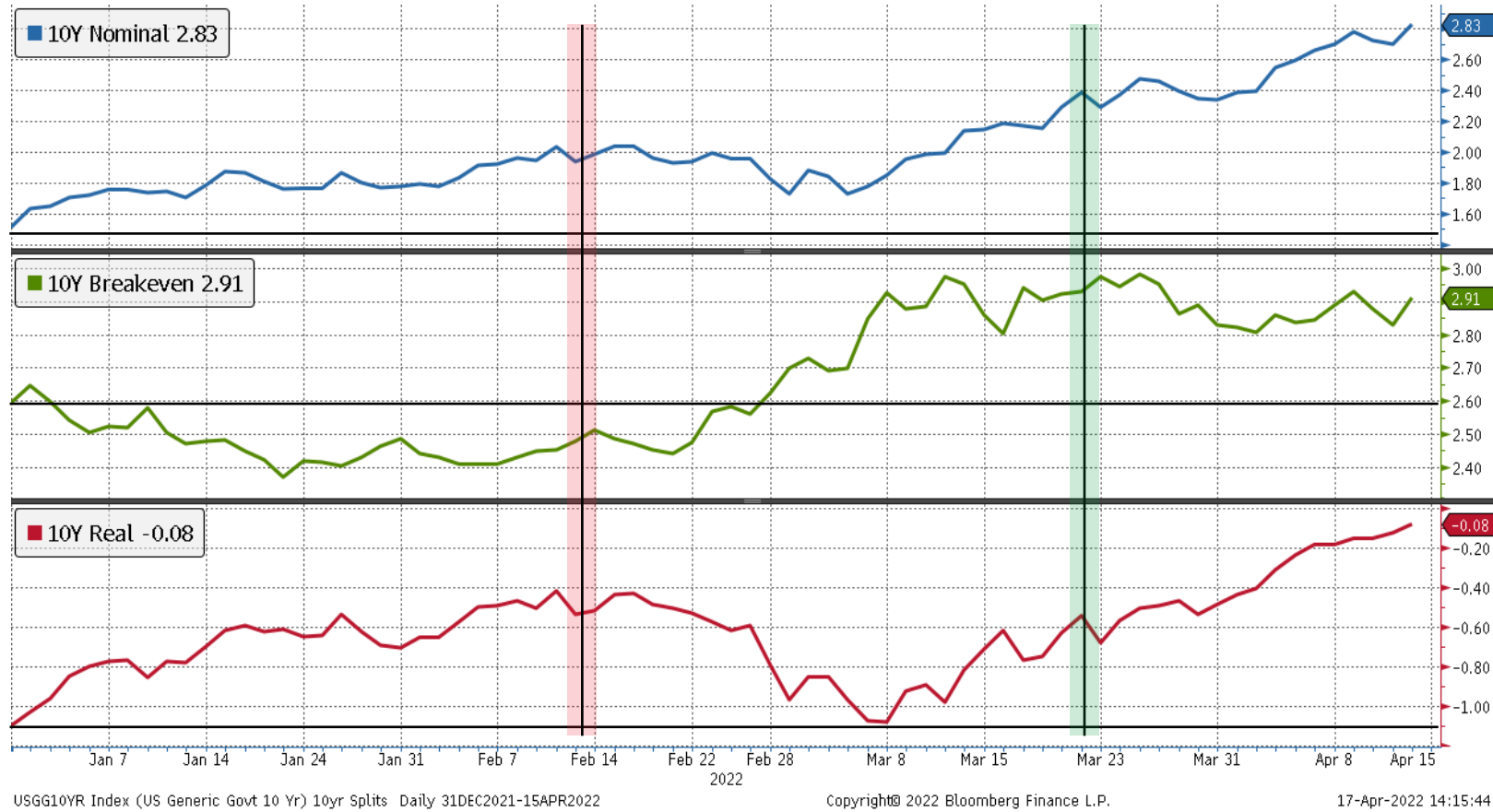
Asset Allocation & Thematic Returns



	YTD thru Jan 7	Q4 2021	2021
Global 60/40	(1.52)	4.02	10.20
Risk Parity (12%)	(3.13)	5.26	15.12
Growth	(1.52)	6.68	18.54
Defensive Growth	(2.52)	3.76	11.05
Diversified Credit	(1.02)	0.22	2.26
Real Assets	(1.51)	5.88	23.61
Defensive	(1.53)	0.01	(1.54)

Data Source: Bloomberg, Wilshire

# Q1 Rate Moves (10Y Nominal, Real & BEI)

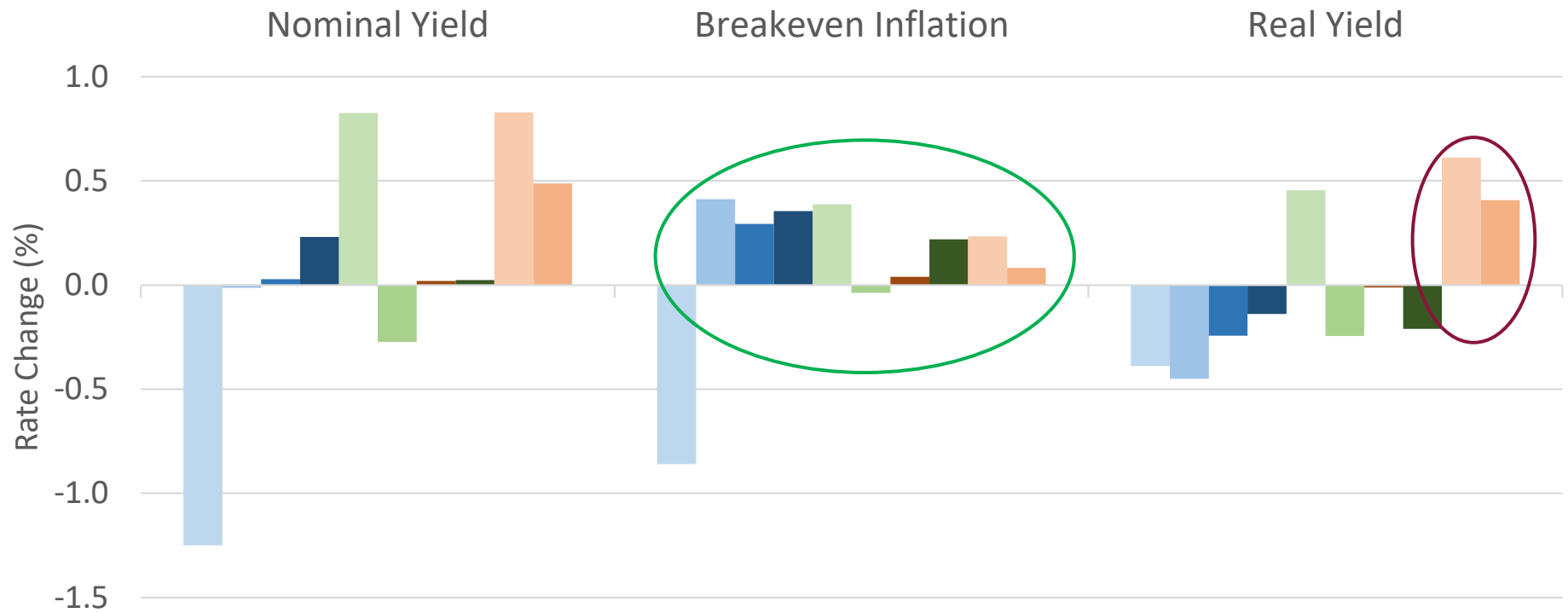


Data Source: Bloomberg

# Rate Changes (2020 – YTD 2022)

## Quarterly Rate Changes

- Q1 2020
- Q2 2020
- Q3 2020
- Q4 2020
- Q1 2021
- Q2 2021
- Q3 2021
- Q4 2021
- Q1 2022
- QTD (4/15)



Data Source: Bloomberg



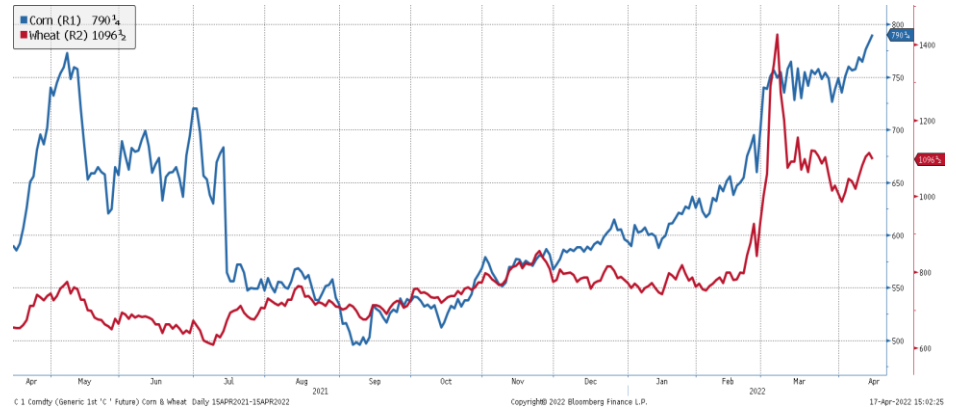
## Inflation Impact

### Oil prices (WTI & Brent)...



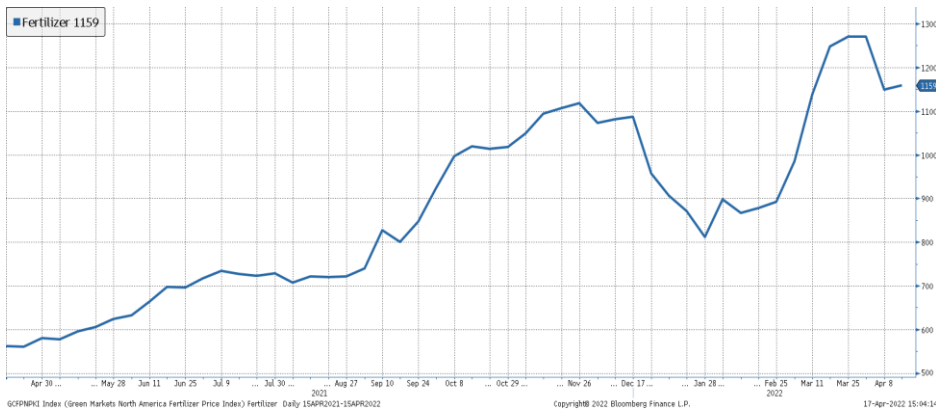
Data Source: Bloomberg

### Corn & Wheat prices...



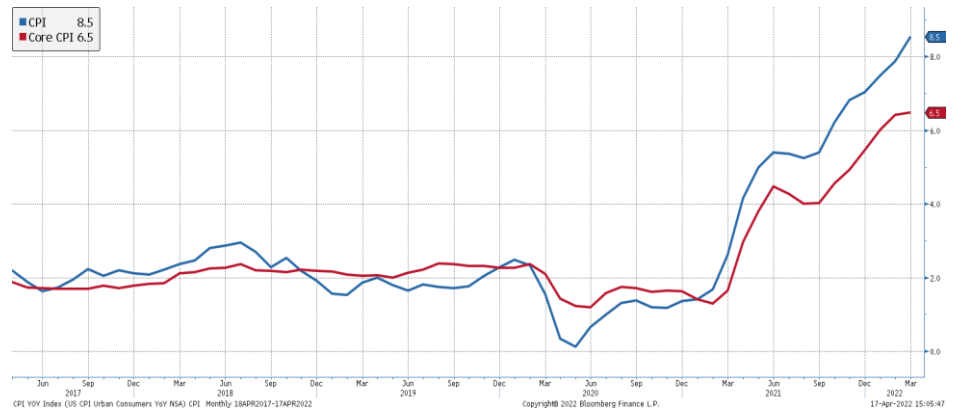
Data Source: Bloomberg

### Fertilizer prices...



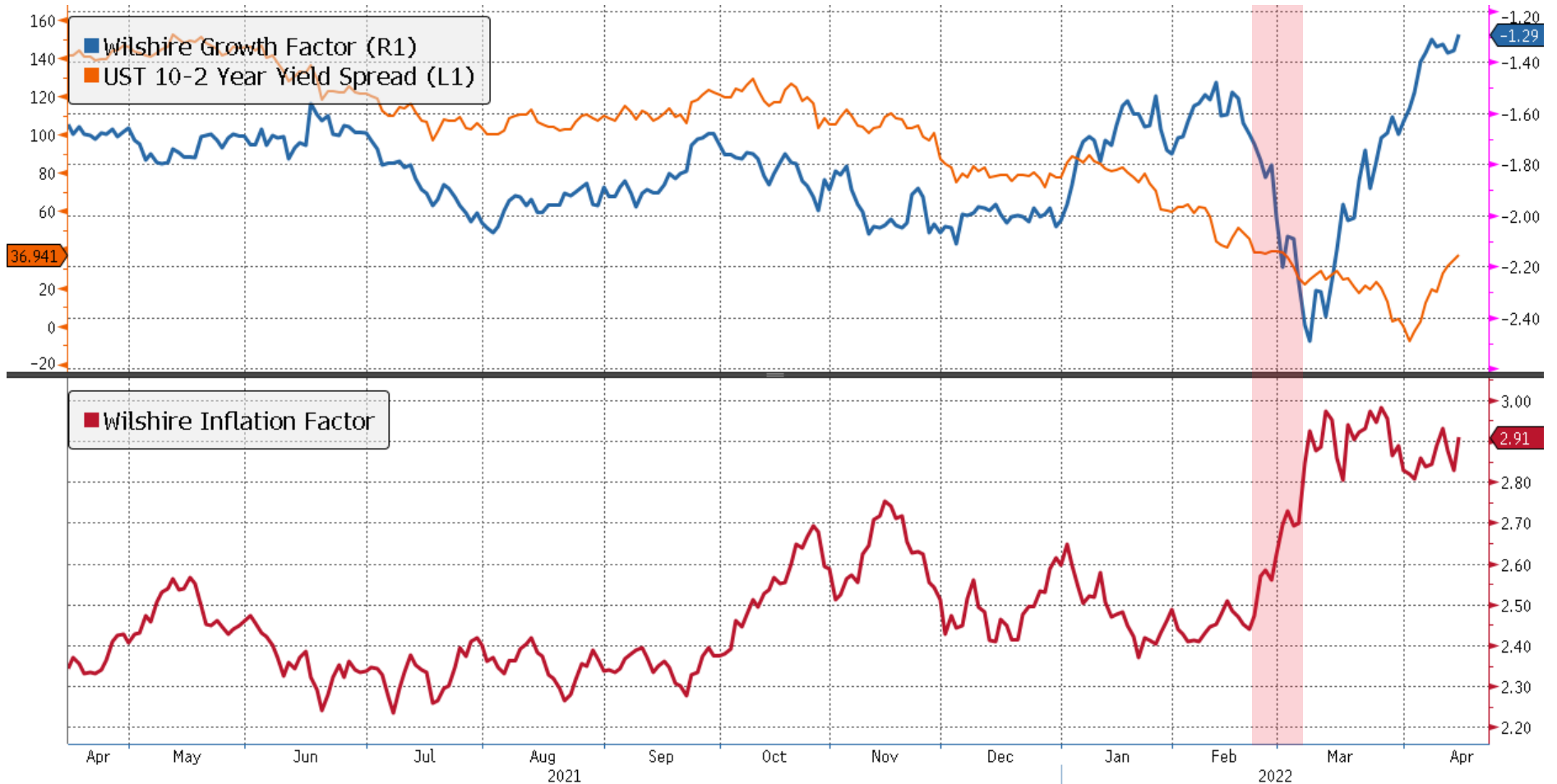
Data Source: Bloomberg

### Headline & Core CPI (YoY)...



Data Source: Bloomberg

# Economic Factors Proxies



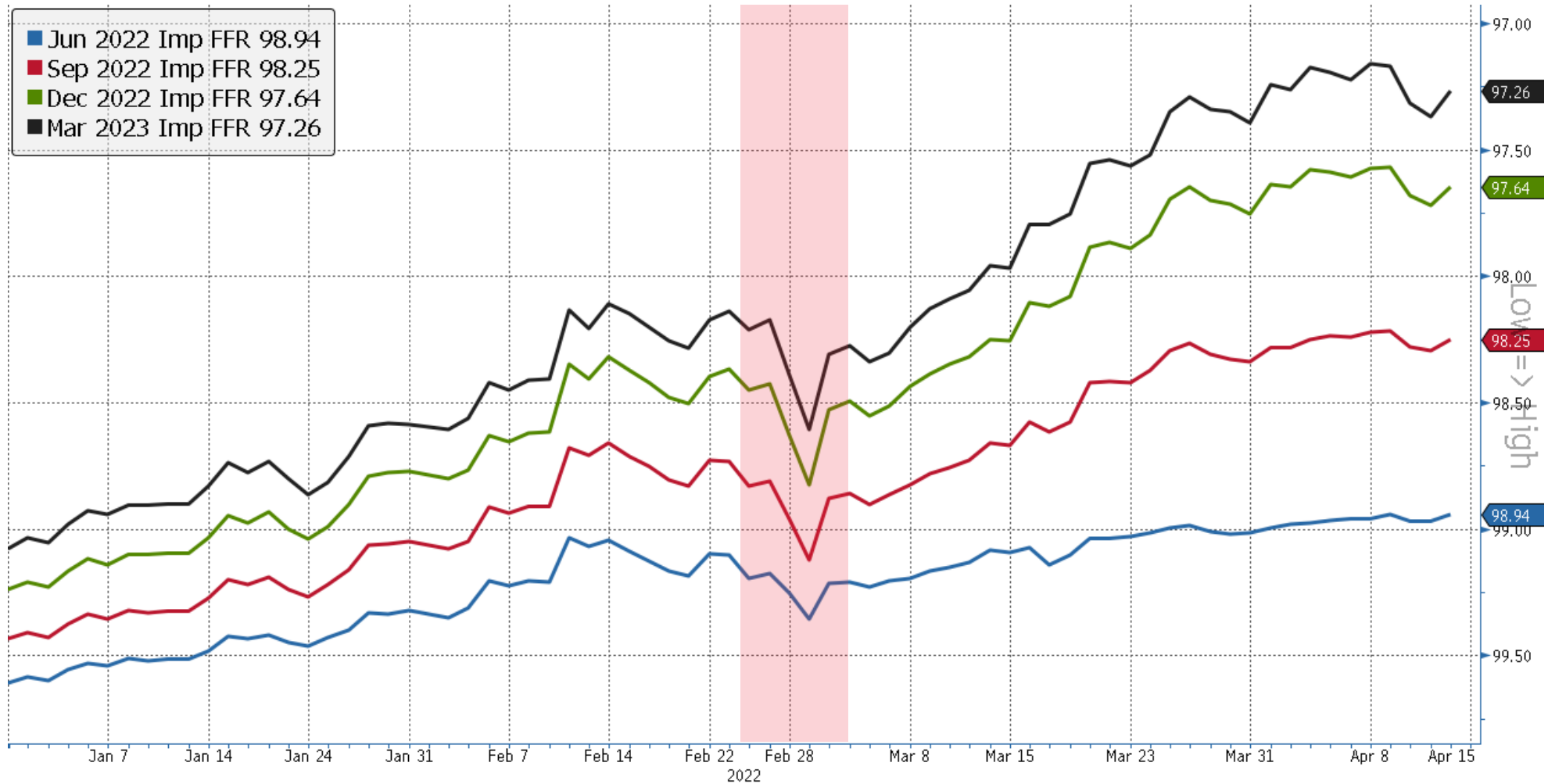
91282CDX Govt 1 Factors Daily 15APR2021-15APR2022

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Data Source: Bloomberg

# Fed Funds Discounting



US0ACH JUN2022 Index (WIRP Est Change from Current R) Fed Fut Imp Rate Daily 31DEC2021-15APR2022

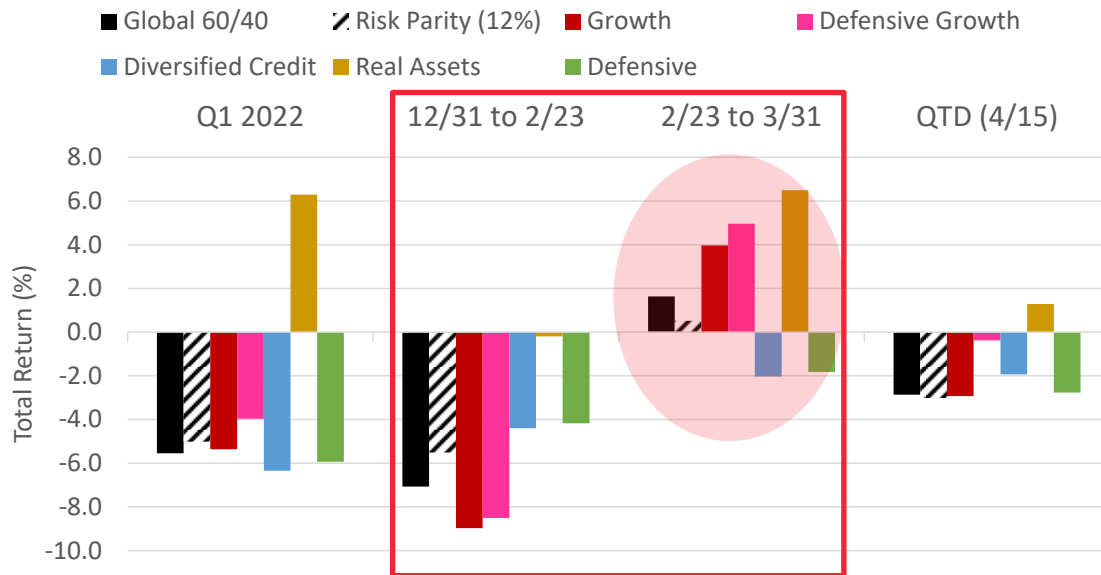
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Data Source: Bloomberg

# Market Environment (YTD thru 4/15)

Asset Allocation & Thematic Returns

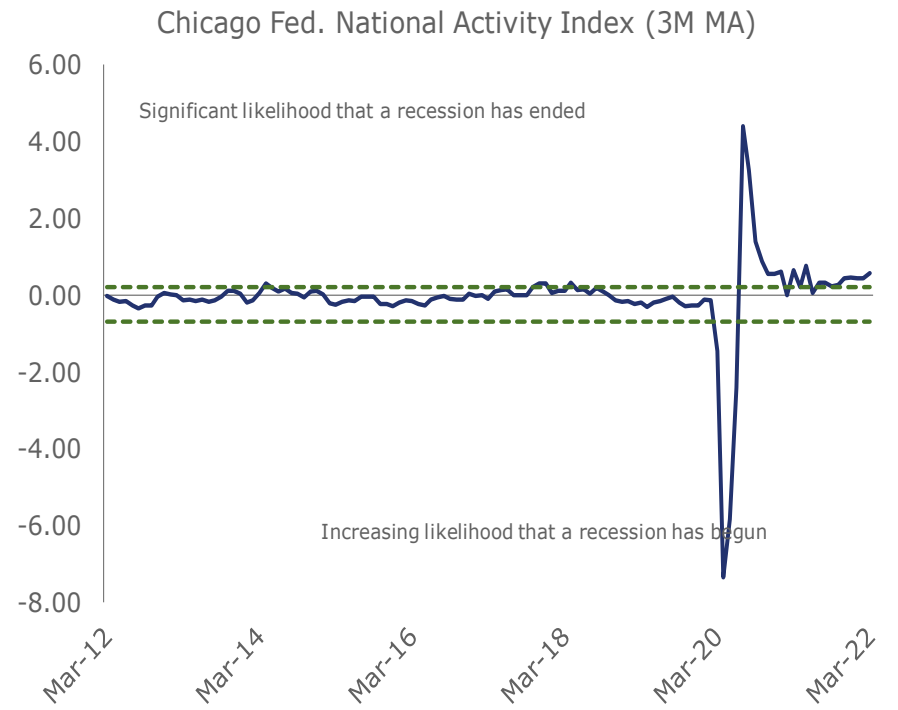
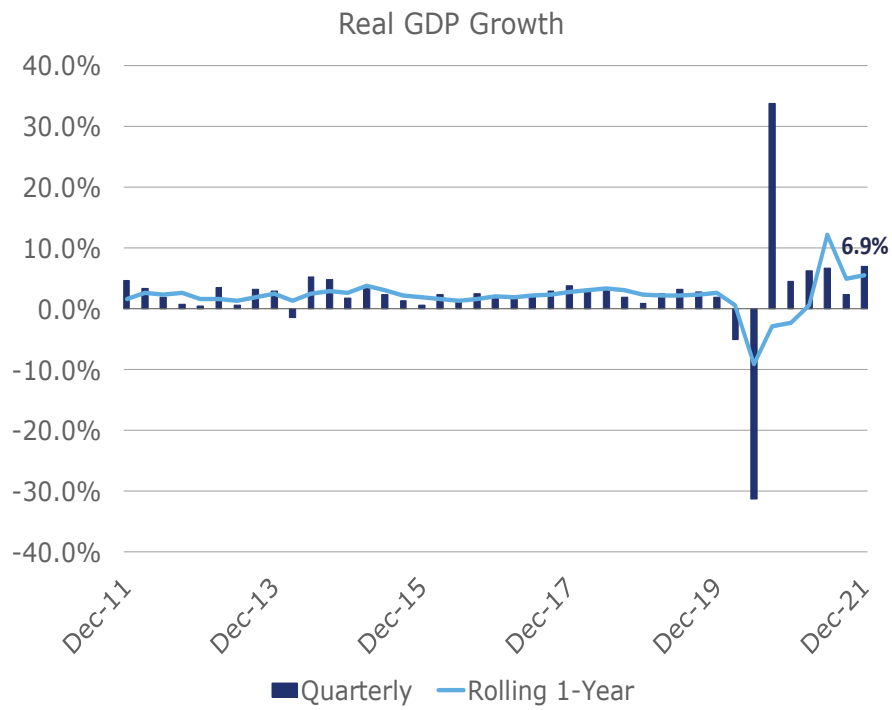


	Q1 2022	12/31 to 2/23	2/23 to 3/31	QTD (4/15)
Global 60/40	(5.55)	(7.07)	1.63	(2.87)
Risk Parity (12%)	(5.02)	(5.52)	0.53	(3.01)
Growth	(5.36)	(8.97)	3.97	(2.93)
Defensive Growth	(3.97)	(8.51)	4.97	(0.38)
Diversified Credit	(6.35)	(4.40)	(2.03)	(1.94)
Real Assets	6.30	(0.19)	6.50	1.29
Defensive	(5.93)	(4.18)	(1.83)	(2.77)

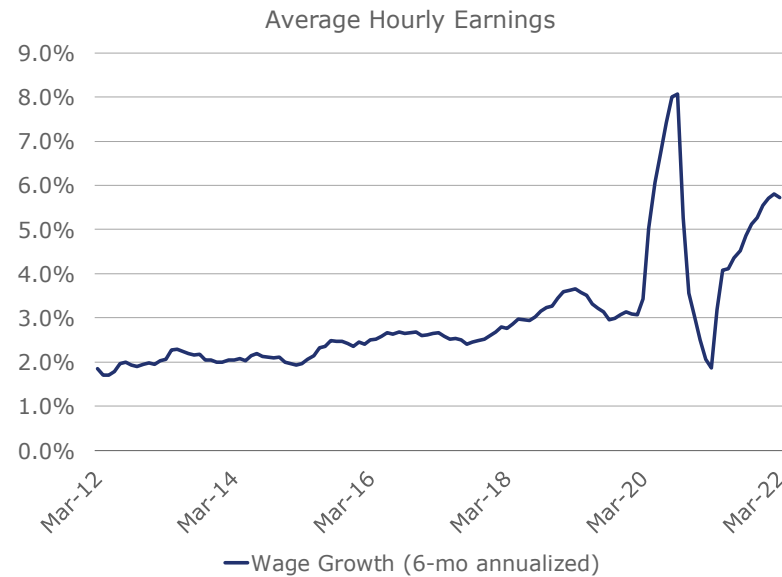
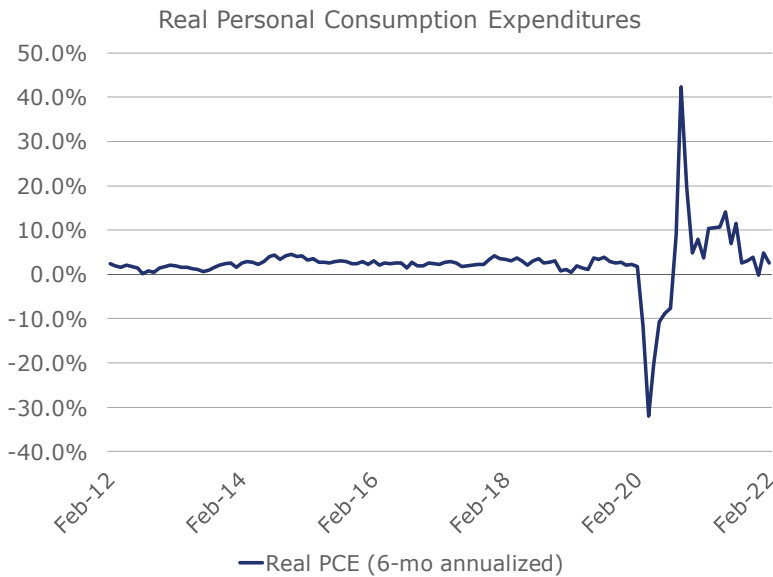
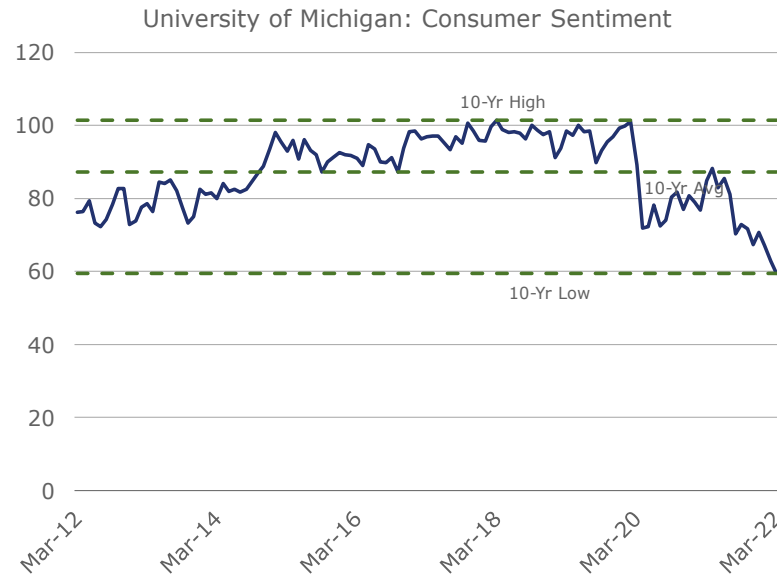
Data Source: Bloomberg

# Economic/Market Activity

# Economic Growth

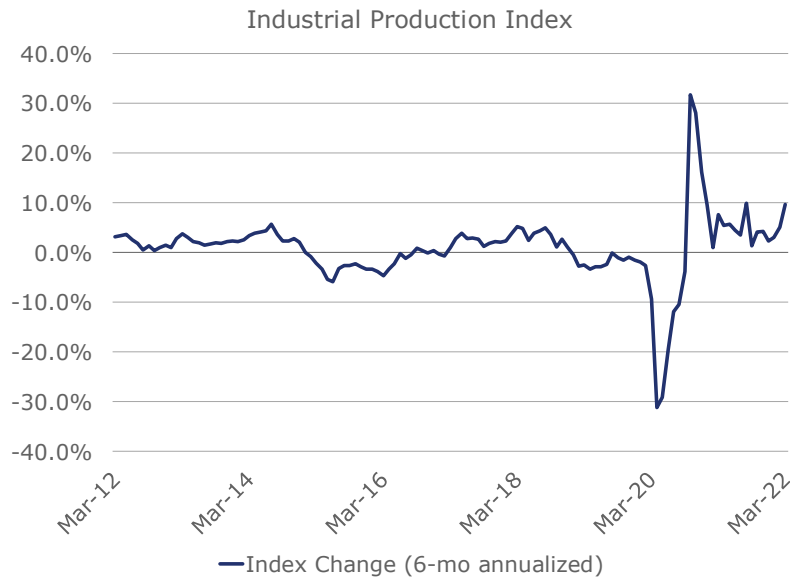
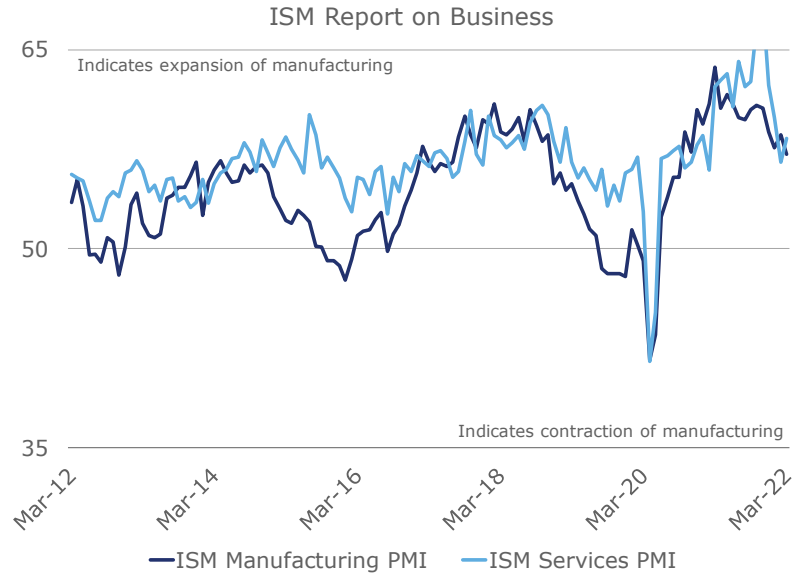


# Consumer Activity



Data Sources: Bloomberg

# Business Activity

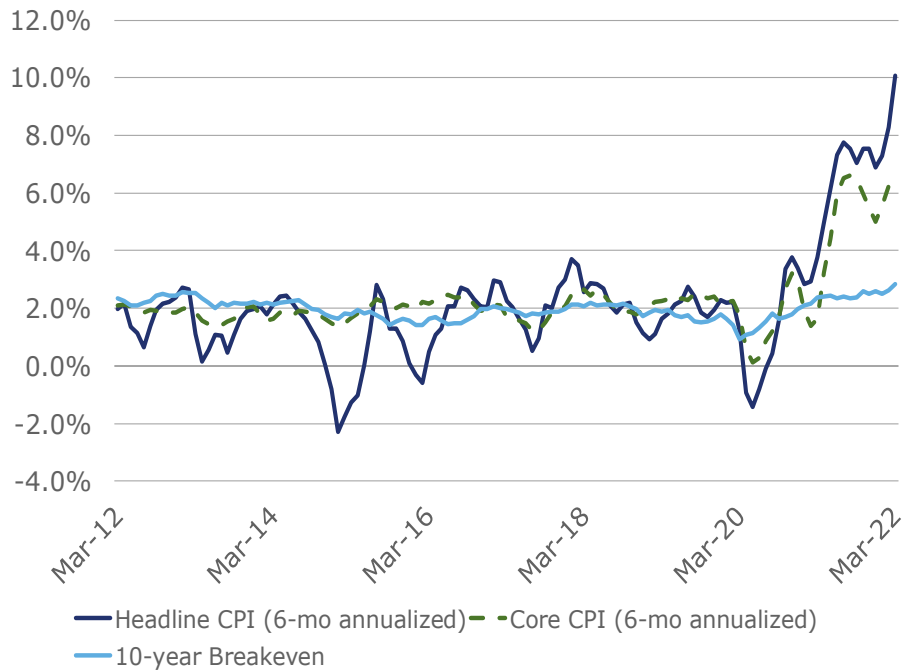


Data Sources: Bloomberg

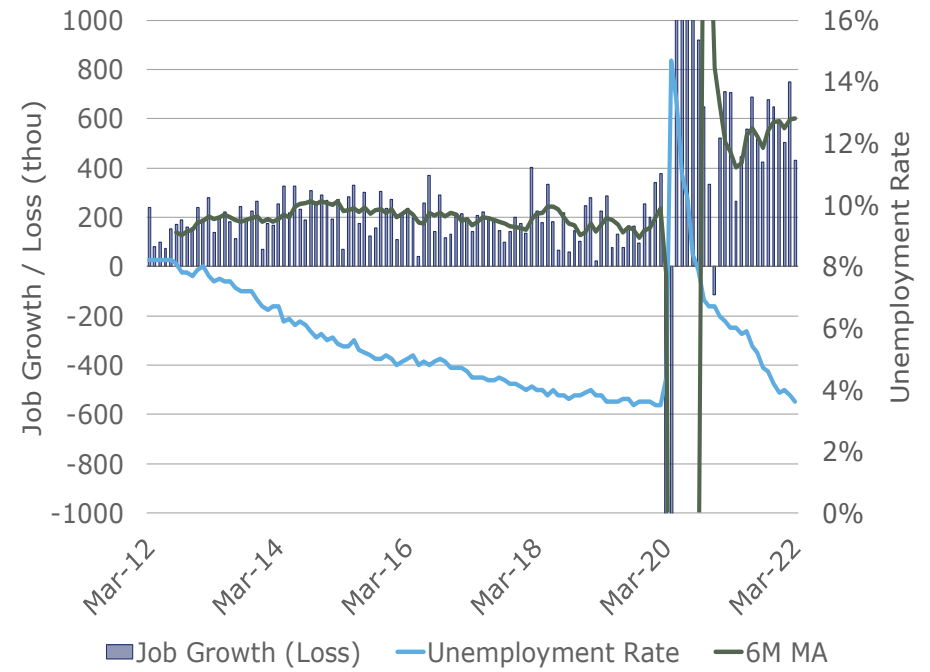


# Inflation and Employment

Inflation: Actual & Expected



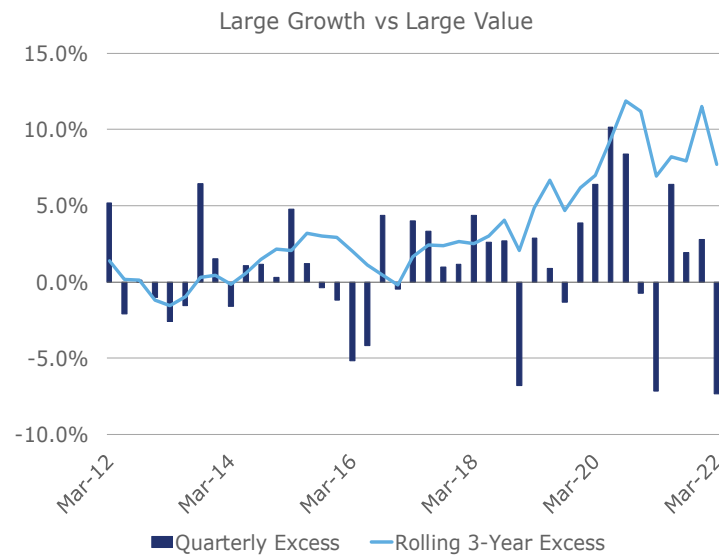
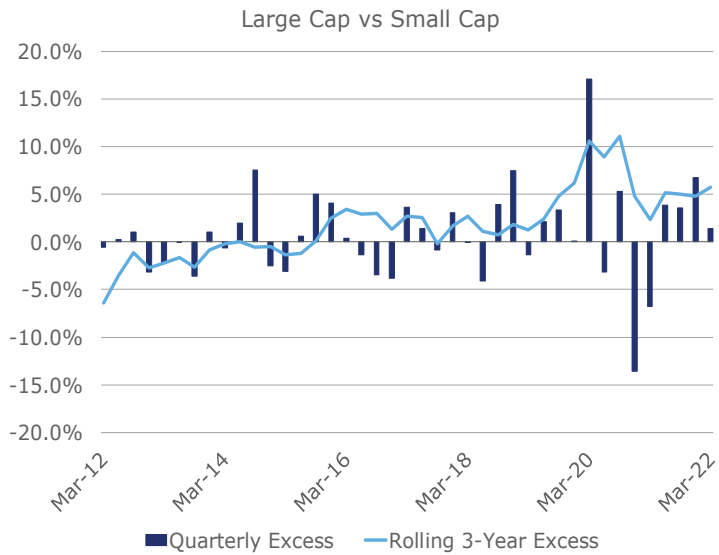
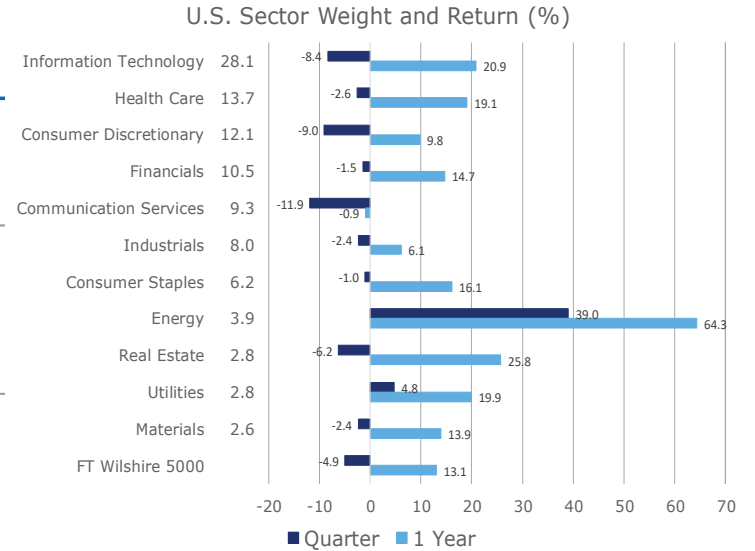
Employment Gains / Losses



Data Sources: Bloomberg

# U.S. Equity Market

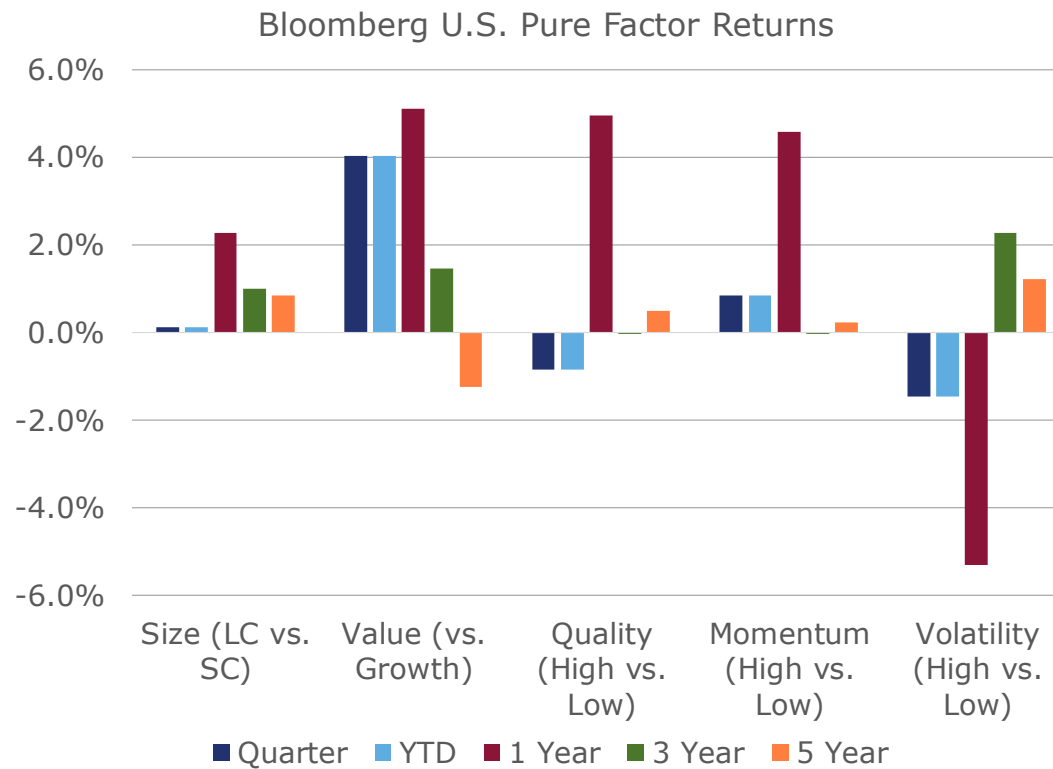
As of 3/31/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
FT Wilshire 5000	-4.9	-4.9	13.1	18.7	15.7	14.4
Wilshire U.S. Large Cap	-4.8	-4.8	14.6	19.3	16.2	14.7
Wilshire U.S. Small Cap	-6.1	-6.1	-1.4	12.8	10.4	11.8
Wilshire U.S. Large Growth	-8.0	-8.0	16.3	23.5	19.9	16.8
Wilshire U.S. Large Value	-0.7	-0.7	12.6	14.7	12.3	12.5
Wilshire U.S. Small Growth	-10.3	-10.3	-9.4	12.5	11.5	11.9
Wilshire U.S. Small Value	-1.8	-1.8	7.3	13.1	9.2	11.5
Wilshire REIT Index	-3.9	-3.9	29.1	11.9	10.0	9.9
MSCI USA Min. Vol. Index	-3.8	-3.8	13.8	11.8	12.5	13.0
FTSE RAFI U.S. 1000 Index	0.1	0.1	15.1	17.5	13.5	13.6



Data Sources: Bloomberg, Wilshire Atlas

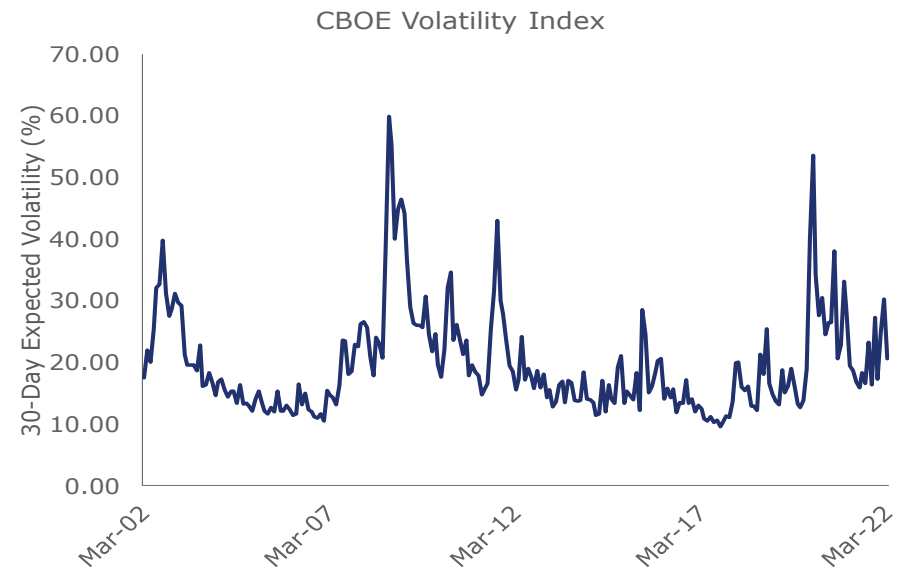
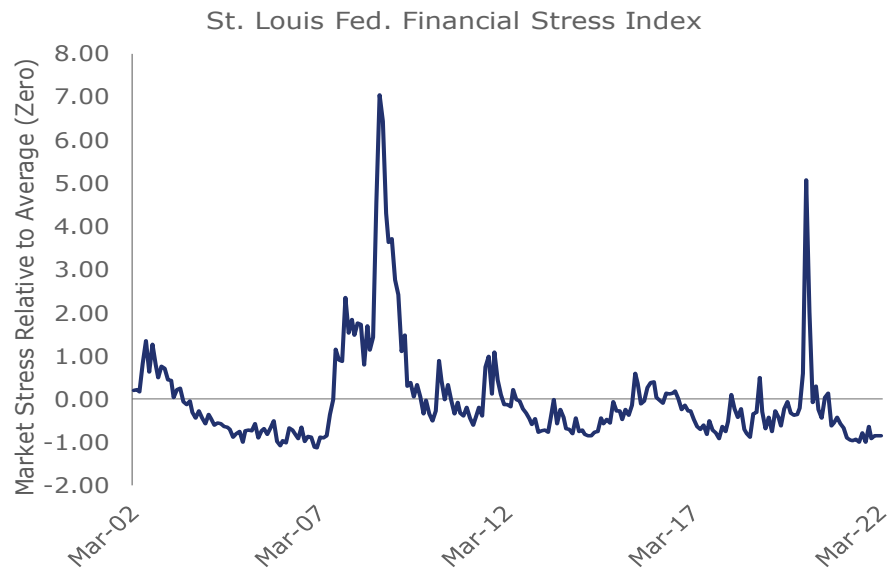
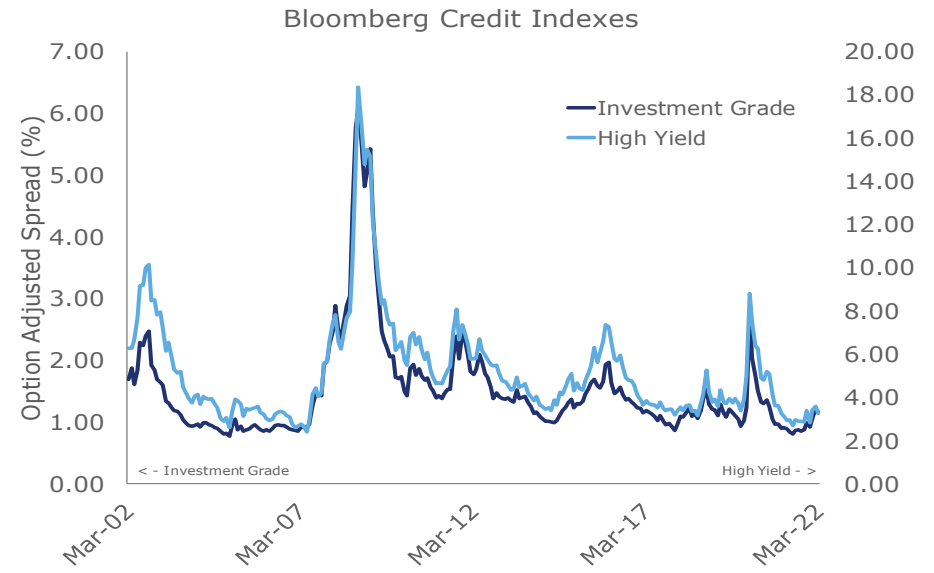
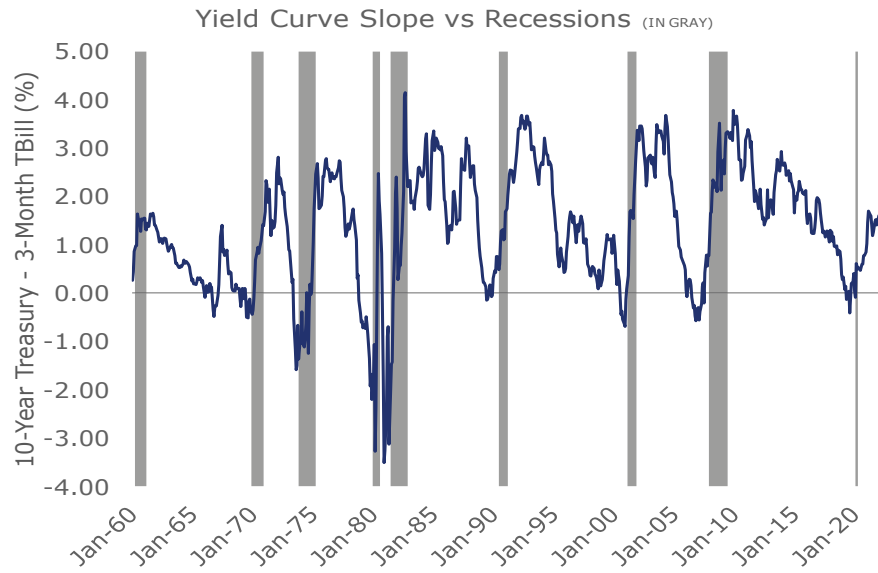
## U.S. Factor Returns

- Factor returns represent the contribution from large cap, value, etc. stocks within Bloomberg’s Portfolio & Risk Analytics module
- Value stocks have rebounded during the past year



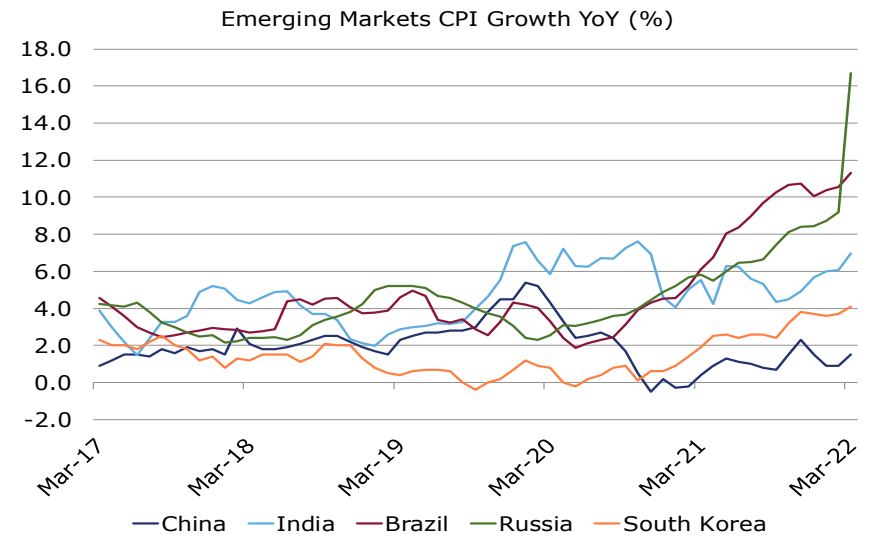
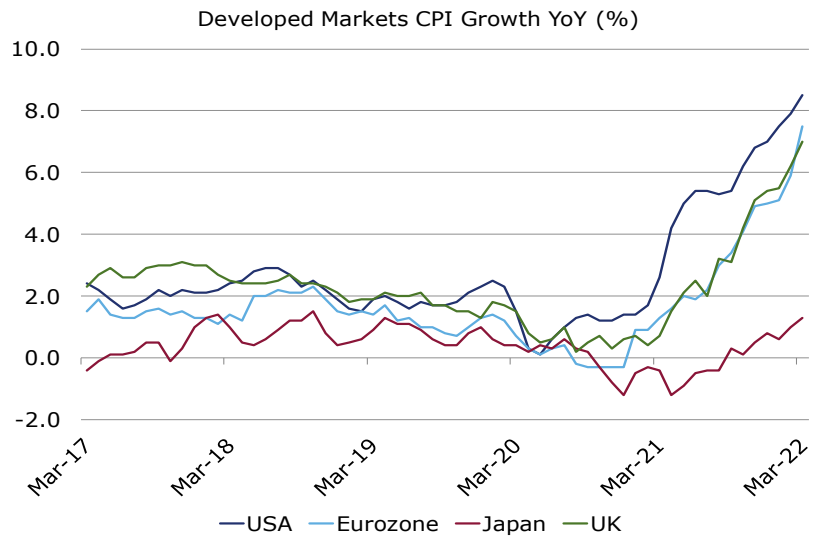
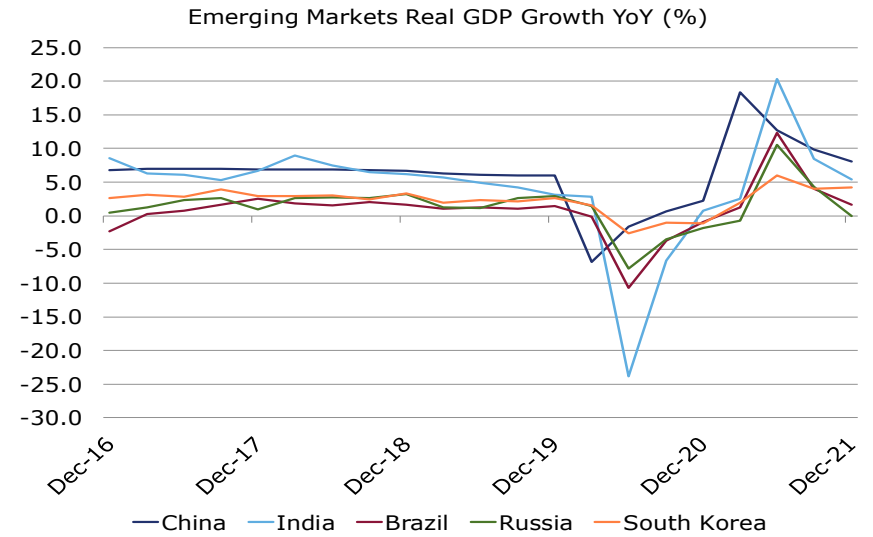
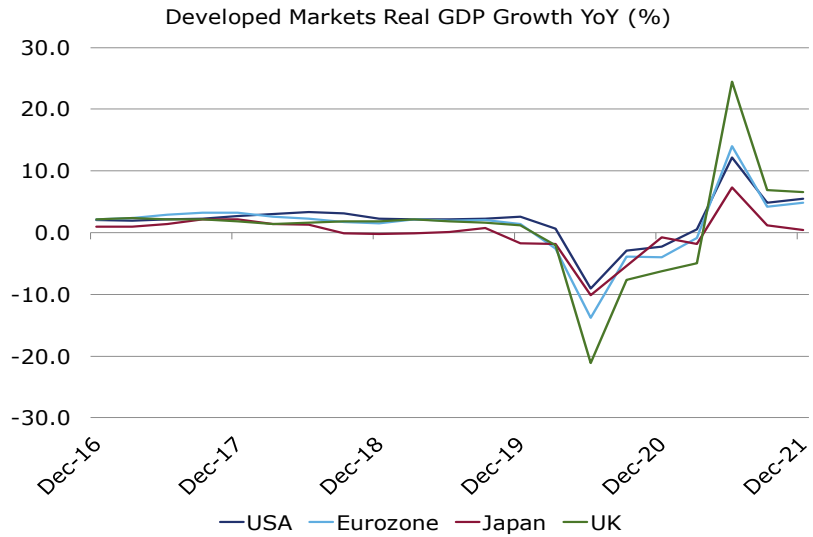
Data Sources: Bloomberg

## Risk Monitor



Data Sources: Bloomberg

# Non-U.S. Growth and Inflation

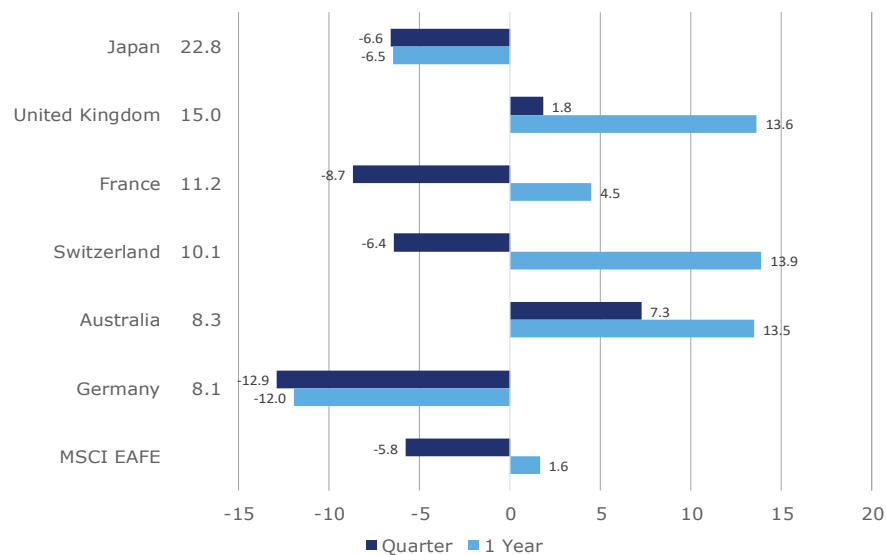


Data Sources: Bloomberg

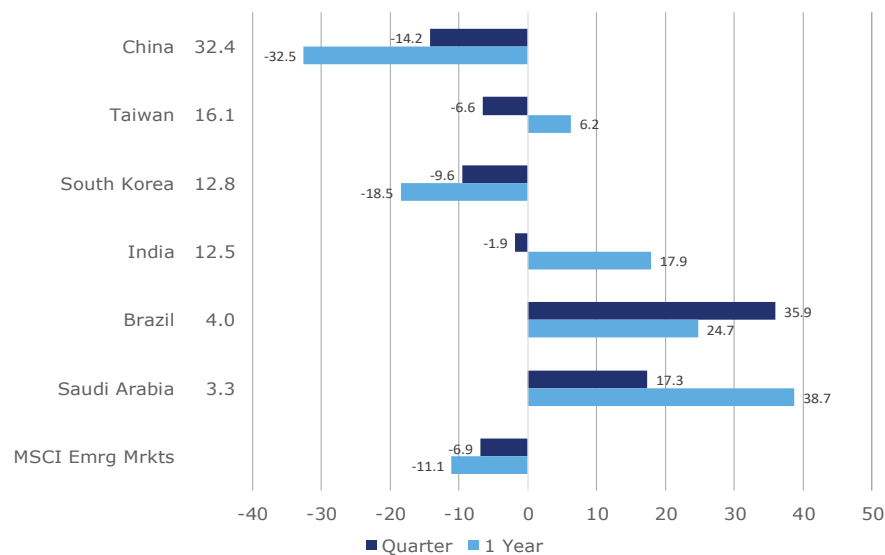
# Non-U.S. Equity Market

As of 3/31/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
MSCI ACWI ex-US (\$G)	-5.3	-5.3	-1.0	8.0	7.3	6.0
MSCI EAFE (\$G)	-5.8	-5.8	1.6	8.3	7.2	6.8
MSCI Emerging Markets (\$G)	-6.9	-6.9	-11.1	5.3	6.4	3.7
MSCI Frontier Markets (\$G)	0.6	0.6	11.9	2.4	3.6	3.0
MSCI ACWI ex-US Growth (\$G)	-10.7	-10.7	-5.9	9.5	9.0	7.1
MSCI ACWI ex-US Value (\$G)	-0.1	-0.1	3.9	6.5	5.5	5.2
MSCI ACWI ex-US Small (\$G)	-6.4	-6.4	0.4	10.7	8.3	7.7
MSCI ACWI Minimum Volatility	-2.9	-2.9	9.2	8.3	9.2	9.7
MSCI EAFE Minimum Volatility	-5.3	-5.3	2.4	3.6	5.4	6.8
FTSE RAFI Developed ex-US	-1.3	-1.3	5.0	8.5	6.7	6.3
MSCI EAFE LC (G)	-3.6	-3.6	6.7	8.7	7.1	9.1
MSCI Emerging Markets LC (G)	-6.1	-6.1	-9.6	6.6	7.9	6.7

Developed Markets Weight and Return (%)



Emerging Markets Weight and Return (%)



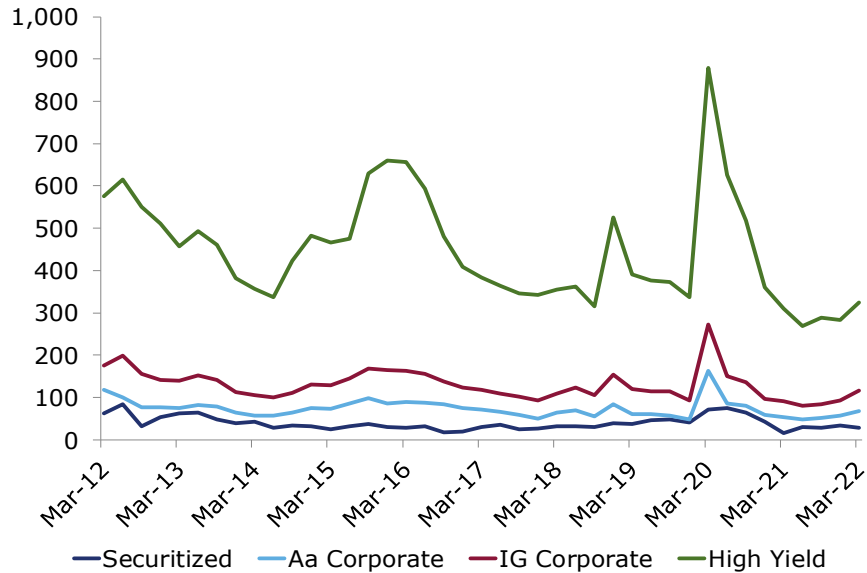
Data Sources: Bloomberg

# U.S. Fixed Income

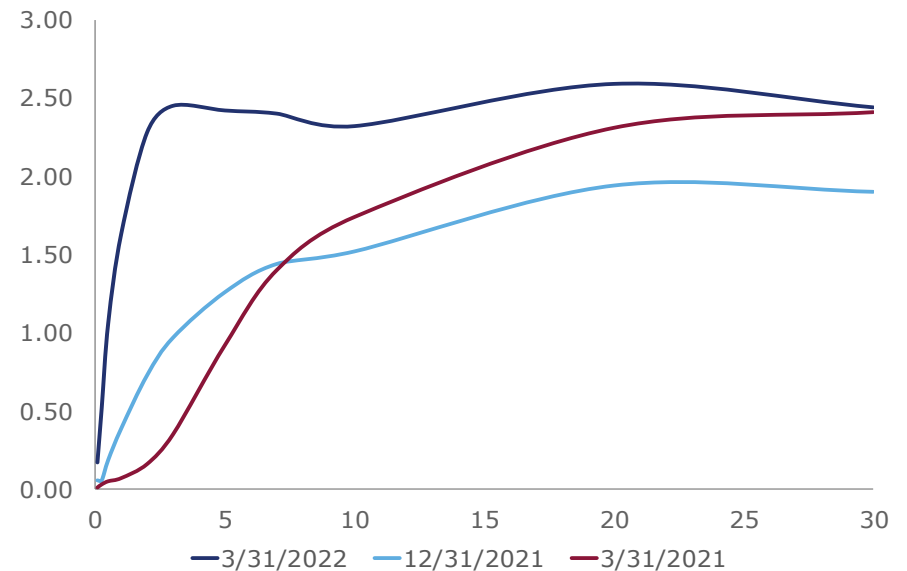
As of 3/31/2022	YTW	DUR.	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg Aggregate	2.9	6.6	-5.9	-5.9	-4.2	1.7	2.1	2.2
Bloomberg Treasury	2.4	6.8	-5.6	-5.6	-3.7	1.4	1.8	1.7
Bloomberg Gov't-Rel.	2.9	5.9	-5.4	-5.4	-3.9	1.5	2.1	2.2
Bloomberg Securitized	3.0	5.1	-5.0	-5.0	-4.9	0.7	1.4	1.8
Bloomberg Corporate	3.6	8.1	-7.7	-7.7	-4.2	3.0	3.3	3.6
Bloomberg LT Gov't/Credit	3.4	15.7	-11.0	-11.0	-3.1	4.2	4.6	4.7
Bloomberg LT Treasury	2.6	17.8	-10.6	-10.6	-1.4	3.3	3.9	4.0
Bloomberg LT Gov't-Rel.	3.9	12.9	-9.7	-9.7	-4.0	2.7	4.0	4.3
Bloomberg LT Corporate	4.0	14.4	-11.4	-11.4	-4.3	4.6	4.9	5.2
Bloomberg U.S. TIPS *	2.4	8.1	-3.0	-3.0	4.3	6.2	4.4	2.7
Bloomberg High Yield	6.0	3.9	-4.8	-4.8	-0.7	4.6	4.7	5.7
S&P/LSTA Leveraged Loan	4.4	0.3	-0.1	-0.1	3.3	4.2	4.0	4.3
Treasury Bills	0.6	0.3	0.0	0.0	0.0	0.8	1.1	0.6

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

Fixed Income Option Adjusted Spread (bps)



Treasury Yield Curve (%)

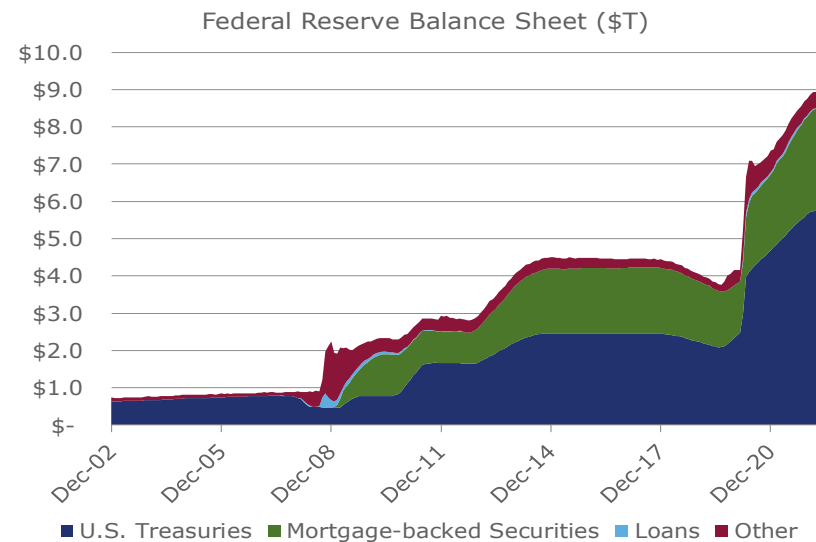
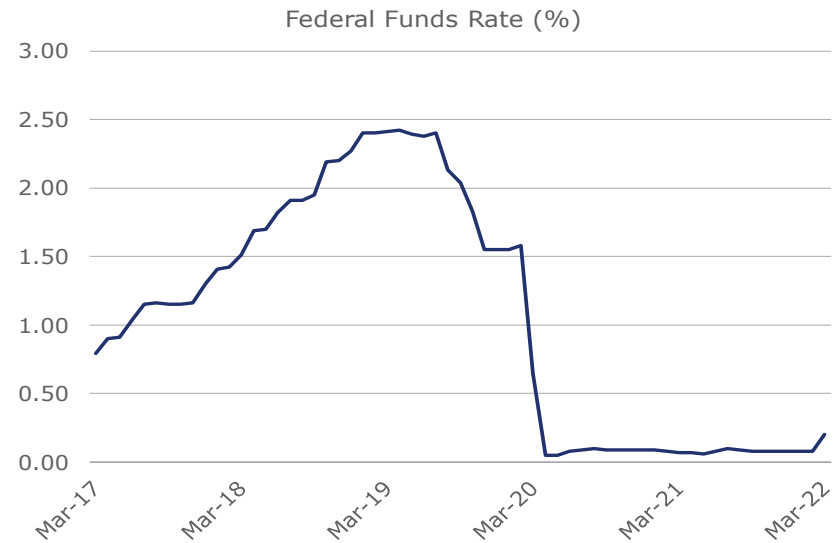


Data Sources: Bloomberg

## Federal Reserve

- Current FOMC expectation is for three 25 basis point increases (or 0.75%) in the Fed-funds rate during 2022
- Federal Reserve has added more than \$4.5 trillion in assets to their balance sheet during the past 21 months
- 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	3/15/2022	\$4,804

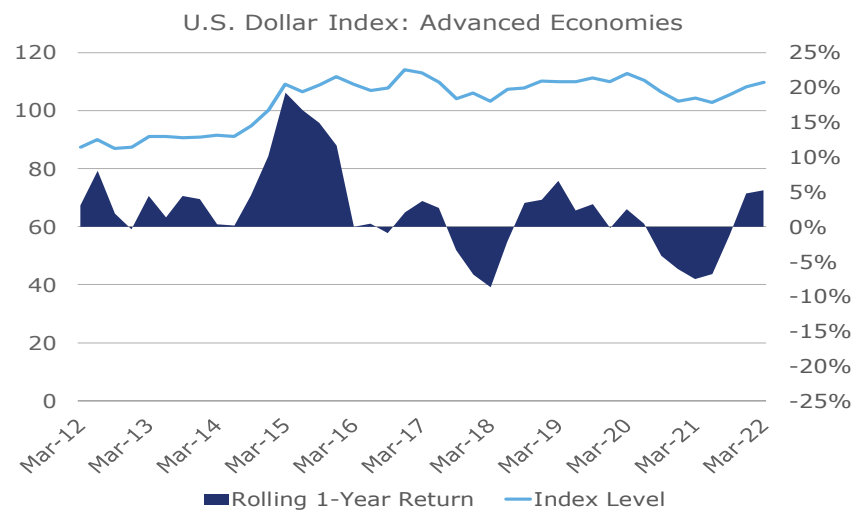
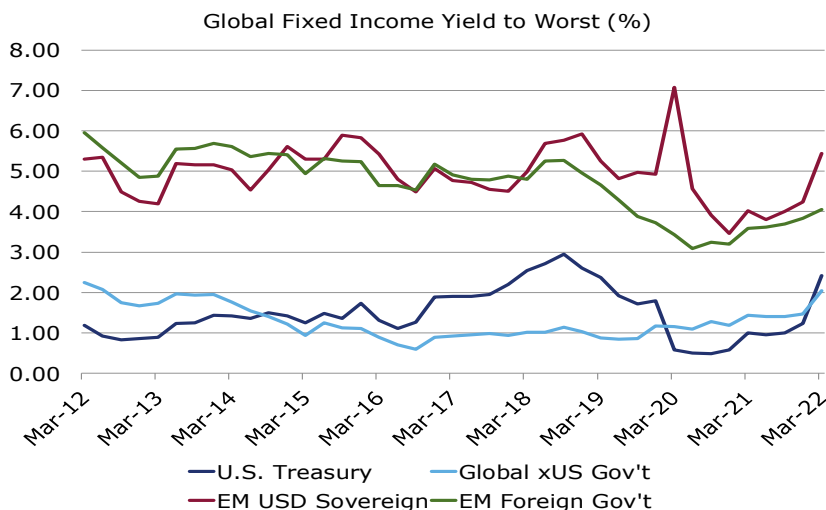




# Non-U.S. Fixed Income

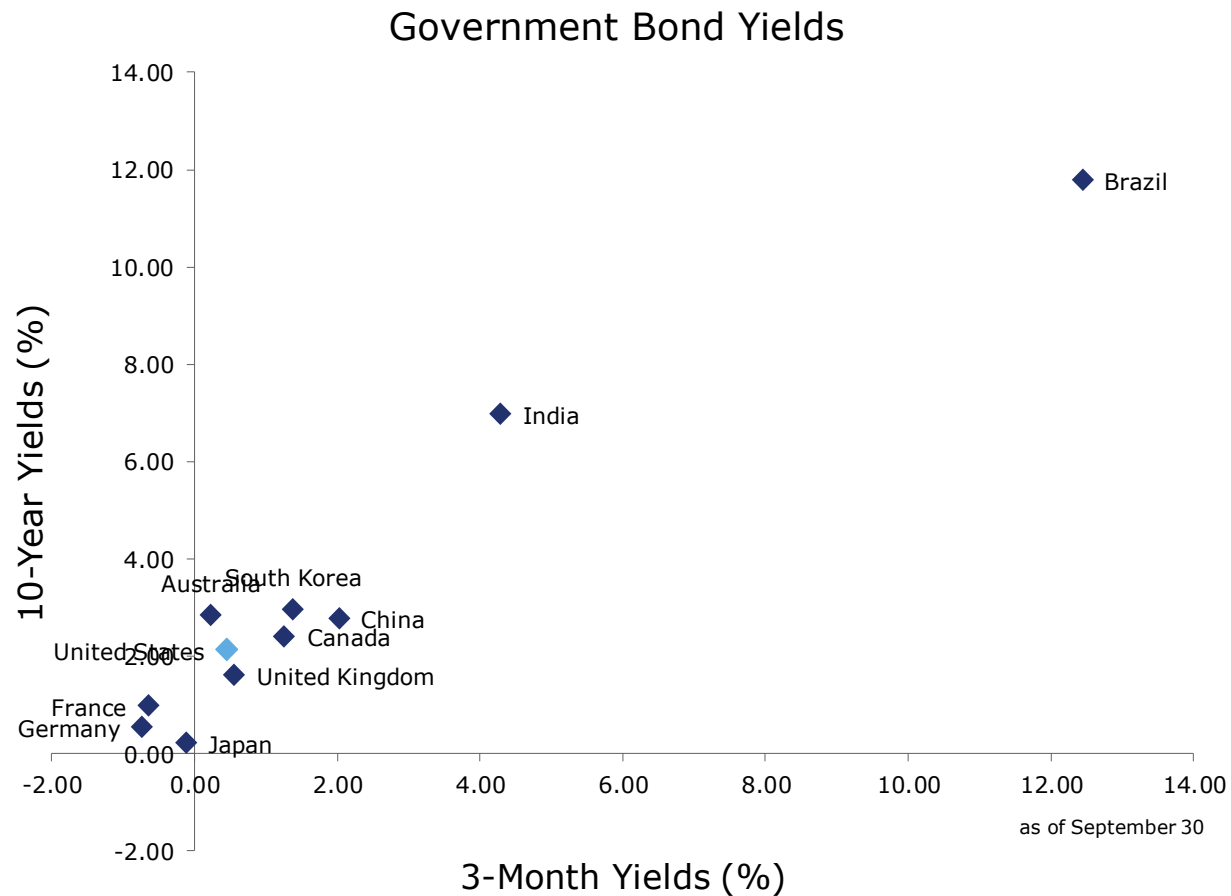
As of 3/31/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
<b>Developed Markets</b>						
Bloomberg Global Aggregate xUS	-6.1	-6.1	-7.9	-0.2	1.3	0.1
Bloomberg Global Aggregate xUS *	-4.1	-4.1	-3.6	0.9	2.3	3.2
Bloomberg Global Inflation Linked xUS	-5.3	-5.3	0.0	3.8	4.1	2.7
Bloomberg Global Inflation Linked xUS *	-2.8	-2.8	5.5	4.6	4.5	5.3
<b>Emerging Markets (Hard Currency)</b>						
Bloomberg EM USD Aggregate	-9.2	-9.2	-7.5	0.7	1.9	3.6
<b>Emerging Markets (Foreign Currency)</b>						
Bloomberg EM Local Currency Gov't	-2.1	-2.1	0.0	2.8	2.8	1.7
Bloomberg EM Local Currency Gov't *	-3.5	-3.5	-2.9	1.4	2.2	2.4
Euro vs. Dollar	-2.7	-2.7	-5.7	-0.5	0.8	-1.9
Yen vs. Dollar	-5.4	-5.4	-9.0	-3.1	-1.8	-3.8
Pound vs. Dollar	-2.9	-2.9	-4.7	0.3	0.9	-2.0

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



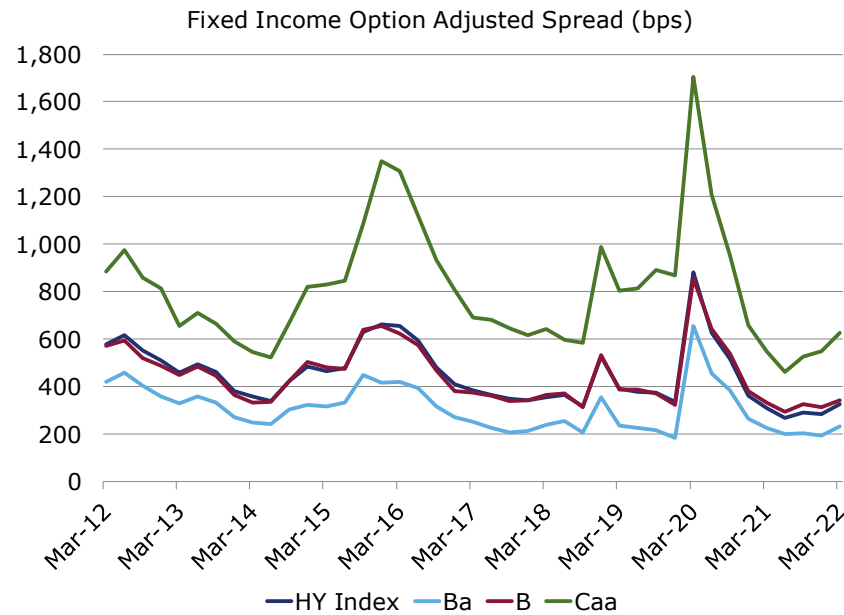
# Global Interest Rates

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



# High Yield Bond Market

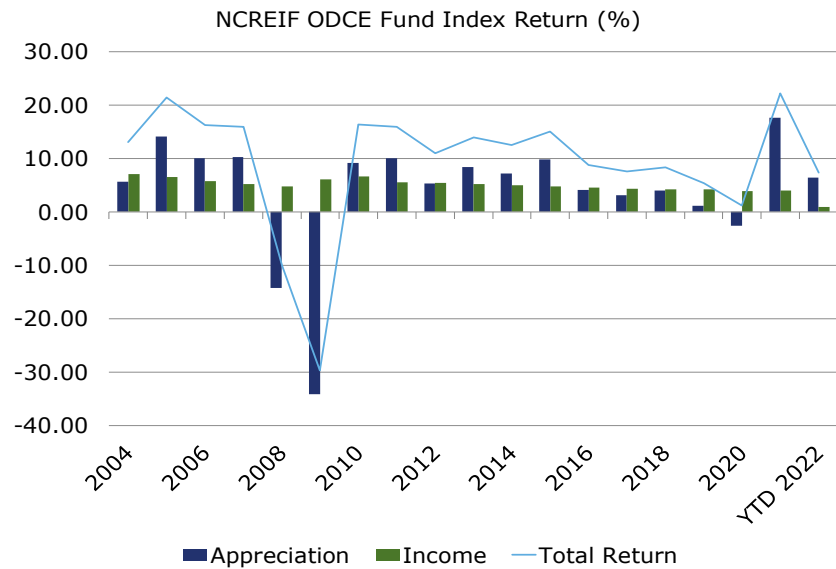
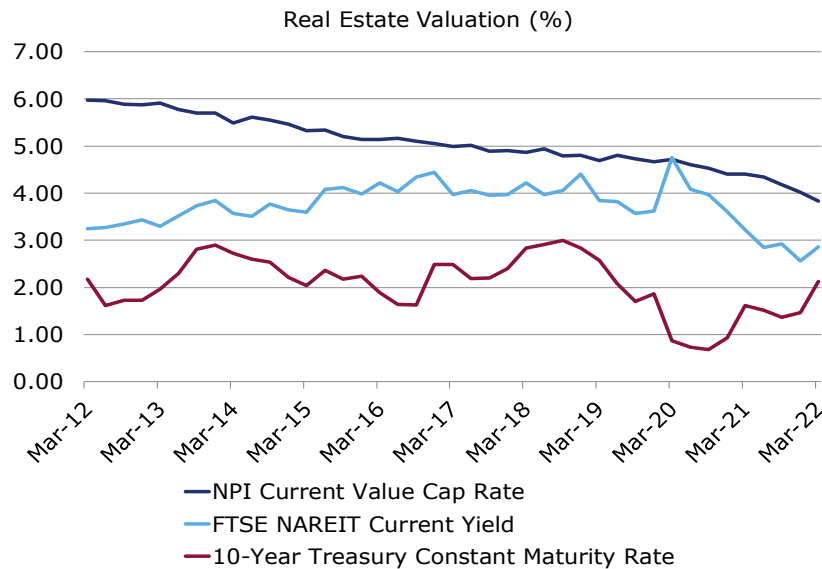
As of 3/31/2022		YTW	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg High Yield		6.0	-4.8	-4.8	-0.7	4.6	4.7	5.7
S&P LSTA Leveraged Loan		4.4	-0.2	-0.2	2.3	3.8	3.7	3.9
<b>High Yield Quality Distribution</b>	<b>Weight</b>							
Ba U.S. High Yield	51.3%	5.0	-5.9	-5.9	-1.5	5.3	5.1	5.9
B U.S. High Yield	37.0%	6.3	-3.5	-3.5	0.0	4.2	4.5	5.4
Caa U.S. High Yield	11.5%	9.1	-3.9	-3.9	0.8	2.9	3.5	5.8
Ca to D U.S. High Yield	0.3%	30.8	-3.8	-3.8	-5.5	-1.9	2.7	-3.0
Non-Rated U.S. High Yield	0.0%	0.0	0.0	0.0	0.0	-1.4	0.8	1.6



Data Sources: Bloomberg

# Real Assets

As of 3/31/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg U.S. TIPS	-3.0	-3.0	4.3	6.2	4.4	2.7
Bloomberg Commodity Index	25.5	25.5	49.3	16.1	9.0	-0.7
Bloomberg Gold Index	6.6	6.6	13.1	13.0	8.1	0.7
Wilshire Global RESI Index	-3.0	-3.0	22.0	8.7	8.5	8.8
NCREIF ODCE Fund Index	7.4	7.4	28.5	11.3	9.9	10.9
NCREIF Timberland Index	3.2	3.2	11.8	4.7	4.1	5.6
FTSE Global Core Infrastructure 50/50	3.9	3.9	15.3	9.0	9.4	9.7
Alerian Midstream Energy	24.0	24.0	41.9	10.1	6.1	n.a.
Bitcoin	-1.2	-1.2	-22.4	123.6	111.8	149.7

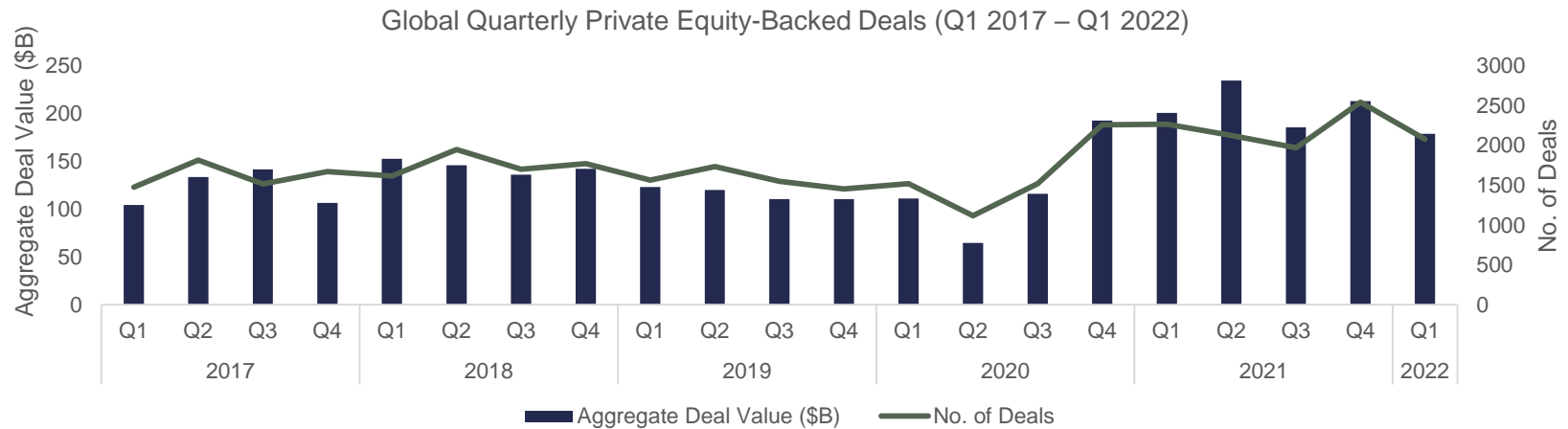
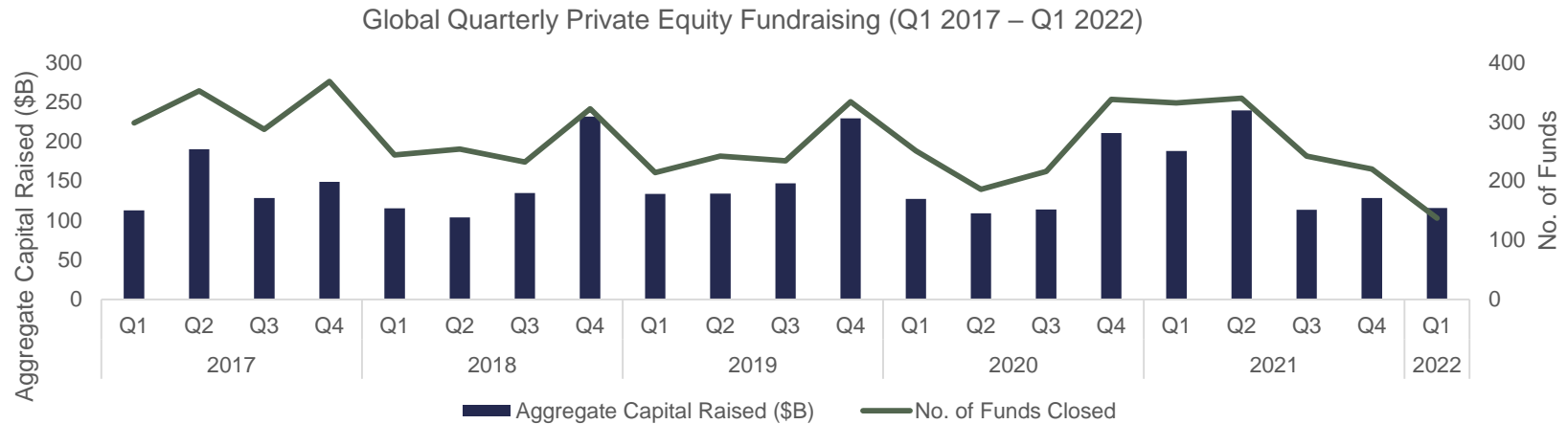


Data Sources: Bloomberg, National Council of Real Estate Investment Fiduciaries

# Appendix:

## Private Market Trends

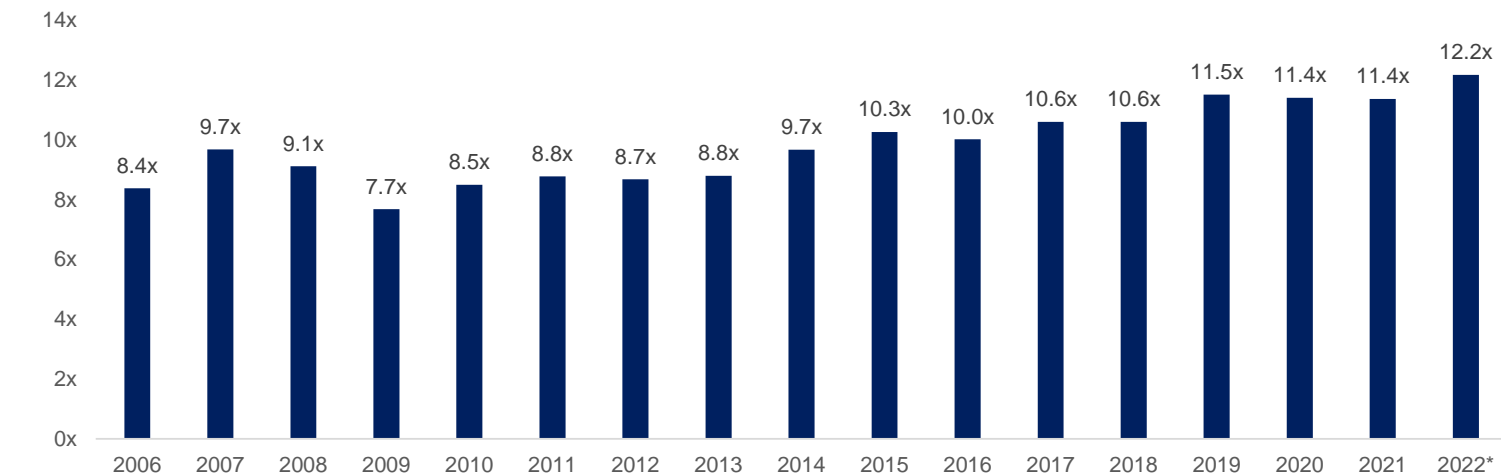
# Private Equity – Fundraising & Investment Activity



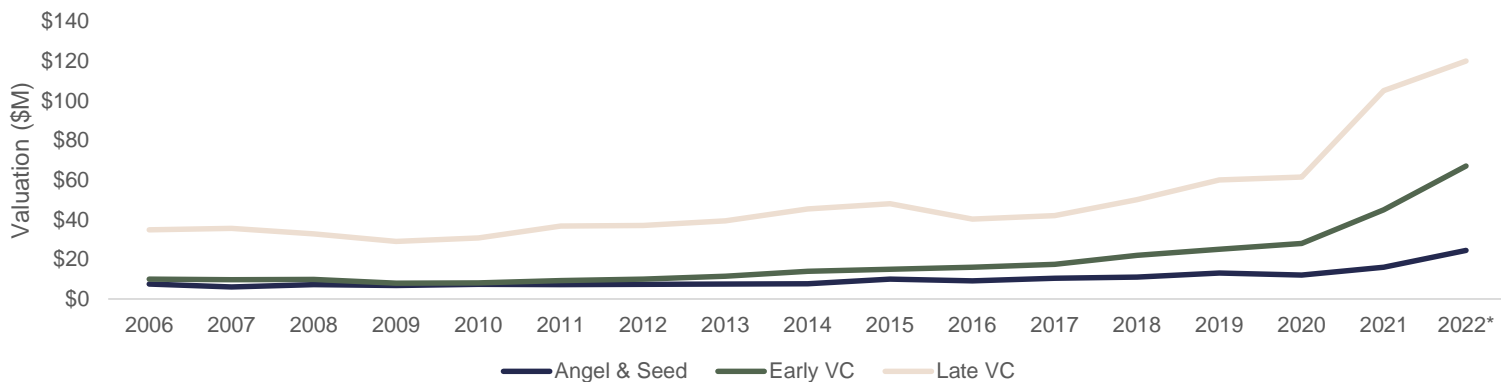
Source: Preqin, as of March 31, 2022.

# Private Equity – Pricing & Valuations

LBO Purchase Price Multiples (2006 – Q1 2022)

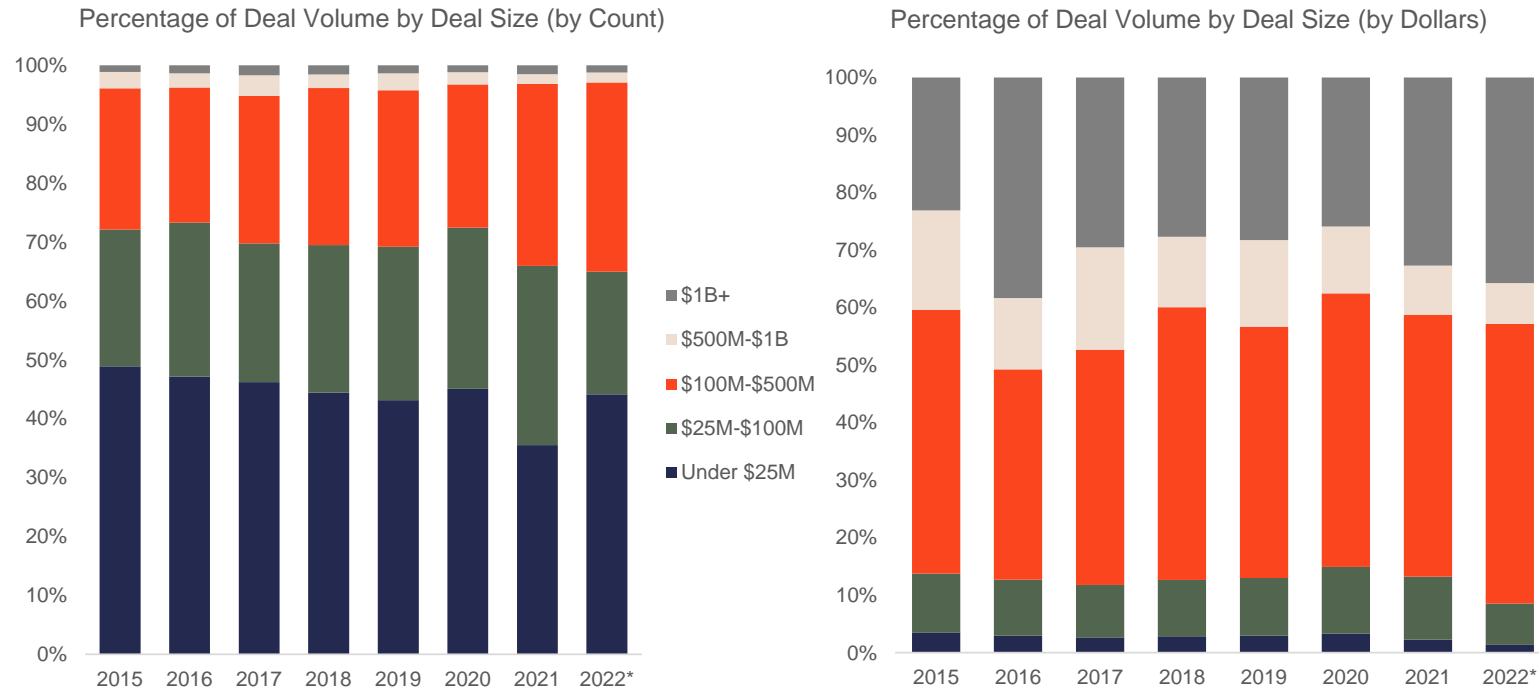


U.S. Median Pre-Value by Stage (2006 - Q1 2022)



Source: S&P LBO; Pitchbook, \*as of March 31, 2022.

# U.S. Investment Activity by Deal Size

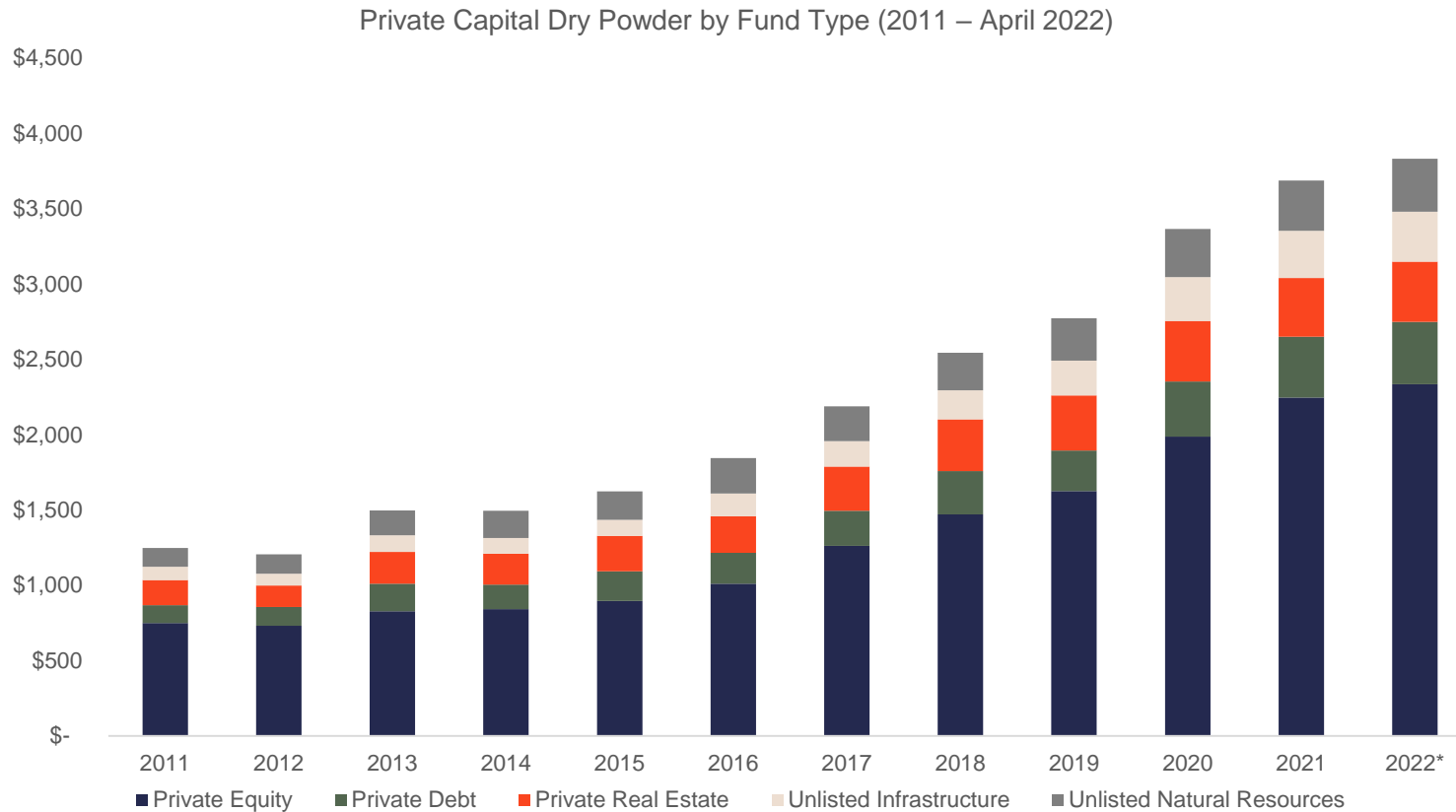


- Deal volume continues to be dominated by lower middle market deals with investment sizes below \$100 million through the first quarter of 2022
- However, deals with below \$100 million check sizes comprised only 9% of all deal volume by amount of capital invested through the first quarter of 2022

Source: Pitchbook, \*as of March 31, 2022.



# Private Capital Dry Powder

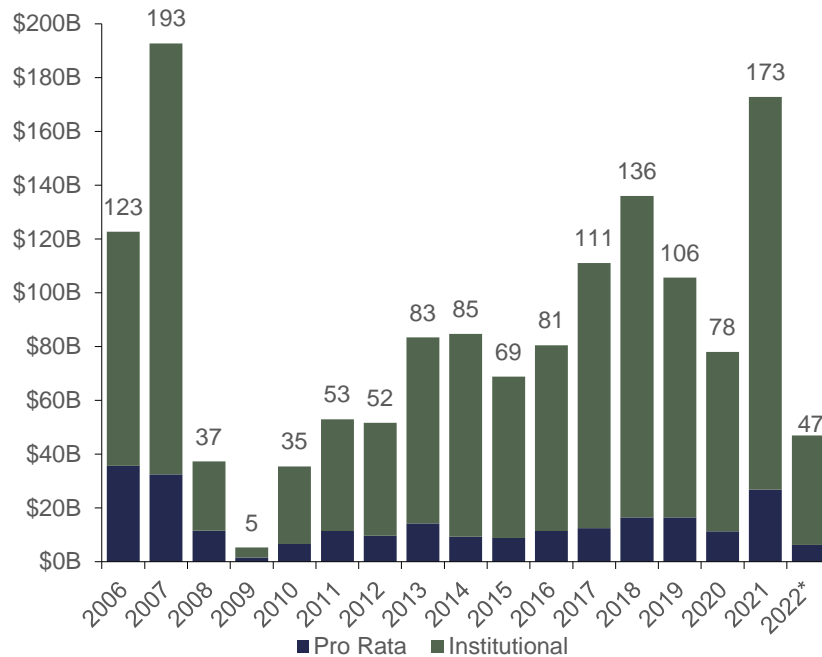


- Global private capital dry power continues to increase, topping \$3.8 trillion across all fund types
- Private equity comprises just under 61% of total dry powder in the market as of April 2022

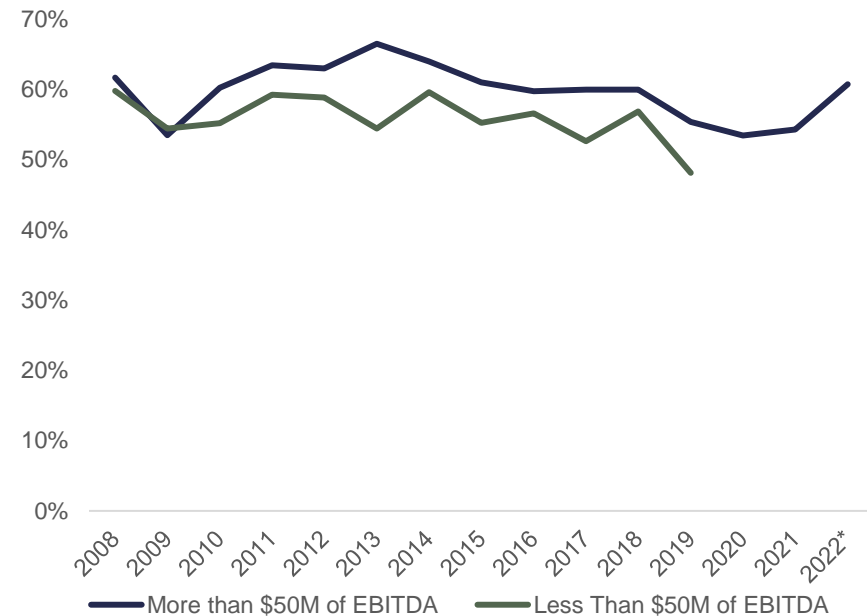
Source: Preqin, \*as of April 26, 2022.

# Private Equity – U.S. Debt Markets

Total U.S. LBO Loan Volume (\$B) (2006 – Q1 2022)



Percentage of Debt Used in LBOs (2008 – Q1 2022)

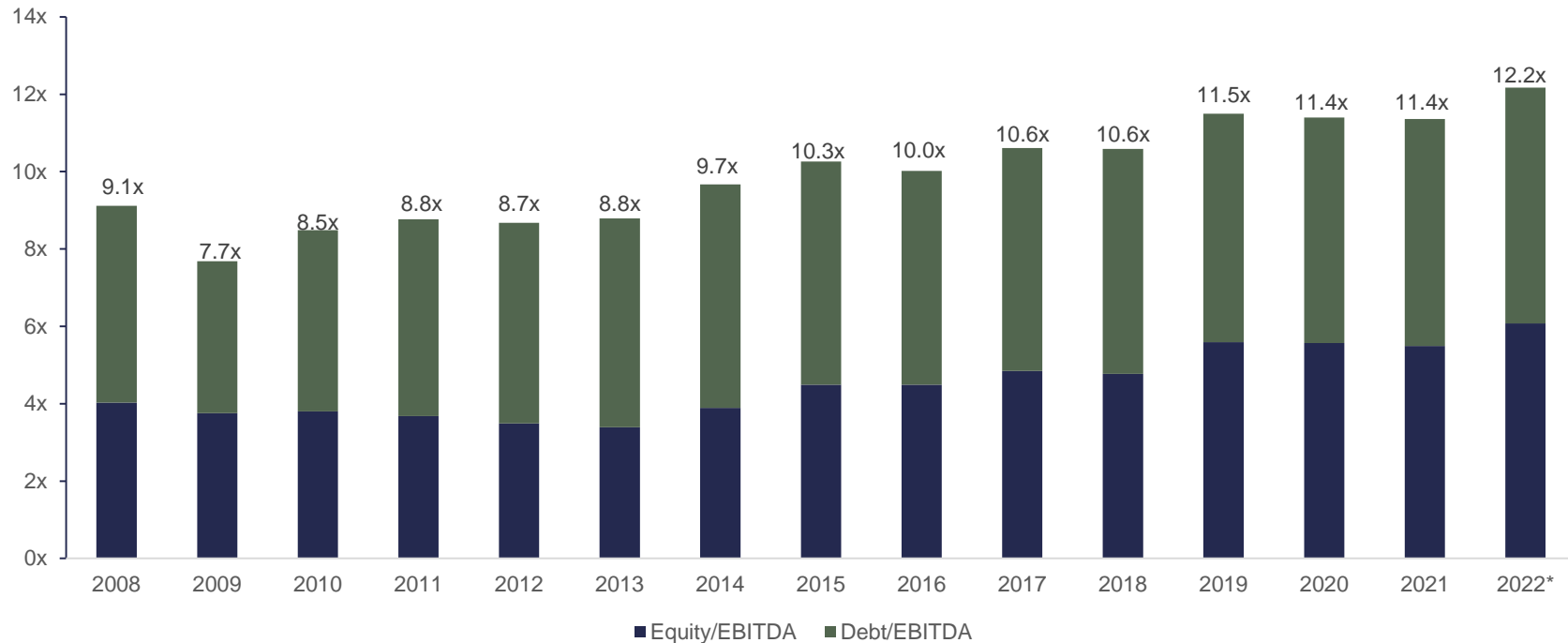


- 2022 has generated approximately \$47 billion in loan volume so far, which is on pace to surpass the loan volume from all prior years since 2008
- As debt multiples have increased, the percentage of debt used to finance leveraged buyouts through Q1 2022 has increased from the 2021 marks

Source: S&P LBO, \*as of March 31, 2022. "Less than \$50M of EBITDA" data for 2020 and 2021 not yet available.

# Private Equity – U.S. LBO Purchase Price Multiples

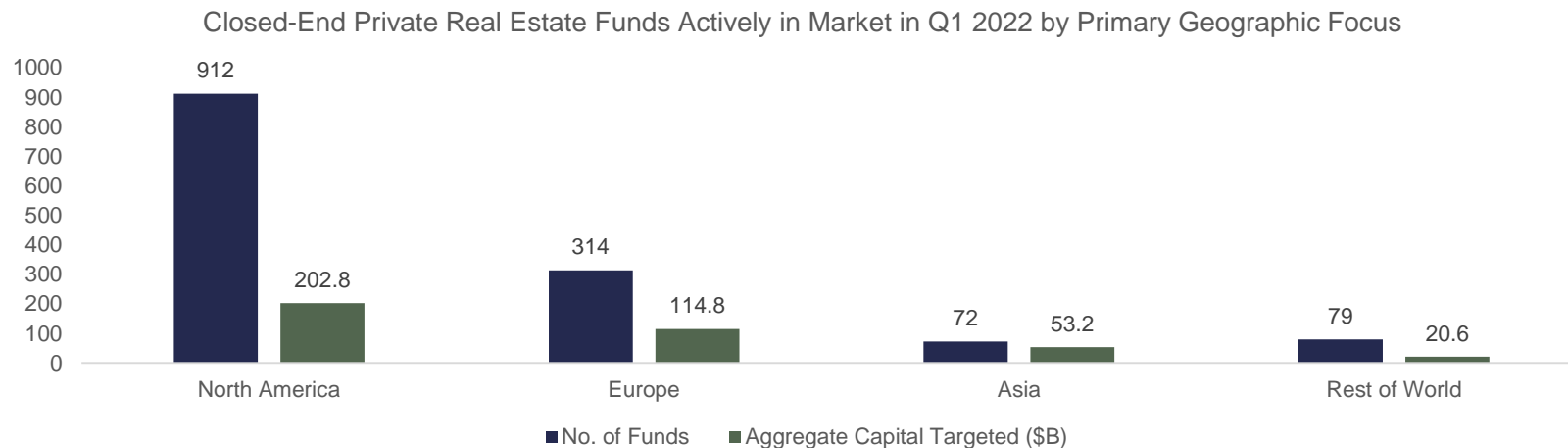
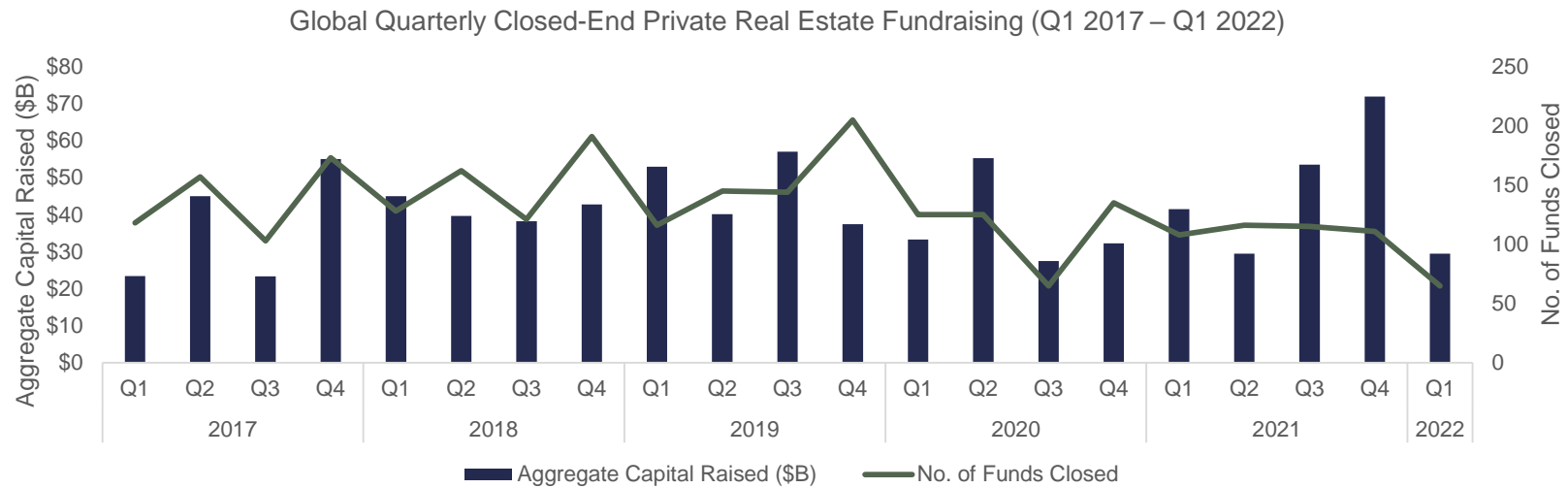
Purchase Price Multiples of U.S. LBO Transactions (2008 – Q1 2022)



- Purchase price multiples for U.S. LBOs have remained steady from 2019 to 2021 and have increased through Q1 2022 compared to previous years.

Source: S&P LBO, \*as of March 31, 2022.

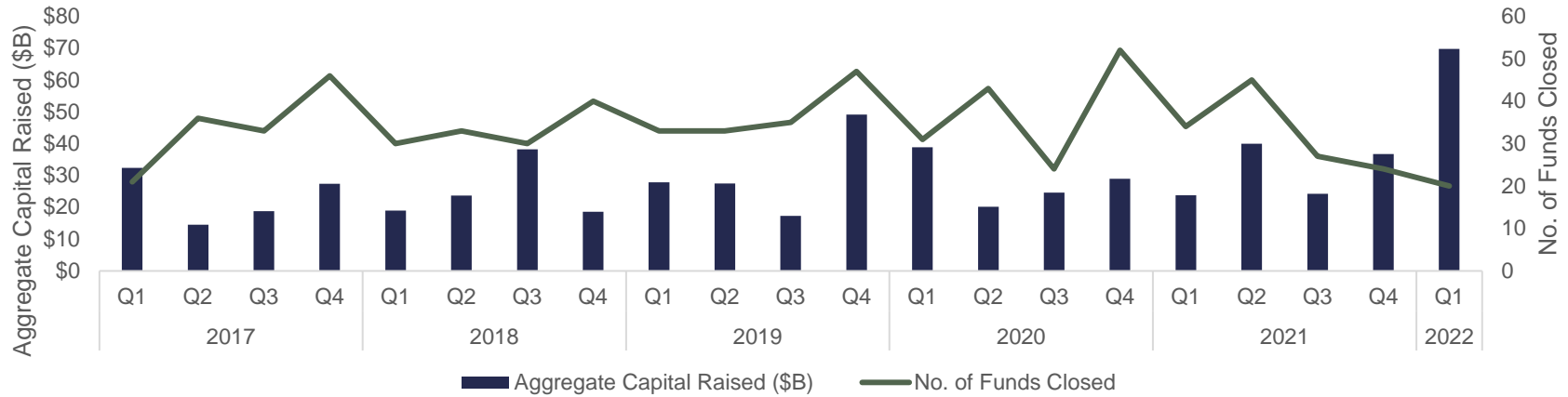
# Private Real Estate – Fundraising Activity



Source: Preqin, as of March 31, 2022.

# Unlisted Infrastructure – Fundraising & Investment Activity

Global Quarterly Closed-End Unlisted Infrastructure Fundraising (Q1 2017 – Q1 2022)



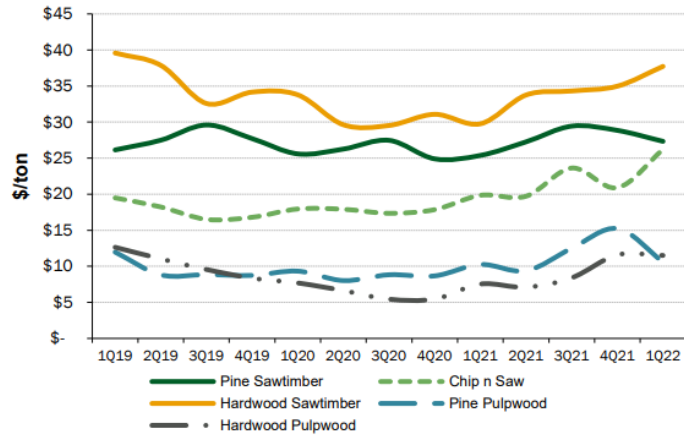
Unlisted Infrastructure Funds in Marker over Time (January 2018 - March 2022)



Source: Preqin, as of March 31, 2022.

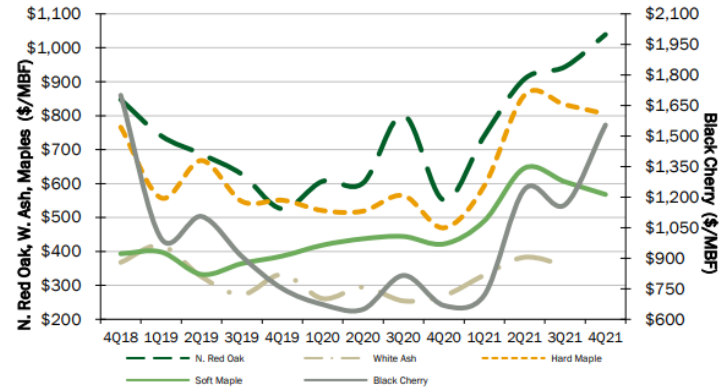
# Timber Investments

**Southeastern Timber Prices**



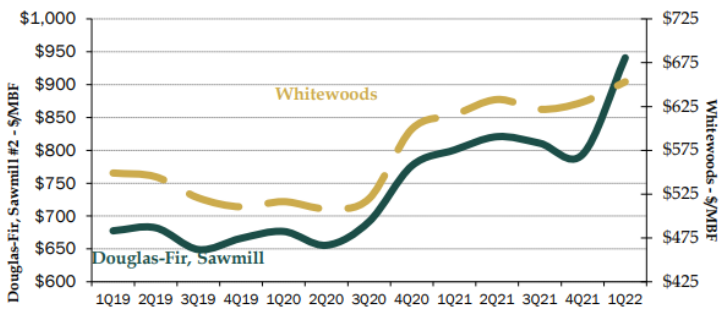
Source: Forest2Market®

**Northeastern Hardwood Timber Prices**



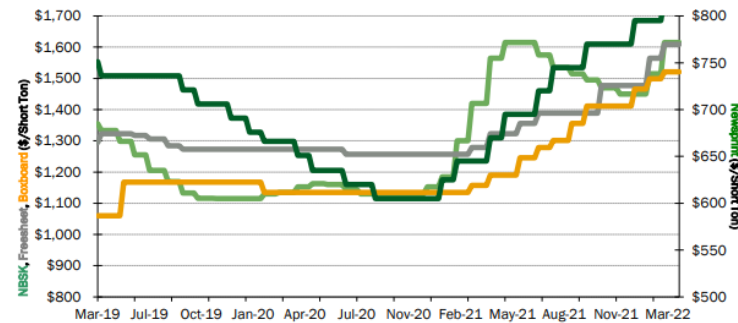
Source: Pennsylvania Woodlands Timber Market Report - Northwest Region

**Pacific Northwest Timber Prices**



Source: Fastmarkets RISI - Log Lines®

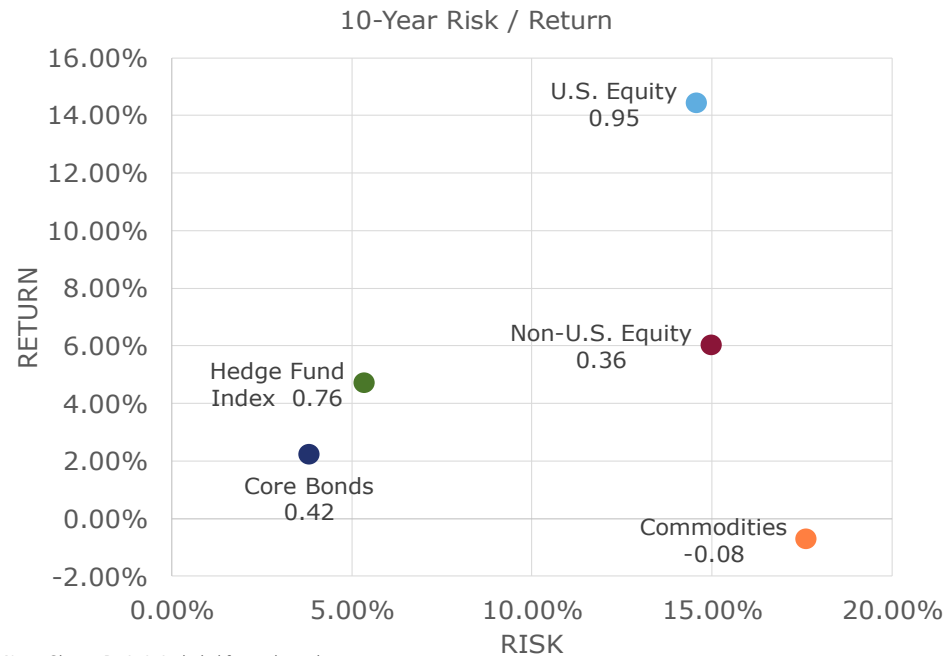
**Pulp and Paper**



Source: Fastmarkets RISI

# Hedge Fund Performance

As of 3/31/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Credit Suisse Hedge Fund Index	2.1	2.1	7.5	7.3	5.5	4.7
Event Driven	-2.2	-2.2	3.9	6.8	4.9	4.5
Global Macro	16.2	16.2	23.9	13.4	8.8	5.8
Long/Short Equity	-3.3	-3.3	2.3	6.3	5.8	5.6
Multi-Strategy	3.1	3.1	8.0	6.6	5.1	6.0
FT Wilshire 5000	-4.9	-4.9	13.1	18.7	15.7	14.4
MSCI ACWI ex-US (\$G)	-5.3	-5.3	-1.0	8.0	7.3	6.0
Bloomberg Aggregate	-5.9	-5.9	-4.2	1.7	2.1	2.2
Bloomberg Commodity Index	25.5	25.5	49.3	16.1	9.0	-0.7



Note: Sharpe Ratio is included for each market segment

# Total Fund



# Asset Allocation Compliance

Total Fund

Periods Ended As of March, 2022

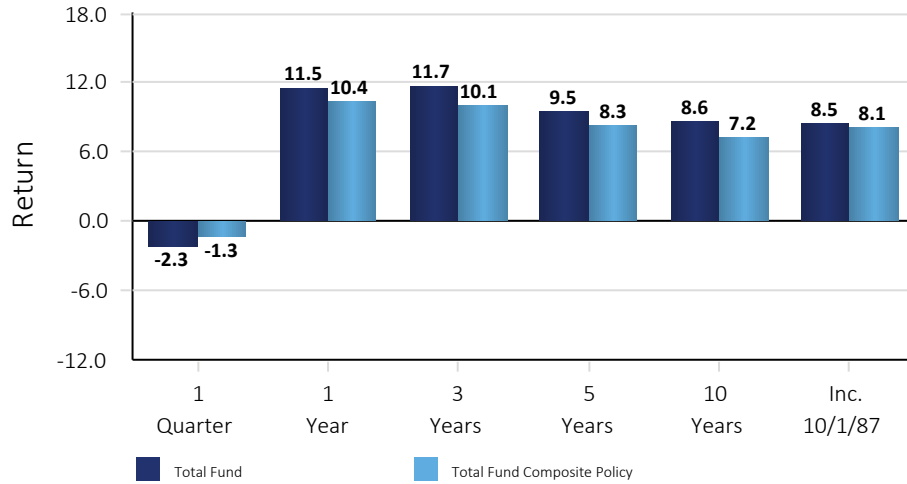
Asset Class	Current Allocation		Policy (%)	Difference to Target	
	(\$000)	(%)		(\$000)	(%)
Domestic Equity	91,182	17.5	17.8	(1,279)	(0.2)
International Equity	82,255	15.8	17.8	(10,206)	(2.0)
Private Equity	42,566	8.2	5.0	16,521	3.2
<b>Total Growth Assets</b>	<b>216,003</b>	<b>41.5</b>	<b>40.5</b>	<b>5,037</b>	<b>1.0</b>
Global Low Volatility Equity	49,479	9.5	10.0	(2,611)	(0.5)
Private Credit	22,019	4.2	5.0	(4,026)	(0.8)
<b>Total Defensive Growth Assets</b>	<b>71,498</b>	<b>13.7</b>	<b>15.0</b>	<b>(6,637)</b>	<b>(1.3)</b>
Core Fixed Income	119,016	22.8	24.5	(8,605)	(1.7)
Cash & Equivalents	2,718	0.5	0.0	2,718	0.5
<b>Total Defensive Assets</b>	<b>121,734</b>	<b>23.4</b>	<b>24.5</b>	<b>(5,888)</b>	<b>(1.1)</b>
U.S. TIPS	23,244	4.5	5.0	(2,802)	(0.5)
U.S. REITs	27,316	5.2	5.0	1,270	0.2
Commodities	32,533	6.2	5.0	6,488	1.2
Midstream Energy Infrastructure	28,577	5.5	5.0	2,532	0.5
<b>Total Inflation Oriented Assets</b>	<b>111,669</b>	<b>21.4</b>	<b>20.0</b>	<b>7,488</b>	<b>1.4</b>
<b>Total Fund Assets</b>	<b>520,904</b>	<b>100.0</b>	<b>100.0</b>	<b>-</b>	<b>0.0</b>

# Composite Performance Summary

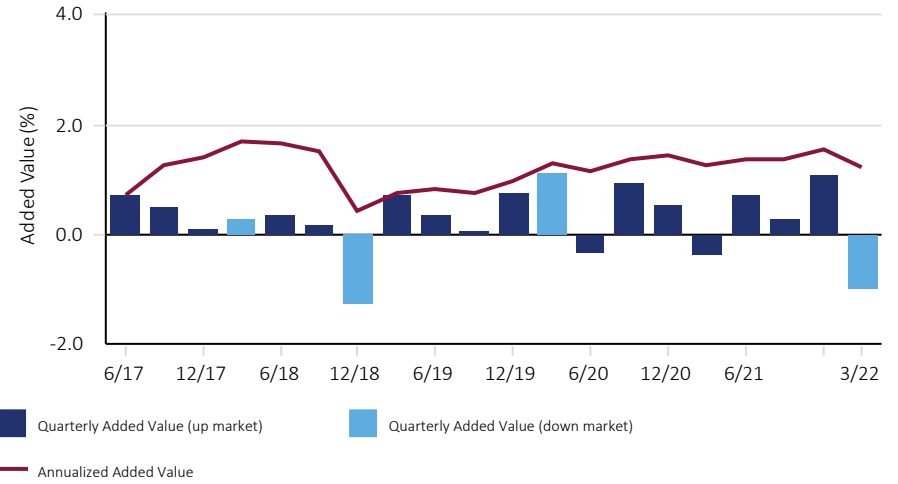
Total Fund

Periods Ended March 31, 2022

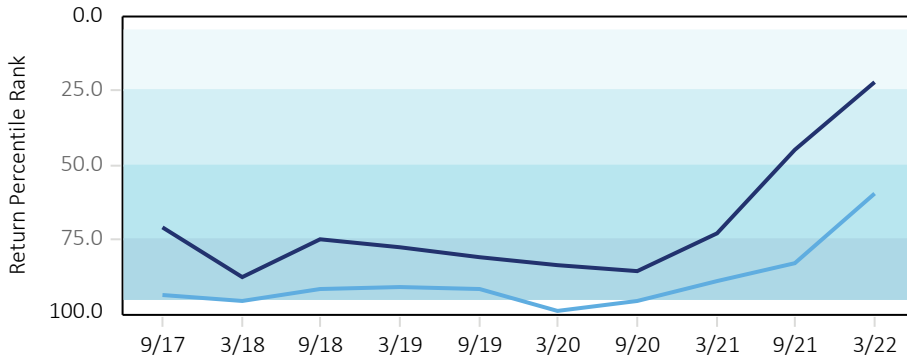
## Comparative Performance



## Added Value History

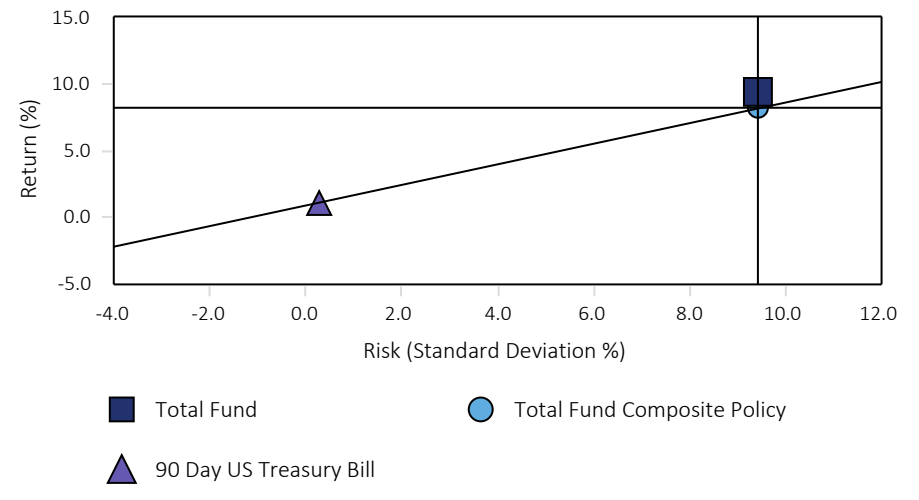


## Rolling Percentile Rank: All Public Plans-Total Fund



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
— Total Fund	10	1 (10%)	1 (10%)	3 (30%)	5 (50%)
— Benchmark	10	0 (0%)	0 (0%)	1 (10%)	9 (90%)

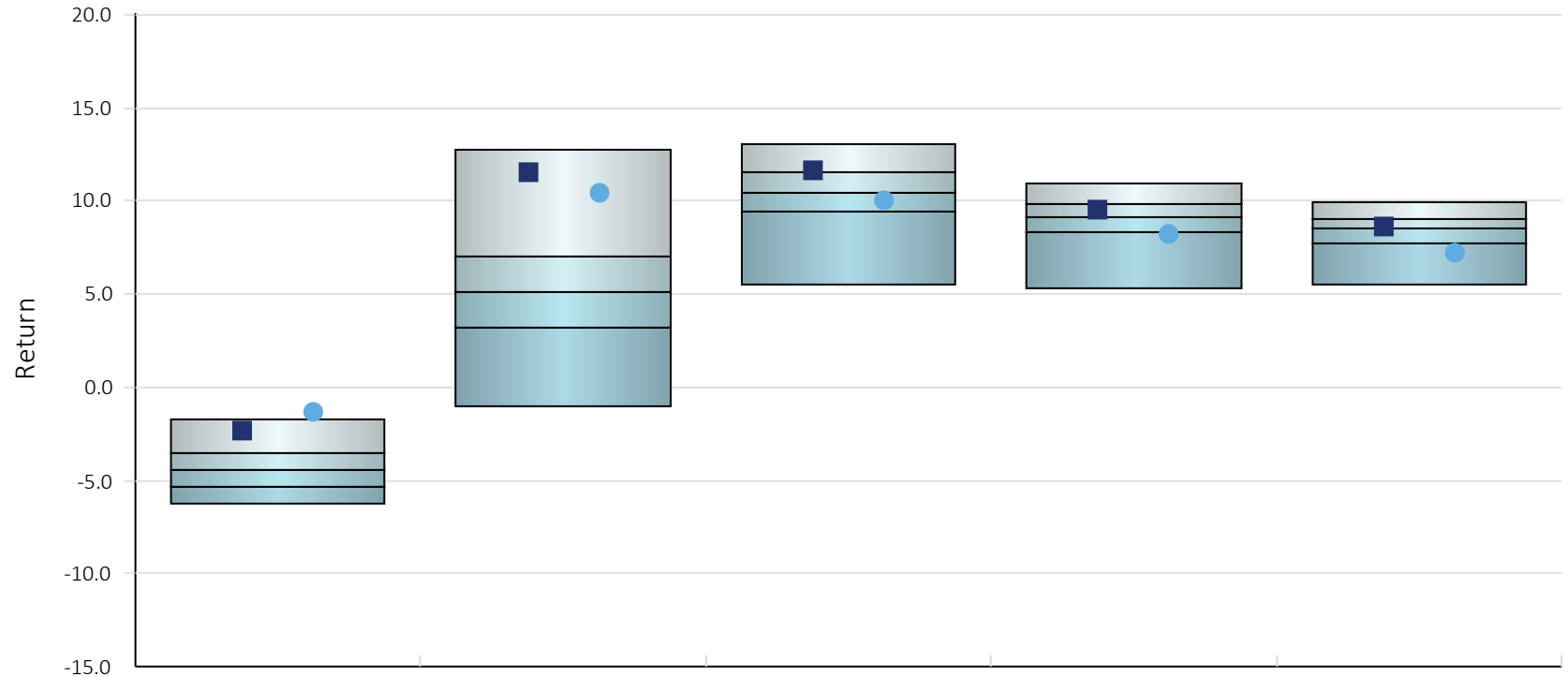
## Risk and Return 04/1/17 - 03/31/22



# Plan Sponsor Peer Group Analysis

Total Fund vs All Public Plans-Total Fund

Periods Ended March 31, 2022



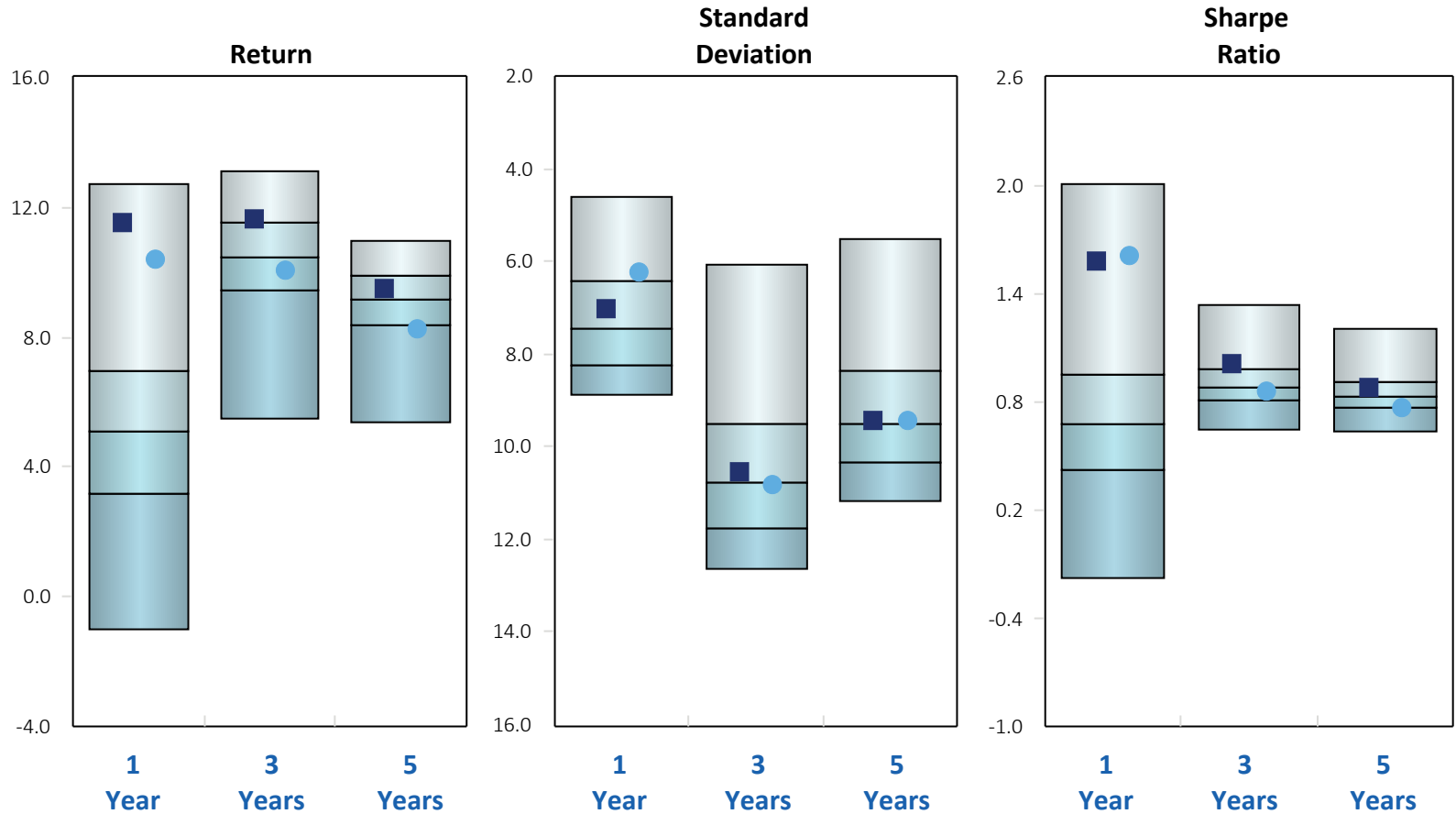
	QTD	1 Year	3 Years	5 Years	10 Years
■ Total Fund	-2.29 (11)	11.54 (8)	11.66 (22)	9.50 (38)	8.64 (42)
● Total Fund Composite Policy	-1.33 (4)	10.40 (11)	10.08 (60)	8.26 (78)	7.22 (87)
5th Percentile	-1.71	12.72	13.11	10.99	9.94
1st Quartile	-3.53	6.98	11.54	9.88	9.01
Median	-4.40	5.11	10.48	9.18	8.49
3rd Quartile	-5.36	3.19	9.44	8.35	7.76
95th Percentile	-6.26	-0.99	5.52	5.36	5.54
Population	300	298	291	279	246

Parenteses contain percentile rankings.  
Calculation based on monthly periodicity.

# Plan Sponsor Peer Group Analysis - Multi Statistics

Total Fund vs All Public Plans-Total Fund

Periods Ended March 31, 2022



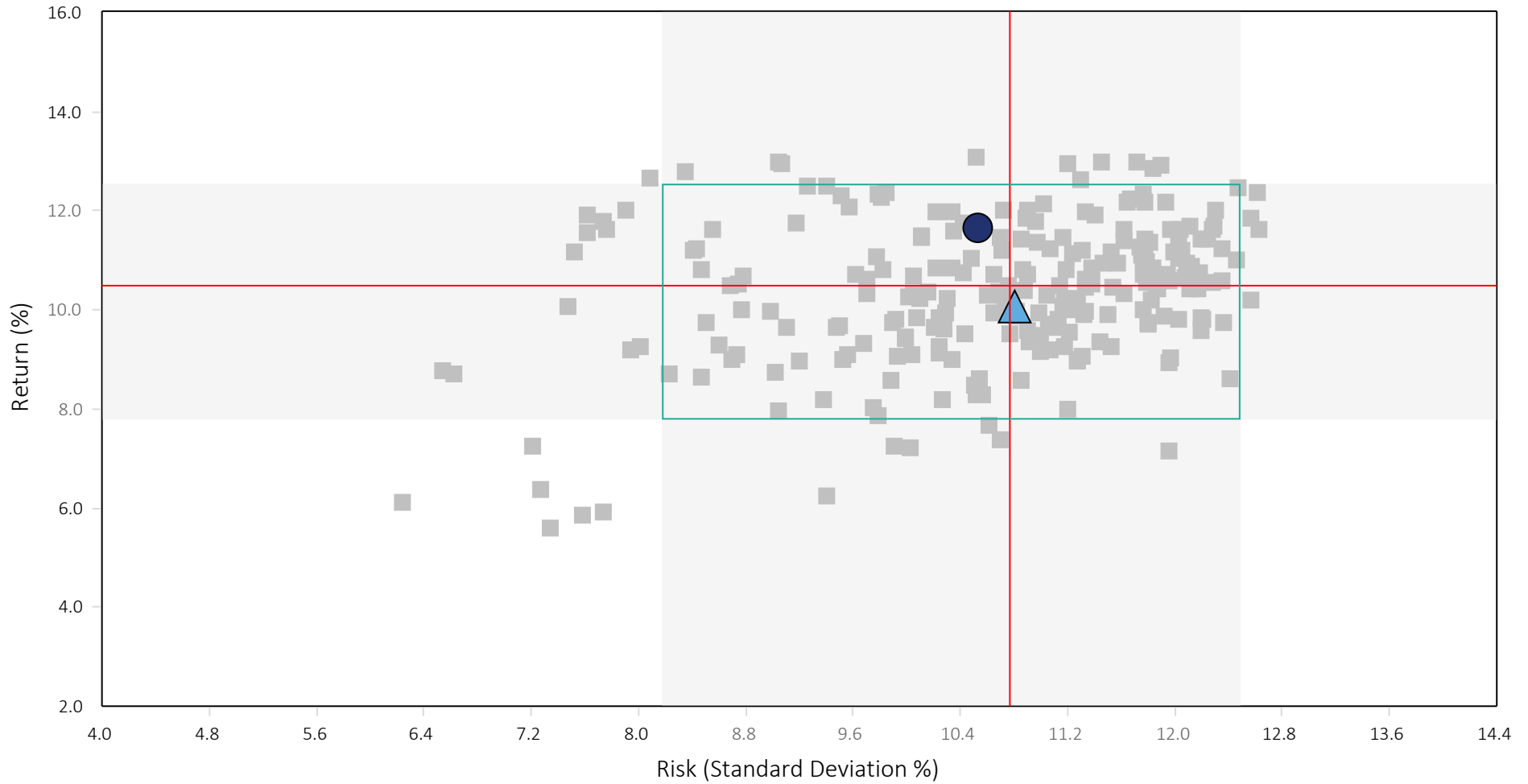
	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years	1 Year	3 Years	5 Years
■ Total Fund	11.54 (8)	11.66 (22)	9.50 (38)	7.03 (40)	10.53 (44)	9.44 (47)	1.59 (10)	1.02 (22)	0.88 (34)
● Total Fund Composite Policy	10.40 (11)	10.08 (60)	8.26 (78)	6.22 (22)	10.80 (50)	9.43 (46)	1.62 (10)	0.86 (58)	0.76 (76)
5th Percentile	12.72	13.11	10.99	4.63	6.09	5.53	2.01	1.34	1.20
1st Quartile	6.98	11.54	9.88	6.45	9.52	8.38	0.95	0.99	0.91
Median	5.11	10.48	9.18	7.47	10.77	9.52	0.68	0.88	0.83
3rd Quartile	3.19	9.44	8.35	8.25	11.77	10.33	0.43	0.81	0.77
95th Percentile	-0.99	5.52	5.36	8.86	12.65	11.17	-0.18	0.65	0.63

Parenteses contain percentile rankings.  
Calculation based on monthly periodicity.

# Plan Sponsor Scattergram

Total Fund vs All Public Plans-Total Fund

Periods Ended April 1, 2019 To March 31, 2022



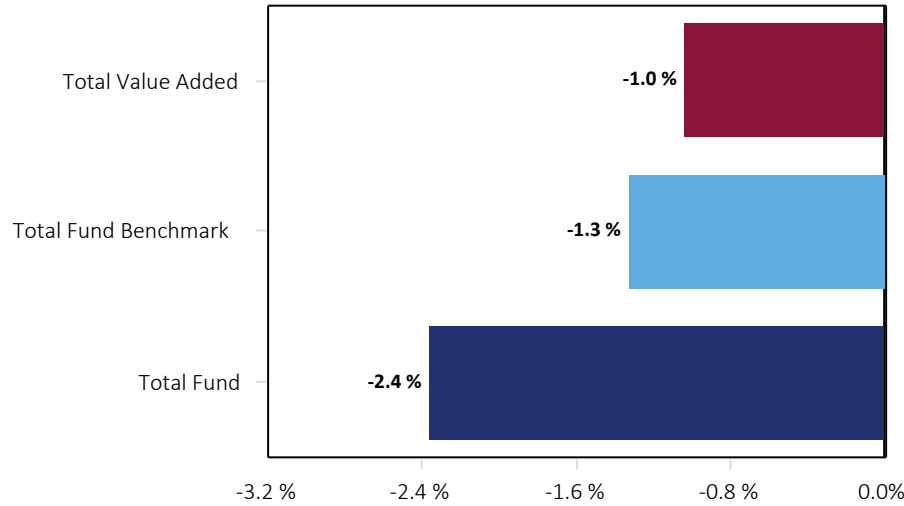
	Return	Standard Deviation
● Total Fund	11.66	10.53
▲ Total Fund Composite Policy	10.08	10.80
— Median	10.48	10.77

# Total Fund Attribution

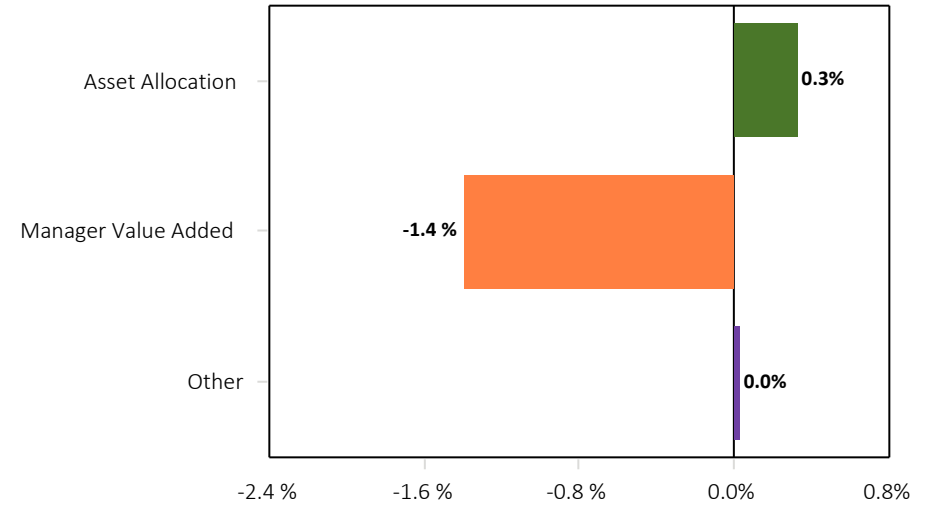
Total Fund

Periods Ended 1 Quarter Ending March 31, 2022

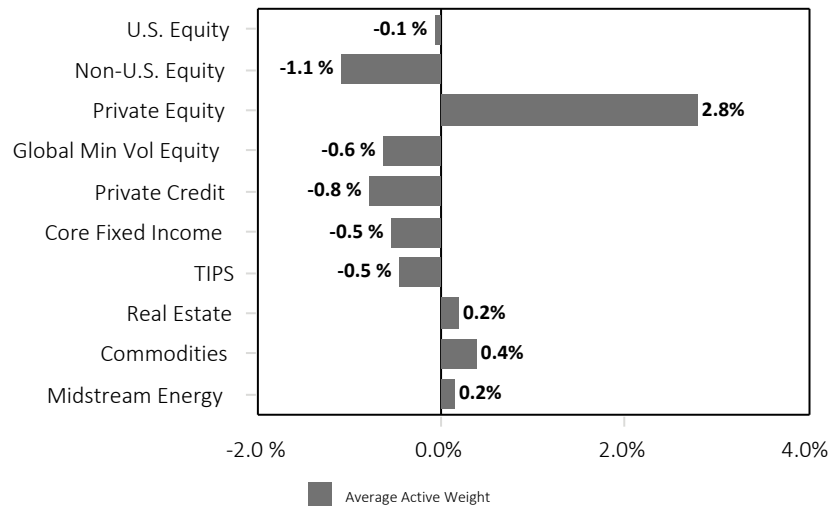
## Total Fund Performance



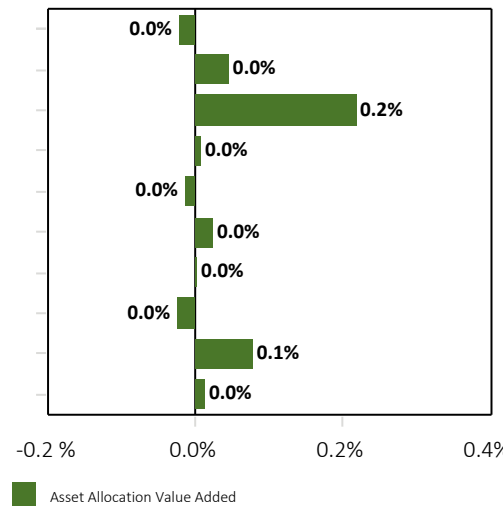
## Total Value Added:-1.0 %



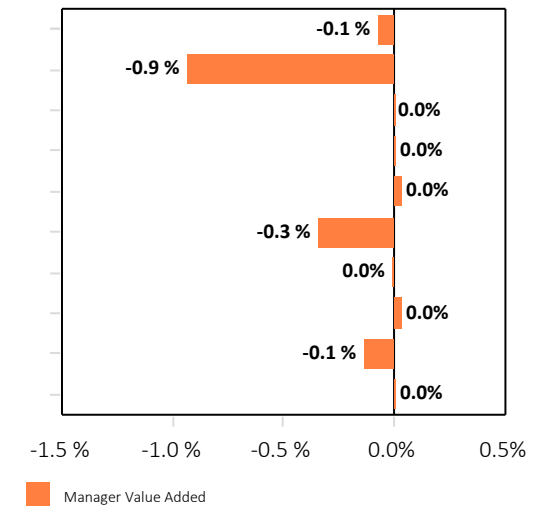
## Total Asset Allocation:0.3%



## Asset Allocation Value Added:0.3%



## Total Manager Value Added:-1.4 %

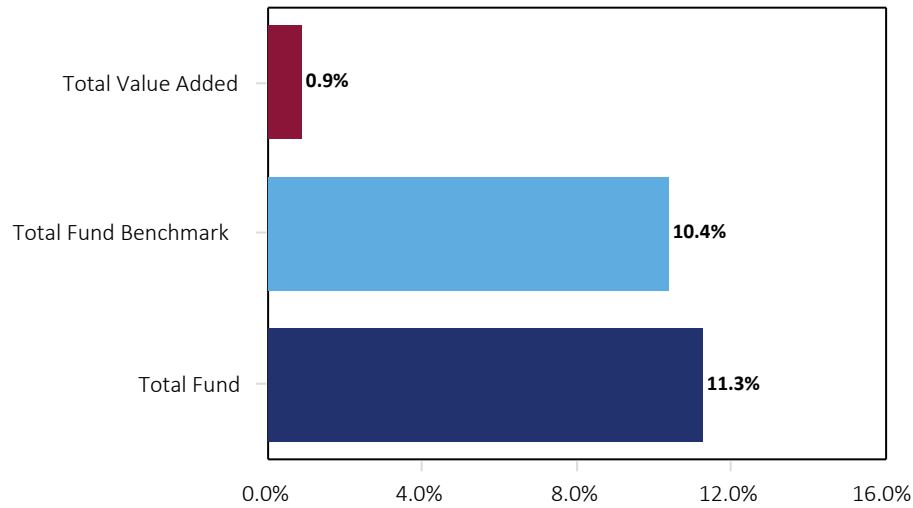


# Total Fund Attribution

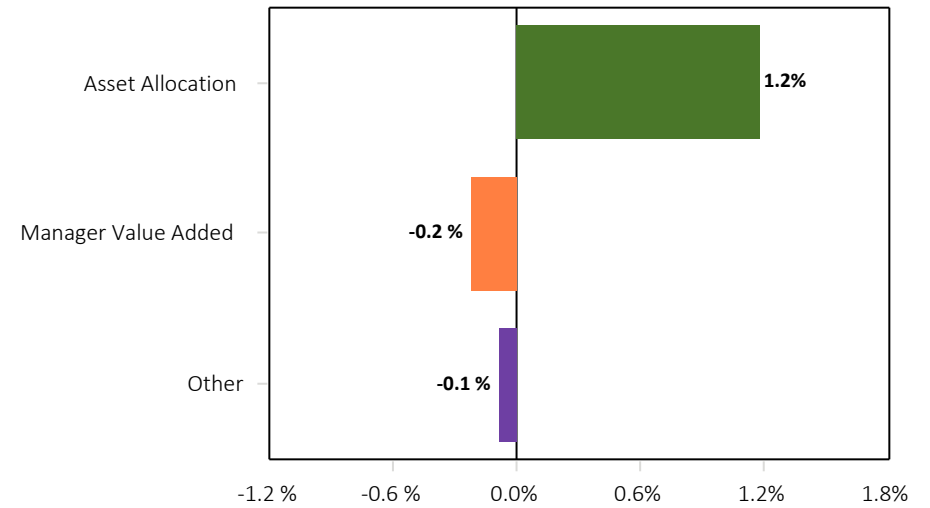
Total Fund

Periods Ended 1 Year Ending March 31, 2022

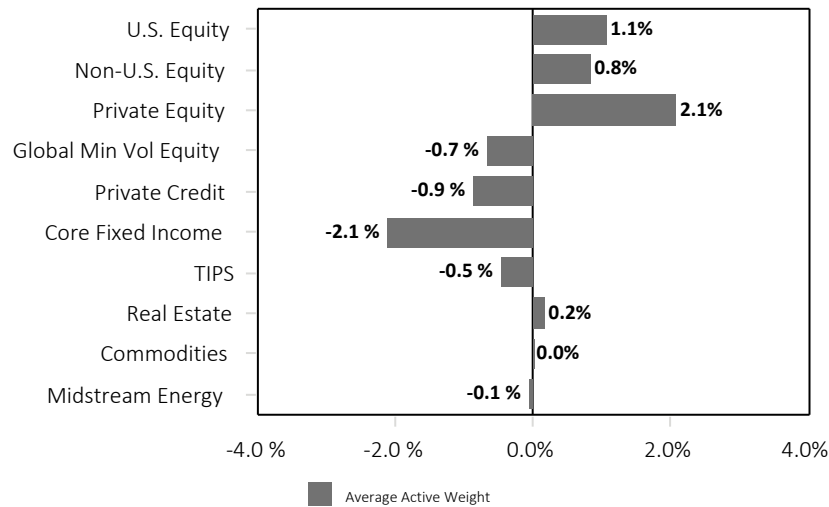
## Total Fund Performance



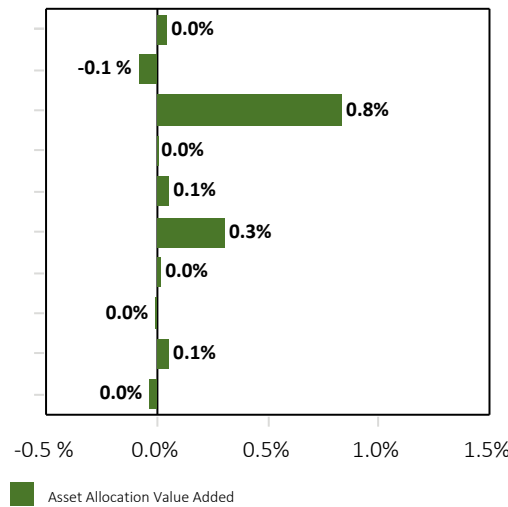
## Total Value Added:0.9%



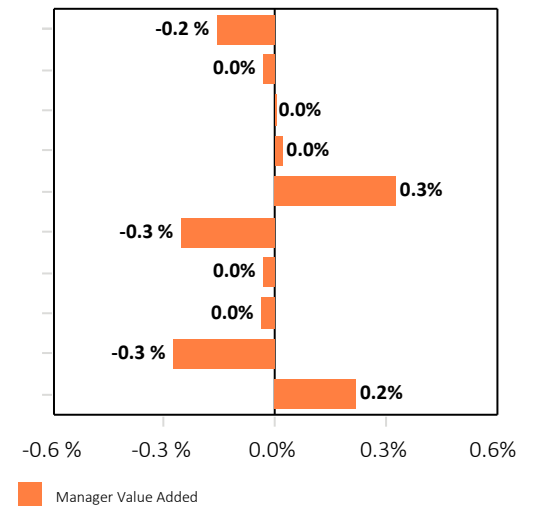
## Total Asset Allocation:1.2%



## Asset Allocation Value Added:1.2%



## Total Manager Value Added:-0.2%

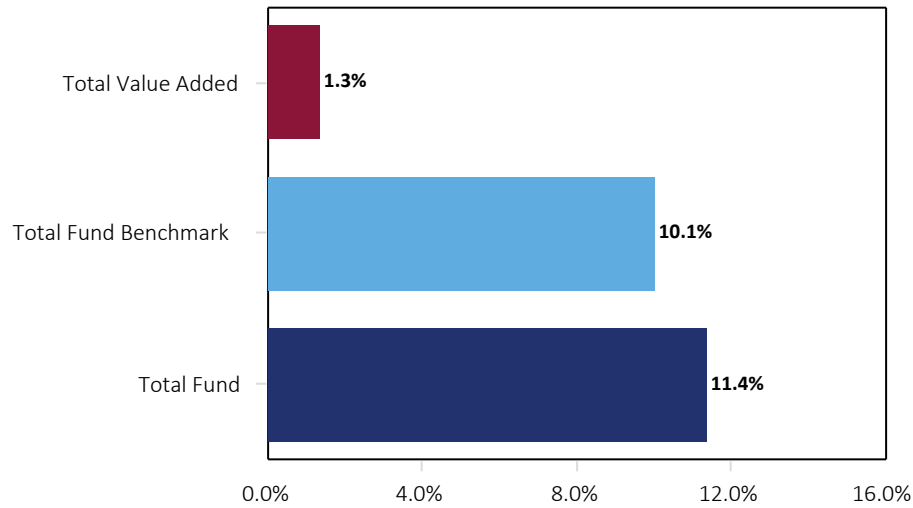


# Total Fund Attribution

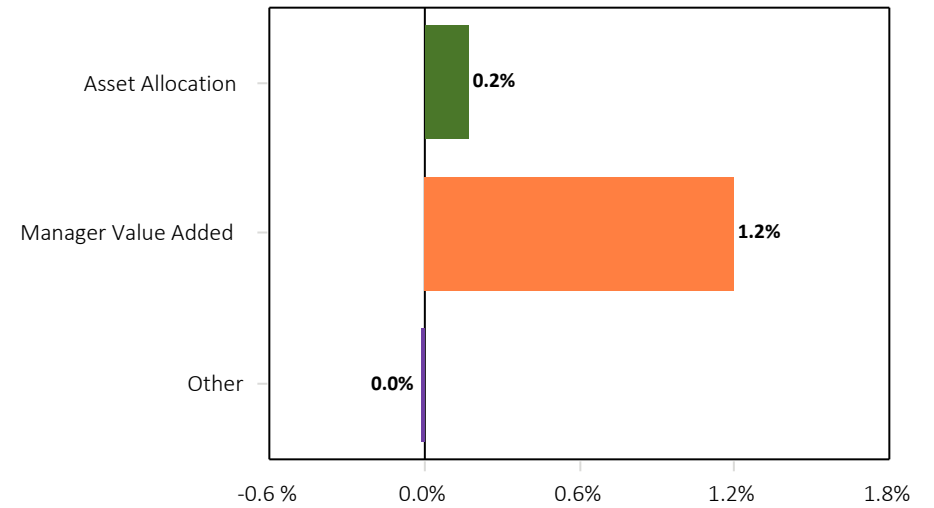
Total Fund

Periods Ended 3 Years Ending March 31, 2022

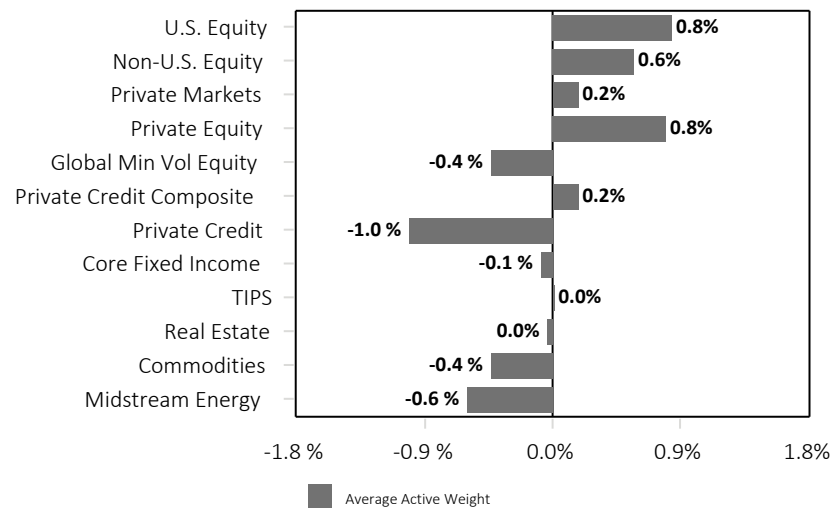
## Total Fund Performance



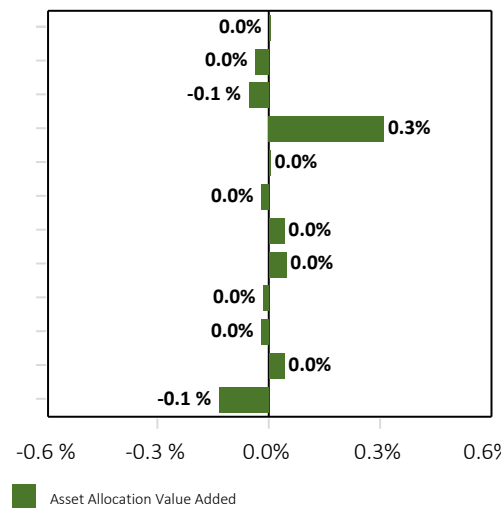
## Total Value Added: 1.3%



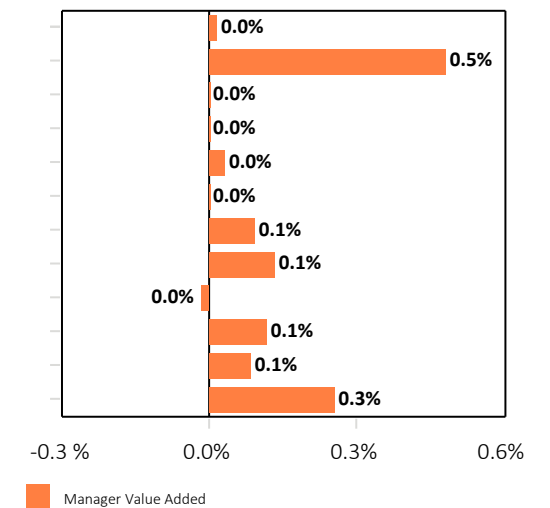
## Total Asset Allocation: 0.2%



## Asset Allocation Value Added: 0.2%



## Total Manager Value Added: 1.2%





# Asset Allocation & Performance

Total Fund

Periods Ended March 31, 2022

	Allocation		Performance (%) net of fees								
	Market Value \$	%	1 Quarter	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>Total Fund</b>	<b>520,903,690</b>	<b>100.00</b>	<b>-2.36</b>	<b>-2.36</b>	<b>11.29</b>	<b>11.41</b>	<b>9.24</b>	<b>7.49</b>	<b>8.38</b>	<b>8.32</b>	<b>10/1/1987</b>
Total Fund Composite Policy			-1.33	-1.33	10.40	10.08	8.26	6.56	7.22	8.08	
Value Added			-1.03	-1.03	0.89	1.33	0.98	0.93	1.16	0.24	
<b>U.S. Equity</b>	<b>91,181,864</b>	<b>17.50</b>	<b>-5.34</b>	<b>-5.34</b>	<b>12.27</b>	<b>18.63</b>	<b>15.63</b>	<b>13.68</b>	<b>14.61</b>	<b>10.31</b>	<b>10/1/1987</b>
FT Wilshire 5000 Total Market TR Index			-4.95	-4.95	13.09	18.66	15.65	13.68	14.43	10.31	
Value Added			-0.39	-0.39	-0.82	-0.03	-0.02	0.00	0.18	0.00	
<b>Non-U.S. Equity</b>	<b>82,254,777</b>	<b>15.79</b>	<b>-10.77</b>	<b>-10.77</b>	<b>-2.49</b>	<b>9.88</b>	<b>8.19</b>	<b>6.43</b>	<b>7.17</b>	<b>8.04</b>	<b>1/1/1990</b>
International Equity Composite Policy			-5.44	-5.44	-1.48	7.51	6.76	5.19	5.55	4.72	
Value Added			-5.33	-5.33	-1.01	2.37	1.43	1.24	1.62	3.32	
<b>Private Equity</b>	<b>42,566,148</b>	<b>8.17</b>	<b>6.60</b>	<b>6.60</b>	<b>60.85</b>	<b>36.35</b>	<b>28.33</b>	<b>22.76</b>	<b>17.57</b>	<b>15.47</b>	<b>5/1/2010</b>
Private Equity Policy Index			6.60	6.60	60.85	36.35	28.33	22.76	17.57	15.47	
Value Added			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Global Low Volatility Equity</b>	<b>49,478,893</b>	<b>9.50</b>	<b>-2.93</b>	<b>-2.93</b>	<b>8.88</b>					<b>8.61</b>	<b>6/1/2019</b>
MSCI ACWI Minimum Volatility Index (Net)			-3.02	-3.02	8.63					8.25	
Value Added			0.09	0.09	0.25					0.36	
<b>Private Credit</b>	<b>22,019,302</b>	<b>4.23</b>	<b>0.84</b>	<b>0.84</b>	<b>10.85</b>	<b>6.03</b>				<b>5.25</b>	<b>10/1/2018</b>
S&P/LSTA Leverage Loan Index			-0.10	-0.10	3.26	4.23				3.73	
Value Added			0.94	0.94	7.59	1.80				1.52	
<b>Core Fixed Income</b>	<b>119,016,006</b>	<b>22.85</b>	<b>-7.30</b>	<b>-7.30</b>	<b>-5.02</b>	<b>2.25</b>	<b>2.74</b>	<b>2.60</b>	<b>3.23</b>	<b>6.36</b>	<b>10/1/1987</b>
Blmbg. U.S. Aggregate			-5.93	-5.93	-4.15	1.69	2.14	1.87	2.24	5.93	
Value Added			-1.37	-1.37	-0.87	0.56	0.60	0.73	0.99	0.43	

# Asset Allocation & Performance

Total Fund

Periods Ended March 31, 2022

	Allocation		Performance (%) net of fees								
	Market Value \$	%	1 Quarter	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>Total Real Assets Composite</b>	<b>111,669,174</b>	<b>21.44</b>	<b>10.02</b>	<b>10.02</b>	<b>30.28</b>	<b>11.63</b>	<b>7.54</b>	<b>4.85</b>		<b>4.85</b>	<b>4/1/2015</b>
Real Assets Composite Policy			9.07	9.07	29.43	10.75	7.15	4.56		4.56	
Value Added			0.95	0.95	0.85	0.88	0.39	0.29		0.29	
<b>TIPS</b>	<b>23,243,665</b>	<b>4.46</b>	<b>-3.23</b>	<b>-3.23</b>	<b>3.60</b>	<b>5.88</b>	<b>4.12</b>			<b>3.35</b>	<b>5/1/2015</b>
Blmbg. U.S. TIPS			-3.02	-3.02	4.29	6.22	4.43			3.52	
Value Added			-0.21	-0.21	-0.69	-0.34	-0.31			-0.17	
<b>Real Estate</b>	<b>27,315,610</b>	<b>5.24</b>	<b>-3.05</b>	<b>-3.05</b>	<b>27.06</b>	<b>11.39</b>	<b>9.76</b>	<b>6.37</b>	<b>7.79</b>	<b>9.96</b>	<b>6/1/2009</b>
Real Estate Policy Index			-3.71	-3.71	27.72	8.82	8.54	6.23	7.93	10.30	
Value Added			0.66	0.66	-0.66	2.57	1.22	0.14	-0.14	-0.34	
<b>Commodities</b>	<b>32,532,922</b>	<b>6.25</b>	<b>22.52</b>	<b>22.52</b>	<b>42.43</b>	<b>18.95</b>	<b>11.52</b>	<b>6.32</b>		<b>0.66</b>	<b>2/1/2013</b>
Bloomberg Commodity Index Total Return			25.55	25.55	49.25	16.12	9.00	4.33		-0.81	
Value Added			-3.03	-3.03	-6.82	2.83	2.52	1.99		1.47	
<b>Midstream Energy Composite</b>	<b>28,576,977</b>	<b>5.49</b>	<b>24.33</b>	<b>24.33</b>	<b>47.91</b>	<b>6.65</b>	<b>2.68</b>	<b>0.01</b>		<b>-0.13</b>	<b>3/1/2015</b>
Midstream Energy Policy Index			23.95	23.95	41.93	0.41	-2.66	-6.19		-6.63	
Value Added			0.38	0.38	5.98	6.24	5.34	6.20		6.50	

# Historical Hybrid Composition

## Grand Rapids General Retirement System

Periods Ended March 31, 2022

Policy Index	Weight (%)
<b>Jan-1976</b>	
FT Wilshire 5000 Total Market TR Index	55.00
Blmbg. U.S. Aggregate	40.00
MSCI EAFE Index (Net)	5.00
<b>Jul-1998</b>	
FT Wilshire 5000 Total Market TR Index	50.00
Blmbg. U.S. Aggregate	40.00
MSCI EAFE Index (Net)	10.00
<b>Oct-2002</b>	
FT Wilshire 5000 Total Market TR Index	50.00
Blmbg. U.S. Aggregate	35.00
MSCI EAFE Index (Net)	15.00
<b>Apr-2006</b>	
FT Wilshire 5000 Total Market TR Index	55.00
Blmbg. U.S. Aggregate	30.00
MSCI EAFE Index (Net)	15.00
<b>Jul-2006</b>	
FT Wilshire 5000 Total Market TR Index	55.00
Blmbg. U.S. Aggregate	30.00
MSCI AC World ex USA (Net)	15.00
<b>Jul-2009</b>	
FT Wilshire 5000 Total Market TR Index	50.00
Blmbg. U.S. Aggregate	30.00
MSCI AC World ex USA (Net)	15.00
FTSE EPRA/NAREIT Developed Index (Net)	5.00

Policy Index	Weight (%)
<b>Apr-2010</b>	
FT Wilshire 5000 Total Market TR Index	50.00
Blmbg. U.S. Aggregate	30.00
MSCI AC World ex USA (Net)	15.00
FTSE EPRA/NAREIT Developed Index (Net)	5.00
<b>May-2010</b>	
FT Wilshire 5000 Total Market TR Index	45.00
Blmbg. U.S. Aggregate	30.00
MSCI AC World ex USA (Net)	15.00
FTSE EPRA/NAREIT Developed Index (Net)	5.00
Private Equity	5.00
<b>Jul-2010</b>	
FT Wilshire 5000 Total Market TR Index	45.00
Blmbg. U.S. Aggregate	30.00
MSCI AC World ex USA (Net)	15.00
FTSE EPRA/NAREIT Developed Index (Net)	5.00
Private Equity Policy Index	5.00
<b>Jan-2013</b>	
FT Wilshire 5000 Total Market TR Index	40.00
Blmbg. U.S. Aggregate	30.00
MSCI AC World ex USA (Net)	15.00
FTSE EPRA/NAREIT Developed Index (Net)	5.00
Private Equity Policy Index	5.00
Bloomberg Commodity Index Total Return	5.00

# Historical Hybrid Composition

## Grand Rapids General Retirement System

Periods Ended March 31, 2022

Policy Index	Weight (%)
<b>Apr-2015</b>	
FT Wilshire 5000 Total Market TR Index	22.50
Blmbg. U.S. Aggregate	25.00
MSCI AC World ex USA (Net)	22.50
FTSE EPRA/NAREIT Developed Index (Net)	5.00
Private Equity Policy Index	5.00
Bloomberg Commodity Index Total Return	5.00
S&P MLP Index	5.00
Blmbg. U.S. TIPS	10.00
<b>Dec-2018</b>	
FT Wilshire 5000 Total Market TR Index	22.50
Blmbg. U.S. Aggregate	25.00
MSCI AC World ex USA (Net)	22.50
FTSE EPRA/NAREIT Developed Index (Net)	5.00
Private Equity Policy Index	5.00
Bloomberg Commodity Index Total Return	5.00
S&P MLP Index	5.00
Blmbg. U.S. TIPS	10.00

Policy Index	Weight (%)
<b>Jul-2019</b>	
FT Wilshire 5000 Total Market TR Index	17.75
Blmbg. U.S. Aggregate	24.50
MSCI AC World ex USA (Net)	17.75
FTSE EPRA/NAREIT Developed Index (Net)	5.00
Private Equity Policy Index	5.00
Bloomberg Commodity Index Total Return	5.00
Alerian MLP Index	5.00
Blmbg. U.S. TIPS	5.00
S&P LSTA Leverage Loan Index	5.00
MSCI ACWI Minimum Volatility Index (Net)	10.00
<b>Oct-2019</b>	
FT Wilshire 5000 Total Market TR Index	17.75
MSCI AC World ex USA (Net)	17.75
MSCI ACWI Minimum Volatility Index (Net)	10.00
Private Equity Policy Index	5.00
S&P LSTA Leverage Loan Index	5.00
Blmbg. U.S. Aggregate	24.50
Blmbg. U.S. TIPS	5.00
Dow Jones U.S. Select REIT	5.00
Bloomberg Commodity Index Total Return	5.00
Alerian MLP Index	5.00

# Historical Hybrid Composition

## Grand Rapids General Retirement System

*Periods Ended March 31, 2022*

<b>Policy Index</b>	<b>Weight (%)</b>
<b>Oct-2020</b>	
FT Wilshire 5000 Total Market TR Index	17.75
MSCI AC World ex USA (Net)	17.75
Private Equity Policy Index	5.00
MSCI ACWI Minimum Volatility Index (Net)	10.00
S&P LSTA Leverage Loan Index	5.00
Blmbg. U.S. Aggregate	24.50
Blmbg. U.S. TIPS	5.00
Dow Jones U.S. Select REIT	5.00
Bloomberg Commodity Index Total Return	5.00
Alerian Midstream Energy Index	5.00

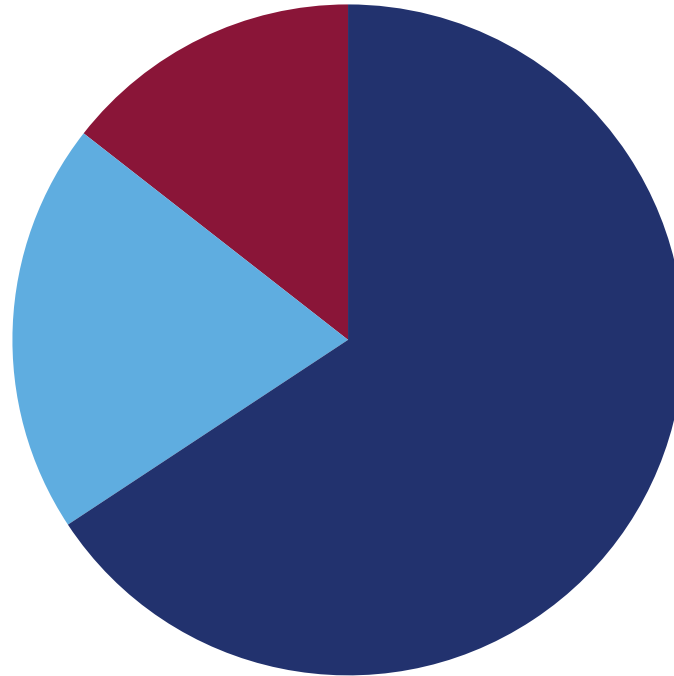
# U.S. Equity

# Asset Allocation By Manager

U.S. Equity

Periods Ended March 31, 2022

Mar-2022 : 91,181,864



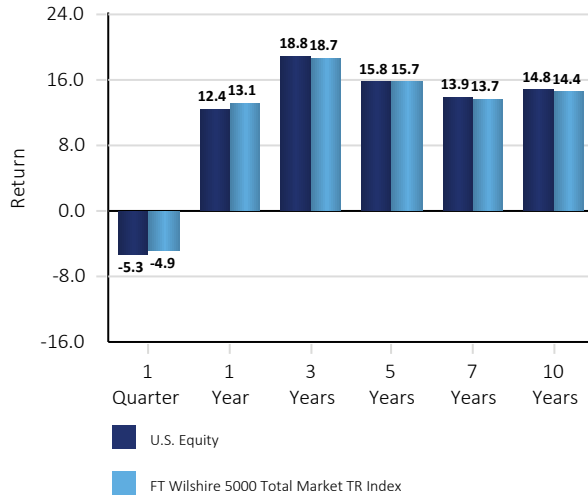
	Market Value \$	Allocation (%)
■ NTAM S&P 500	59,922,725	65.7
■ PIMCO Stock Plus	18,093,033	19.8
■ Wellington Small Cap	13,166,106	14.4

# Performance Summary

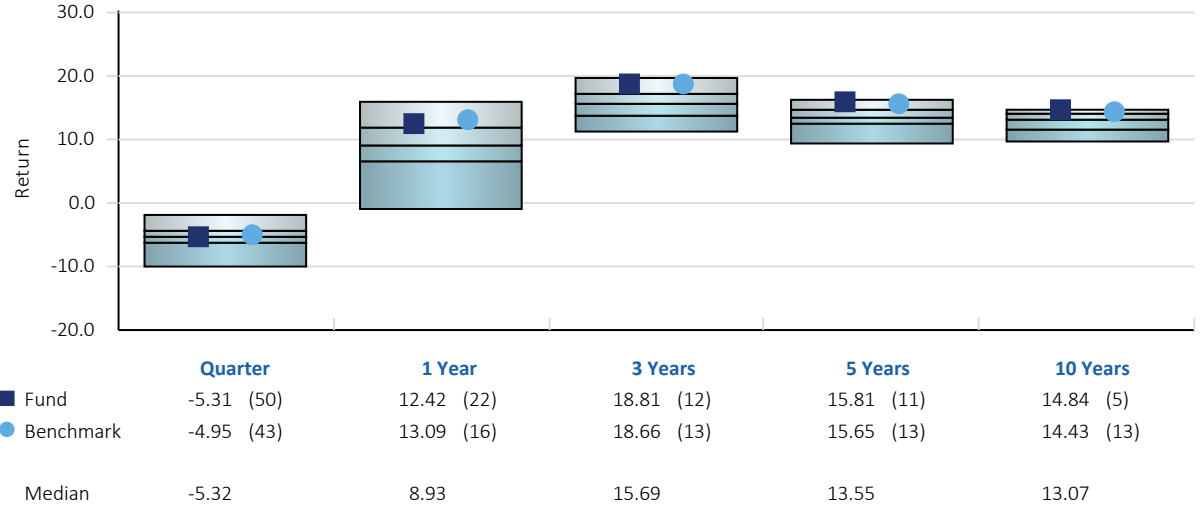
## U.S. Equity

Periods Ended March 31, 2022

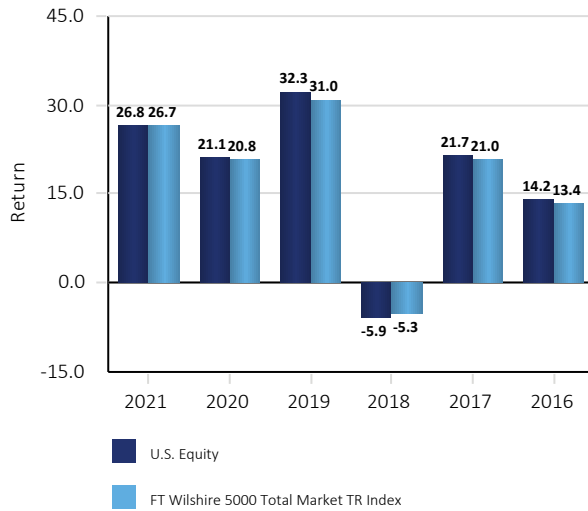
### Comparative Performance



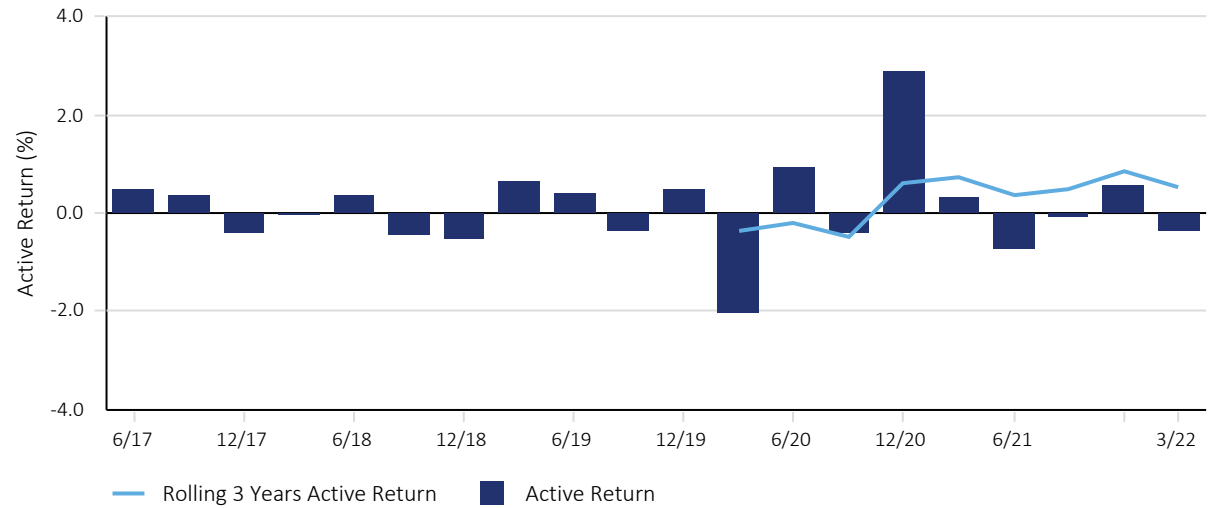
### Peer Group Analysis: All Master Trust-US Equity Segment



### Comparative Performance



### Rolling 3 Years Performance



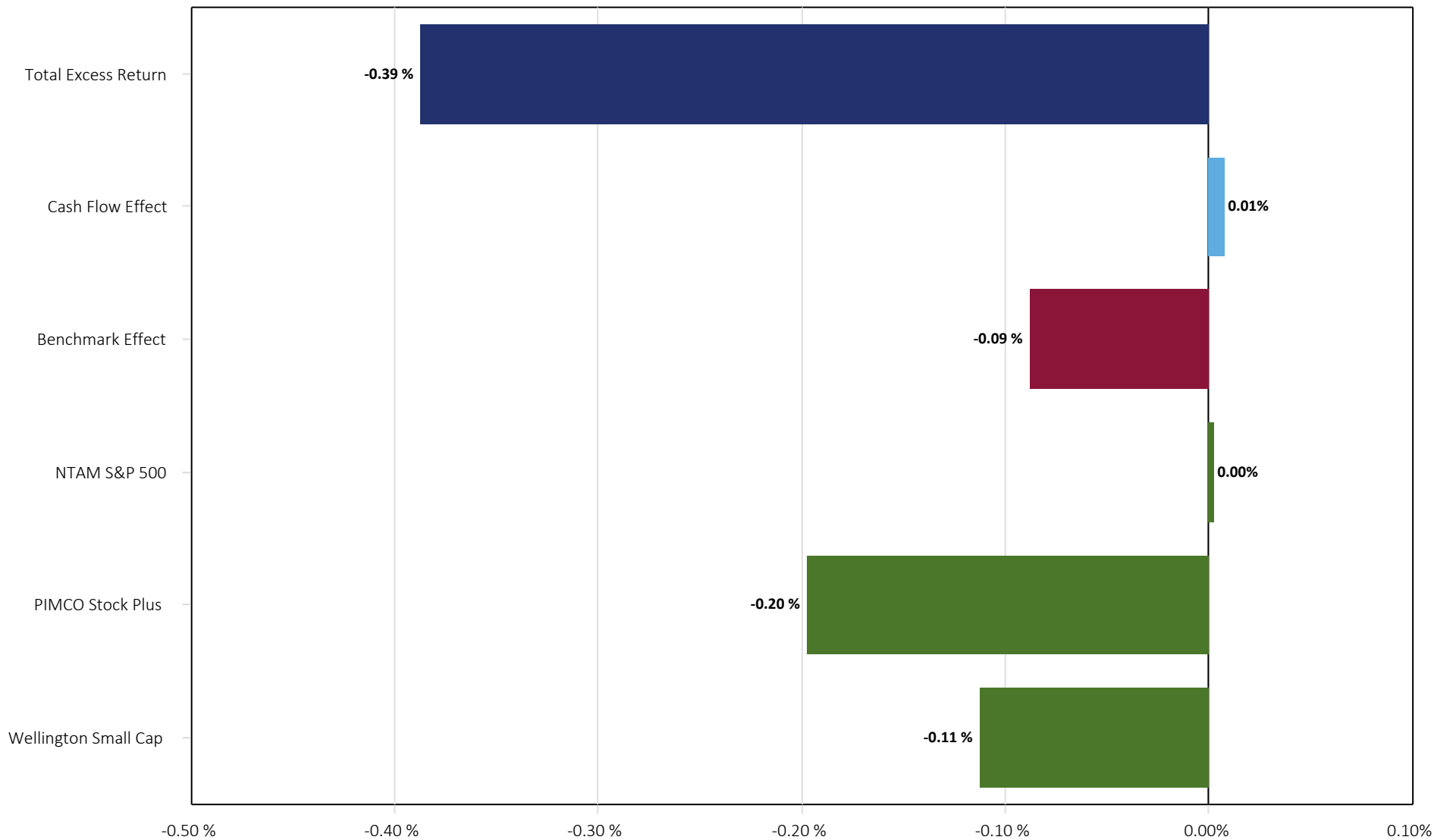


# Asset Class Attribution

U.S. Equity

Periods Ended 1 Quarter Ending March 31, 2022

1 Quarter



# Asset Allocation & Performance

## U.S. Equity

Periods Ended March 31, 2022

	Allocation		Performance (%) net of fees								
	Market Value \$	%	1 Quarter	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>U.S. Equity</b>	<b>91,181,864</b>	<b>100.00</b>	<b>-5.34</b>	<b>-5.34</b>	<b>12.27</b>	<b>18.63</b>	<b>15.63</b>	<b>13.68</b>	<b>14.61</b>	<b>10.31</b>	<b>10/1/1987</b>
FT Wilshire 5000 Total Market TR Index			-4.95	-4.95	13.09	18.66	15.65	13.68	14.43	10.31	
Value Added			-0.39	-0.39	-0.82	-0.03	-0.02	0.00	0.18	0.00	
<b>NTAM S&amp;P 500</b>	<b>59,922,725</b>	<b>65.72</b>	<b>-4.59</b>	<b>-4.59</b>	<b>15.62</b>	<b>18.92</b>	<b>15.99</b>	<b>14.02</b>	<b>14.65</b>	<b>9.21</b>	<b>4/1/1998</b>
NTAM Policy			-4.60	-4.60	15.65	18.92	15.99	14.01	14.64	8.21	
Value Added			0.01	0.01	-0.03	0.00	0.00	0.01	0.01	1.00	
<b>PIMCO Stock Plus</b>	<b>18,093,033</b>	<b>19.84</b>	<b>-5.57</b>	<b>-5.57</b>	<b>14.35</b>	<b>18.88</b>	<b>16.02</b>	<b>13.90</b>	<b>15.08</b>	<b>7.62</b>	<b>6/1/2000</b>
S&P 500			-4.60	-4.60	15.65	18.92	15.99	14.01	14.64	7.50	
Value Added			-0.97	-0.97	-1.30	-0.04	0.03	-0.11	0.44	0.12	
<b>Wellington Small Cap</b>	<b>13,166,106</b>	<b>14.44</b>	<b>-8.33</b>	<b>-8.33</b>	<b>-2.09</b>	<b>15.71</b>	<b>13.36</b>	<b>11.91</b>	<b>14.16</b>	<b>11.80</b>	<b>9/1/1999</b>
Russell 2000 Index			-7.53	-7.53	-5.79	11.74	9.74	8.87	11.04	8.66	
Value Added			-0.80	-0.80	3.70	3.97	3.62	3.04	3.12	3.14	

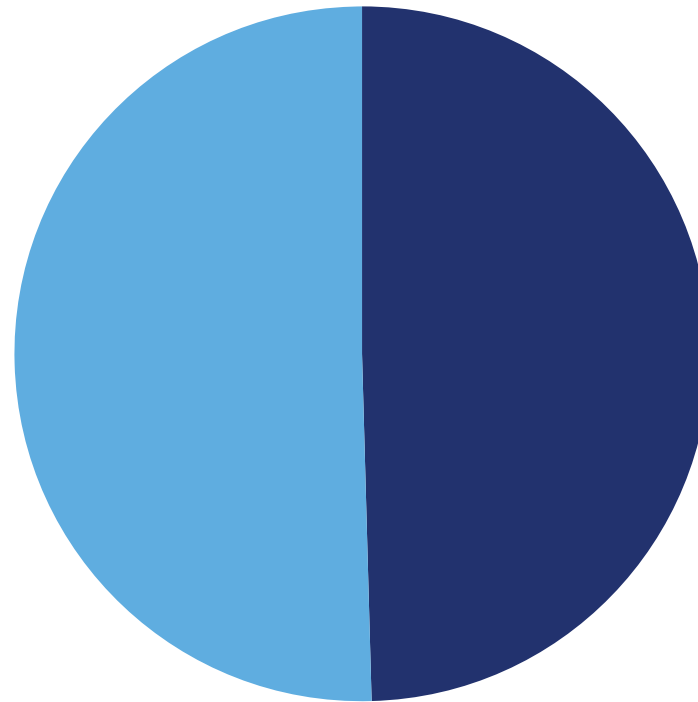
# Non-U.S. Equity

# Asset Allocation By Manager

Non-U.S. Equity

Periods Ended March 31, 2022

Mar-2022 : 82,254,777



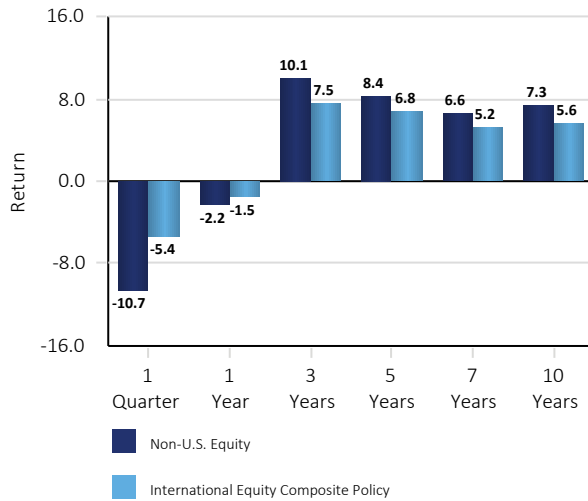
	Market Value \$	Allocation (%)
■ Harding Loevner	40,767,540	49.6
■ Neuberger Berman CIT	41,487,237	50.4

## Performance Summary

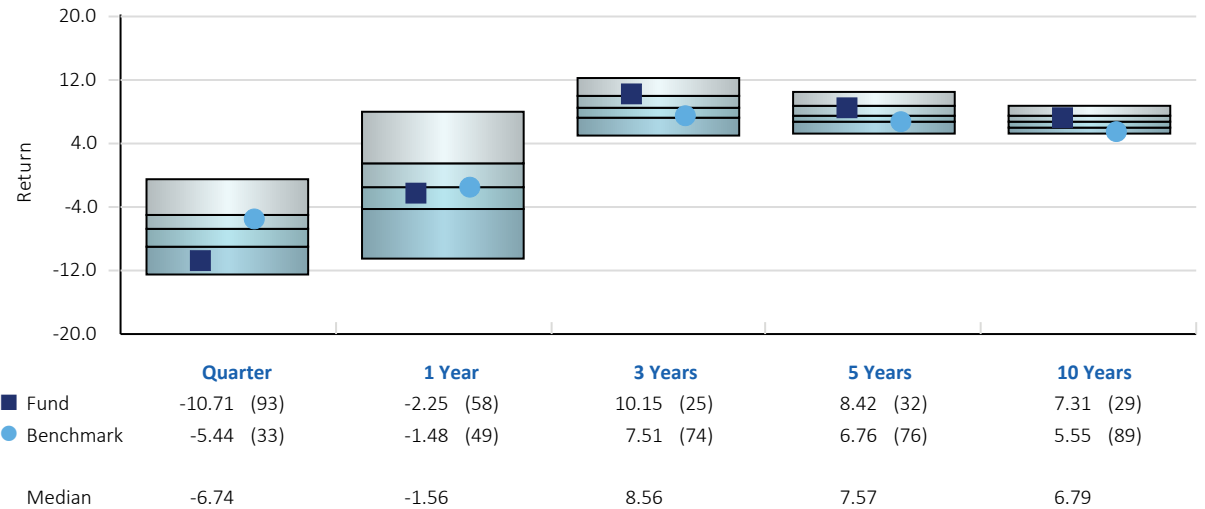
### Non-U.S. Equity

Periods Ended March 31, 2022

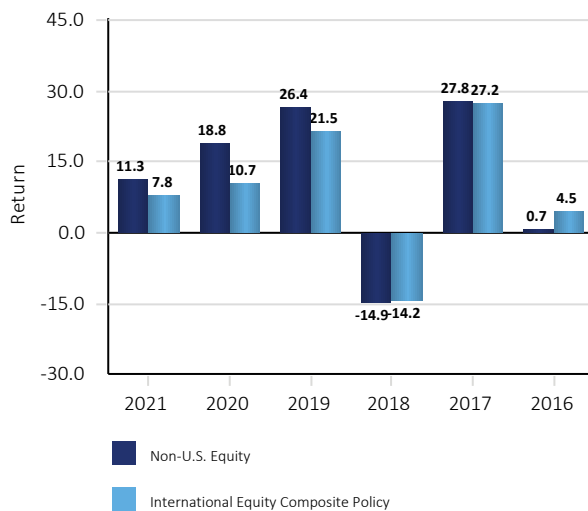
#### Comparative Performance



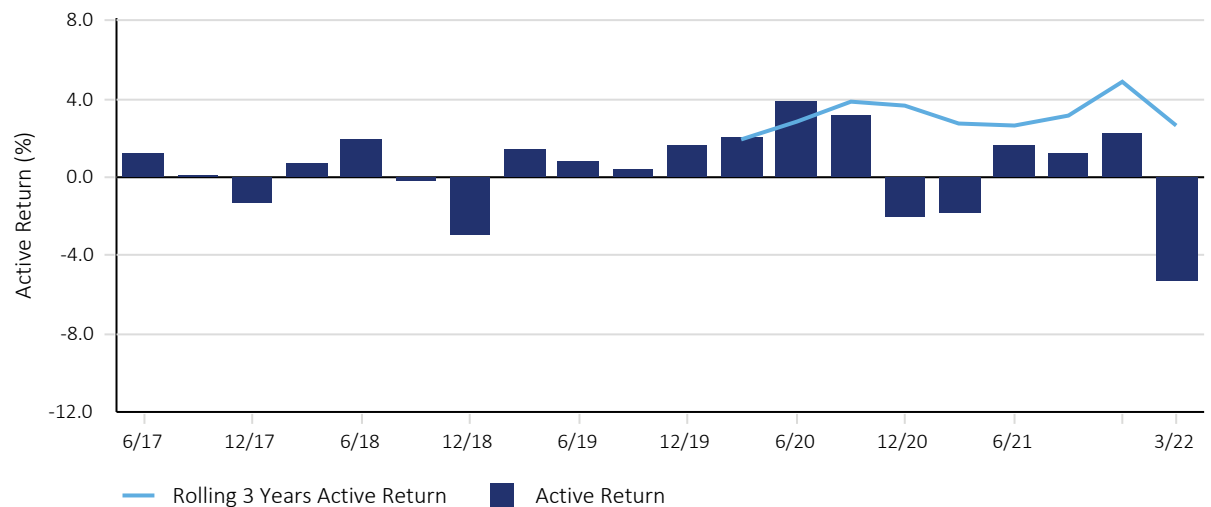
#### Peer Group Analysis: All Master Trust-Intl. Equity Segment



#### Comparative Performance



#### Rolling 3 Years Performance

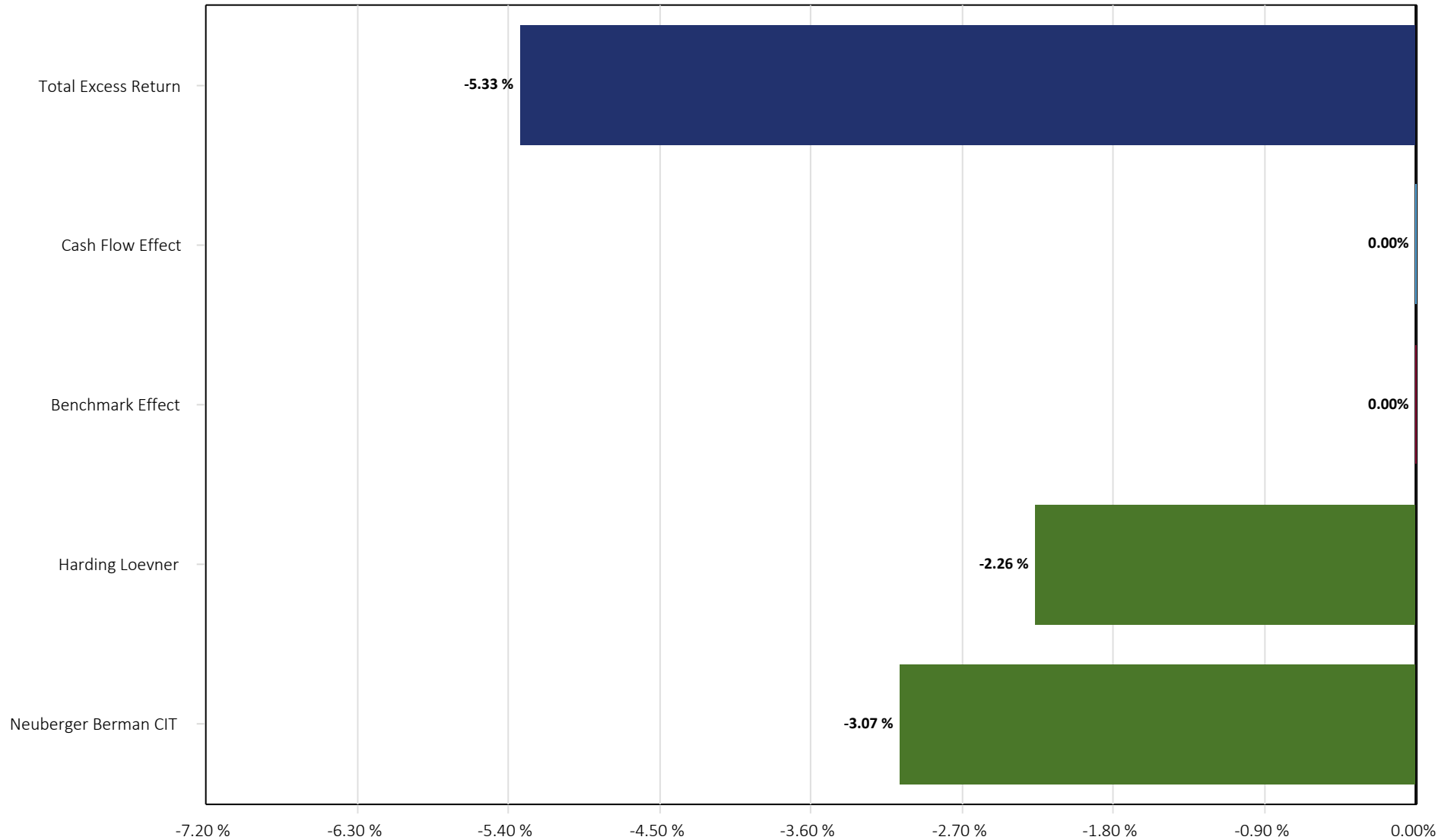


# Asset Class Attribution

Non-U.S. Equity

Periods Ended 1 Quarter Ending March 31, 2022

1 Quarter



# Asset Allocation & Performance

## Non-U.S. Equity

Periods Ended March 31, 2022

	Allocation		Performance (%) net of fees								
	Market Value \$	%	1 Quarter	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>Non-U.S. Equity</b>	<b>82,254,777</b>	<b>100.00</b>	<b>-10.77</b>	<b>-10.77</b>	<b>-2.49</b>	<b>9.88</b>	<b>8.19</b>	<b>6.43</b>	<b>7.17</b>	<b>8.04</b>	<b>1/1/1990</b>
International Equity Composite Policy			-5.44	-5.44	-1.48	7.51	6.76	5.19	5.55	4.72	
Value Added			-5.33	-5.33	-1.01	2.37	1.43	1.24	1.62	3.32	
<b>Harding Loevner</b>	<b>40,767,540</b>	<b>49.56</b>	<b>-10.06</b>	<b>-10.06</b>	<b>-2.37</b>	<b>9.71</b>	<b>7.96</b>	<b>6.69</b>		<b>6.69</b>	<b>4/1/2015</b>
MSCI AC World ex USA (Net)			-5.44	-5.44	-1.48	7.51	6.76	5.19		5.19	
Value Added			-4.62	-4.62	-0.89	2.20	1.20	1.50		1.50	
<b>Neuberger Berman CIT</b>	<b>41,487,237</b>	<b>50.44</b>	<b>-11.45</b>	<b>-11.45</b>	<b>-2.61</b>	<b>10.07</b>				<b>6.72</b>	<b>7/1/2018</b>
MSCI AC World ex USA (Net)			-5.44	-5.44	-1.48	7.51				5.50	
Value Added			-6.01	-6.01	-1.13	2.56				1.22	

# Private Equity



# Private Equity Composite Overview

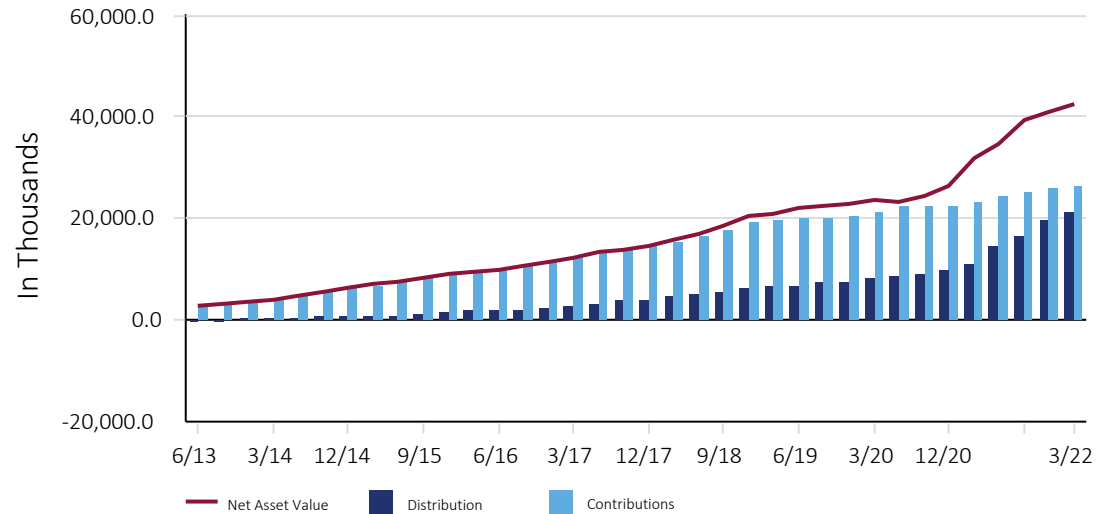
## Private Equity

Periods Ended As of March 31, 2022

### Cash Flow Summary

Capital Committed:	34,500,000
Capital Invested:	7,810,600
Total Contributions:	26,504,424
Remaining Capital Commitment:	8,364,331
Total Distributions:	21,186,375
Market Value:	42,566,148
Inception Date:	5/1/2010
Inception IRR:	20.9
TVPI:	2.4

### Cash Flow Analysis



### Private Equity Portfolio

Partnerships	Capital Committed \$	Total Contribution \$	Total Distribution \$	Market Value \$	IRR (%)	TVPI Multiple (%)
Adams Street 2010 Direct Fund	500,000	480,500	655,508	328,894	13.3	2.0
Adams Street 2010 EM Fund	500,000	449,000	406,933	634,143	13.3	2.3
Adams Street 2010 Non-US Fund	1,500,000	1,350,750	1,737,189	956,515	14.0	2.0
Adams Street 2010 US Fund	2,500,000	2,202,500	3,604,688	2,364,425	18.1	2.7
Adams Street 2013 Global Fund	5,000,000	4,467,500	3,439,997	7,578,597	18.5	2.5
Adams Street 2015 Global	6,500,000	5,453,500	3,122,712	10,805,713	31.6	2.6
Adams Street 2017 Global Fund	6,000,000	4,326,150	987,042	8,153,544	32.5	2.1
Aberdeen Global	5,000,000	4,950,000	6,861,250	6,593,640	18.3	2.7
Adams Street 2019 Global	7,000,000	2,824,524	371,056	5,150,677	101.6	2.0

# Private Equity Composite Overview

## Private Equity

*Periods Ended As of March 31, 2022*

<b>Partnerships</b>	<b>Capital Committed \$</b>	<b>Total Contribution \$</b>	<b>Total Distribution \$</b>	<b>Market Value \$</b>	<b>IRR (%)</b>	<b>TVPI Multiple (%)</b>
Private Equity	34,500,000	26,504,424	21,186,375	42,566,148	20.9	2.4

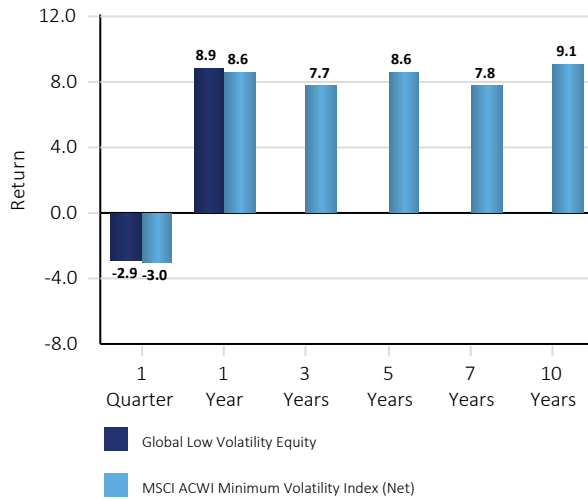
# Global Low Volatility Equity

# Performance Summary

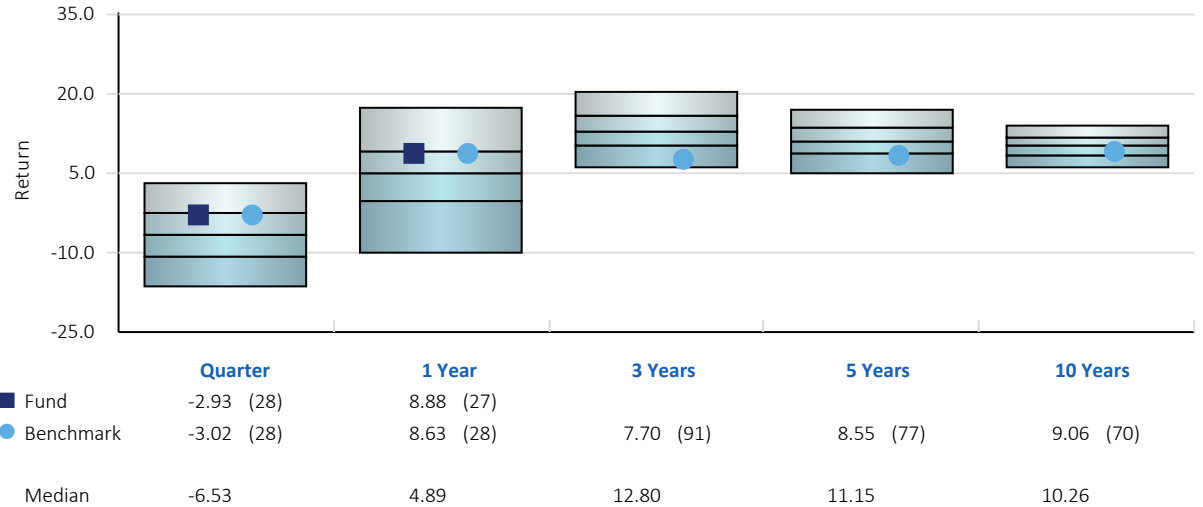
## Global Low Volatility Equity

Periods Ended March 31, 2022

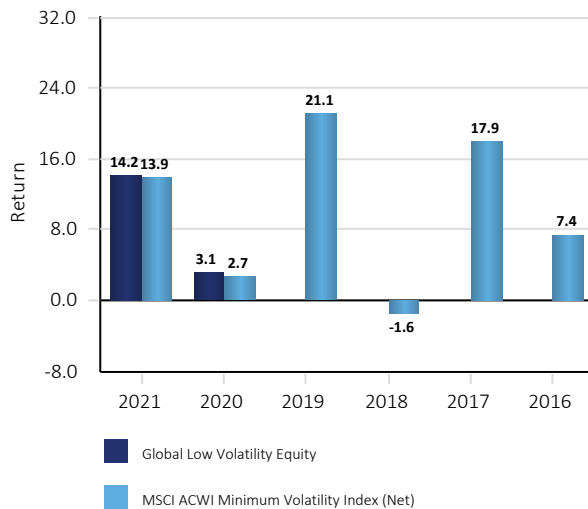
### Comparative Performance



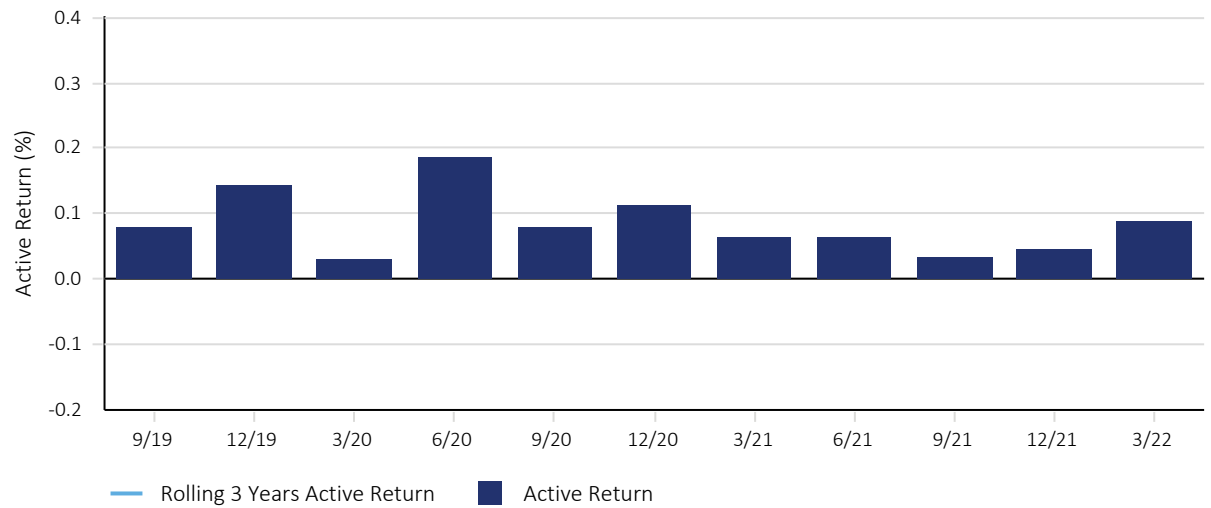
### Peer Group Analysis: IM Global Equity (SA+CF)



### Comparative Performance



### Rolling 3 Years Performance



# Asset Allocation & Performance

## Global Low Volatility Equity

Periods Ended March 31, 2022

	Allocation		Performance (%) net of fees								
	Market Value \$	%	1 Quarter	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>Global Low Volatility Equity</b>	<b>49,478,893</b>	<b>100.00</b>	<b>-2.93</b>	<b>-2.93</b>	<b>8.88</b>					<b>8.61</b>	<b>6/1/2019</b>
MSCI ACWI Minimum Volatility Index (Net)			-3.02	-3.02	8.63					8.25	
Value Added			0.09	0.09	0.25					0.36	
<b>BlackRock MSCI ACWI Min Vol</b>	<b>49,478,893</b>	<b>100.00</b>	<b>-2.93</b>	<b>-2.93</b>	<b>8.88</b>					<b>8.61</b>	<b>6/1/2019</b>
MSCI ACWI Minimum Volatility Index (Net)			-3.02	-3.02	8.63					8.25	
Value Added			0.09	0.09	0.25					0.36	

# Private Credit

# Private Credit Composite Overview

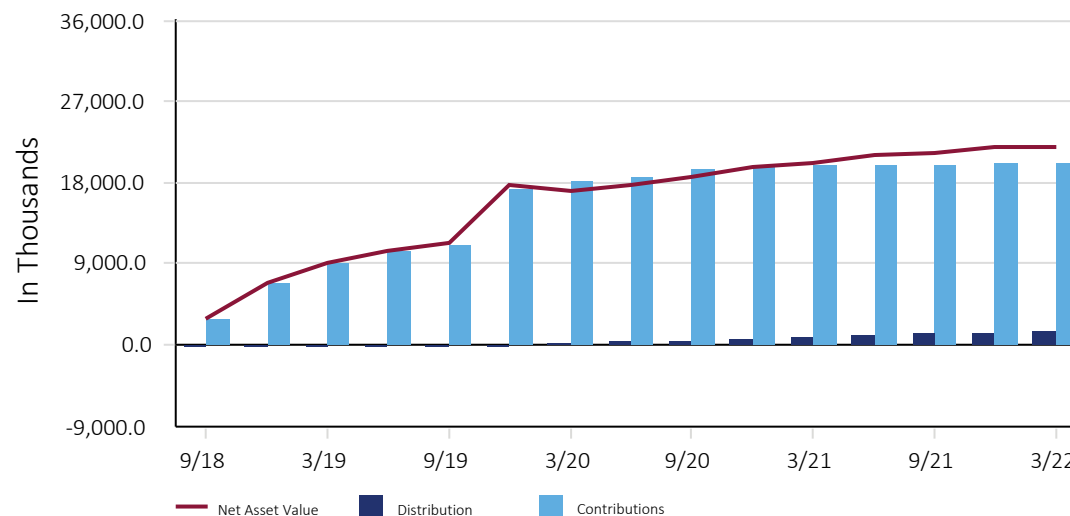
## Private Credit

Periods Ended As of March 31, 2022

### Cash Flow Summary

Capital Committed:	21,000,000
Capital Invested:	2,570,919
Total Contributions:	20,191,428
Remaining Capital Commitment:	808,572
Total Distributions:	1,582,222
Market Value:	22,019,302
Inception Date:	10/1/2018
Inception IRR:	6.1
TVPI:	1.2

### Cash Flow Analysis



### Private Equity Portfolio

Partnerships	Capital Committed \$	Total Contribution \$	Total Distribution \$	Market Value \$	IRR (%)	TVPI Multiple (%)
50 South Capital Private Credit	7,000,000	6,191,428	1,582,222	5,690,849	8.0	1.2
Grosvenor PC	14,000,000	14,000,000	0	16,328,453	5.5	1.2
Private Credit	21,000,000	20,191,428	1,582,222	22,019,302	6.1	1.2

# Core Fixed Income

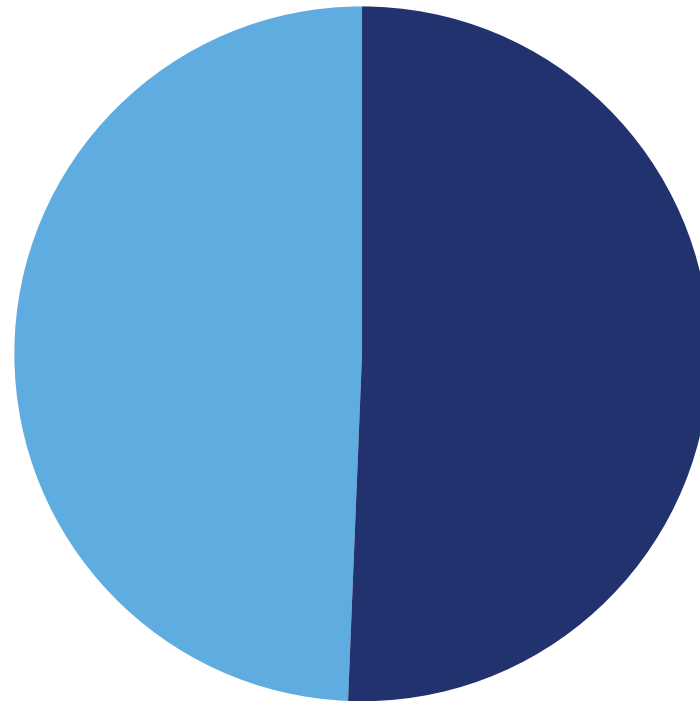


# Asset Allocation By Manager

Core Fixed Income

Periods Ended March 31, 2022

Mar-2022 : 119,016,006



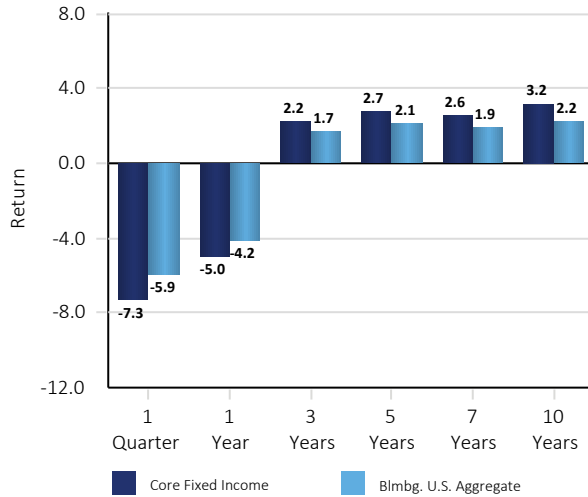
	Market Value \$	Allocation (%)
■ Baird Advisors	60,273,379	50.6
■ Western Asset Management	58,742,627	49.4

## Performance Summary

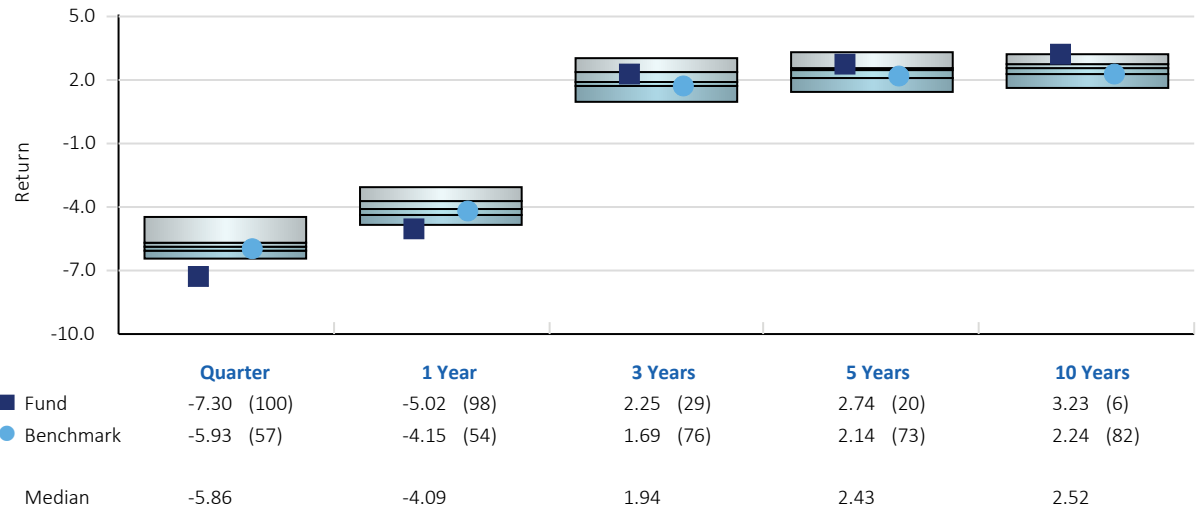
### Core Fixed Income

Periods Ended March 31, 2022

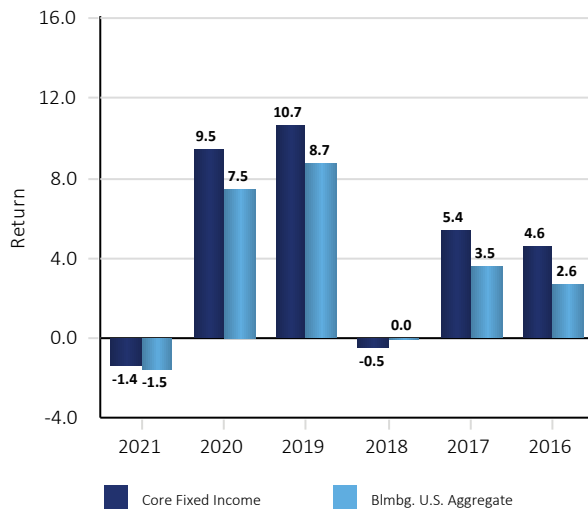
#### Comparative Performance



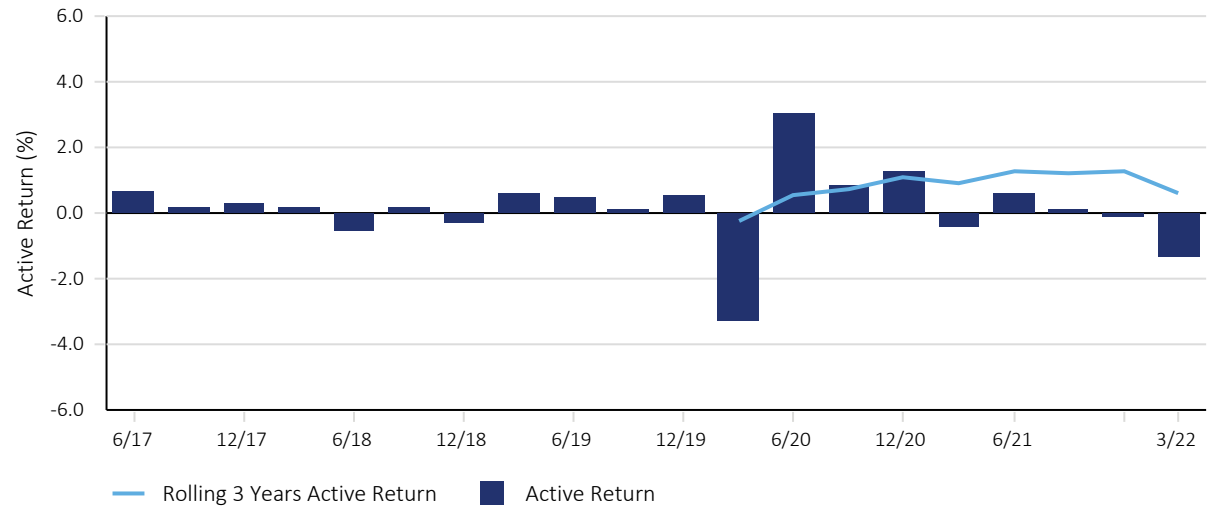
#### Peer Group Analysis: IM U.S. Broad Market Core Fixed Income (SA+CF)



#### Comparative Performance



#### Rolling 3 Years Performance

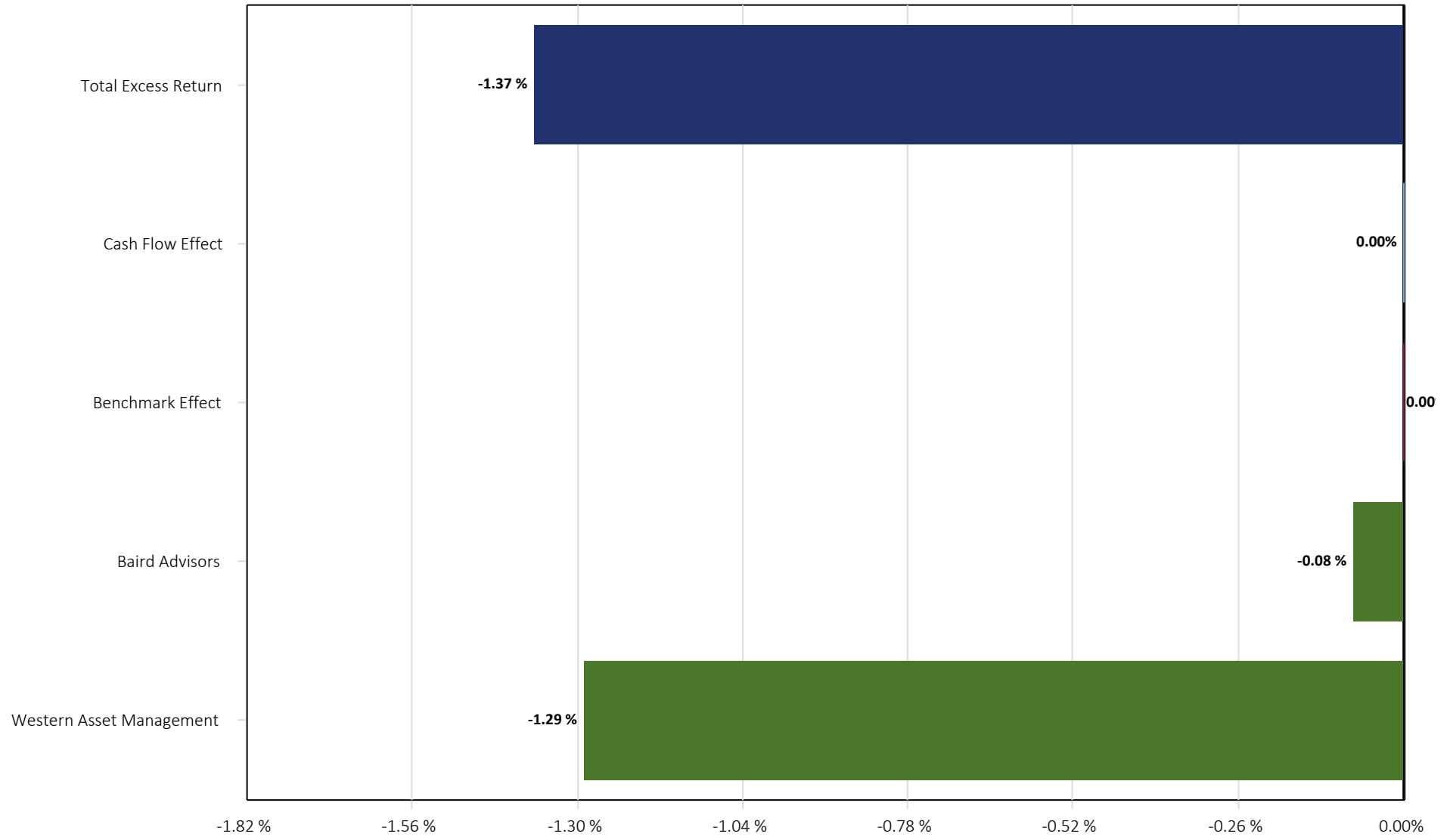


# Asset Class Attribution

Core Fixed Income

Periods Ended 1 Quarter Ending March 31, 2022

1 Quarter



# Asset Allocation & Performance

## Core Fixed Income

Periods Ended March 31, 2022

	Allocation		Performance (%) net of fees								
	Market Value \$	%	1 Quarter	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>Core Fixed Income</b>	<b>119,016,006</b>	<b>100.00</b>	<b>-7.30</b>	<b>-7.30</b>	<b>-5.02</b>	<b>2.25</b>	<b>2.74</b>	<b>2.60</b>	<b>3.23</b>	<b>6.36</b>	<b>10/1/1987</b>
Blmbg. U.S. Aggregate			-5.93	-5.93	-4.15	1.69	2.14	1.87	2.24	5.93	
Value Added			-1.37	-1.37	-0.87	0.56	0.60	0.73	0.99	0.43	
<b>Baird Advisors</b>	<b>60,273,379</b>	<b>50.64</b>	<b>-6.09</b>	<b>-6.09</b>	<b>-4.19</b>	<b>2.06</b>	<b>2.54</b>	<b>2.36</b>	<b>2.87</b>	<b>3.96</b>	<b>12/1/2002</b>
Blmbg. U.S. Aggregate			-5.93	-5.93	-4.15	1.69	2.14	1.87	2.24	3.74	
Value Added			-0.16	-0.16	-0.04	0.37	0.40	0.49	0.63	0.22	
<b>Western Asset Management</b>	<b>58,742,627</b>	<b>49.36</b>	<b>-8.51</b>	<b>-8.51</b>	<b>-5.85</b>	<b>2.40</b>	<b>2.90</b>	<b>2.81</b>	<b>3.55</b>	<b>4.60</b>	<b>1/1/2004</b>
Blmbg. U.S. Aggregate			-5.93	-5.93	-4.15	1.69	2.14	1.87	2.24	3.62	
Value Added			-2.58	-2.58	-1.70	0.71	0.76	0.94	1.31	0.98	

# TIPS

# Asset Allocation & Performance

TIPS

Periods Ended March 31, 2022

	Allocation		Performance (%) net of fees								
	Market Value \$	%	1 Quarter	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>TIPS</b>	<b>23,243,665</b>	<b>100.00</b>	<b>-3.23</b>	<b>-3.23</b>	<b>3.60</b>	<b>5.88</b>	<b>4.12</b>			<b>3.35</b>	<b>5/1/2015</b>
Blmbg. U.S. TIPS			-3.02	-3.02	4.29	6.22	4.43			3.52	
Value Added			-0.21	-0.21	-0.69	-0.34	-0.31			-0.17	
<b>Brown Brothers Harriman</b>	<b>23,243,665</b>	<b>100.00</b>	<b>-3.23</b>	<b>-3.23</b>	<b>3.60</b>	<b>5.88</b>	<b>4.12</b>			<b>3.35</b>	<b>5/1/2015</b>
Blmbg. U.S. TIPS			-3.02	-3.02	4.29	6.22	4.43			3.52	
Value Added			-0.21	-0.21	-0.69	-0.34	-0.31			-0.17	

# Real Estate

# Asset Allocation & Performance

## Real Estate

Periods Ended March 31, 2022

	Allocation		Performance (%) net of fees								
	Market Value \$	%	1 Quarter	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>Real Estate</b>	<b>27,315,610</b>	<b>100.00</b>	<b>-3.05</b>	<b>-3.05</b>	<b>27.06</b>	<b>11.39</b>	<b>9.76</b>	<b>6.37</b>	<b>7.79</b>	<b>9.96</b>	<b>6/1/2009</b>
Real Estate Policy Index			-3.71	-3.71	27.72	8.82	8.54	6.23	7.93	10.30	
Value Added			0.66	0.66	-0.66	2.57	1.22	0.14	-0.14	-0.34	
<b>Centersquare</b>	<b>27,315,610</b>	<b>100.00</b>	<b>-3.05</b>	<b>-3.05</b>	<b>27.06</b>					<b>11.71</b>	<b>10/1/2019</b>
Dow Jones U.S. Select REIT			-3.71	-3.71	27.72					8.71	
Value Added			0.66	0.66	-0.66					3.00	



# Commodities

# Asset Allocation & Performance

## Commodities

Periods Ended March 31, 2022

	Allocation		Performance (%) net of fees								
	Market Value \$	%	1 Quarter	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>Commodities</b>	32,532,922	100.00	22.52	22.52	42.43	18.95	11.52	6.32		0.66	2/1/2013
Bloomberg Commodity Index Total Return			25.55	25.55	49.25	16.12	9.00	4.33		-0.81	
Value Added			-3.03	-3.03	-6.82	2.83	2.52	1.99		1.47	
<b>Wellington Commodities</b>	32,532,922	100.00	22.52	22.52	42.43	18.95	11.52	6.32		0.66	2/1/2013
Bloomberg Commodity Index Total Return			25.55	25.55	49.25	16.12	9.00	4.33		-0.81	
Value Added			-3.03	-3.03	-6.82	2.83	2.52	1.99		1.47	

# Midstream Energy

# Asset Allocation & Performance

## Midstream Energy Composite

Periods Ended March 31, 2022

	Allocation		Performance (%) net of fees								
	Market Value \$	%	1 Quarter	FYTD	1 Year	3 Years	5 Years	7 Years	10 Years	Since Inception	Inception Date
<b>Midstream Energy Composite</b>	<b>28,576,977</b>	<b>100.00</b>	<b>24.33</b>	<b>24.33</b>	<b>47.91</b>	<b>6.65</b>	<b>2.68</b>	<b>0.01</b>		<b>-0.13</b>	<b>3/1/2015</b>
Midstream Energy Policy Index			23.95	23.95	41.93	0.41	-2.66	-6.19		-6.63	
Value Added			0.38	0.38	5.98	6.24	5.34	6.20		6.50	
<b>Harvest MLP</b>	<b>28,576,977</b>	<b>100.00</b>	<b>24.33</b>	<b>24.33</b>	<b>47.91</b>	<b>6.65</b>	<b>2.68</b>	<b>0.01</b>		<b>-0.13</b>	<b>3/1/2015</b>
Midstream Energy Policy Index			23.95	23.95	41.93	0.41	-2.66	-6.19		-6.63	
Value Added			0.38	0.38	5.98	6.24	5.34	6.20		6.50	

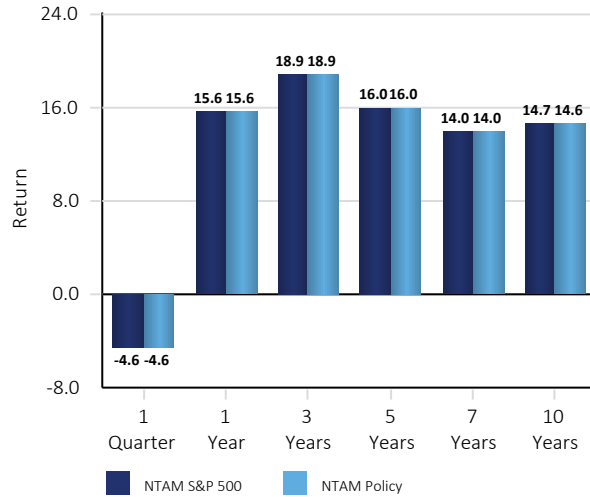
# Appendix

# Performance Summary

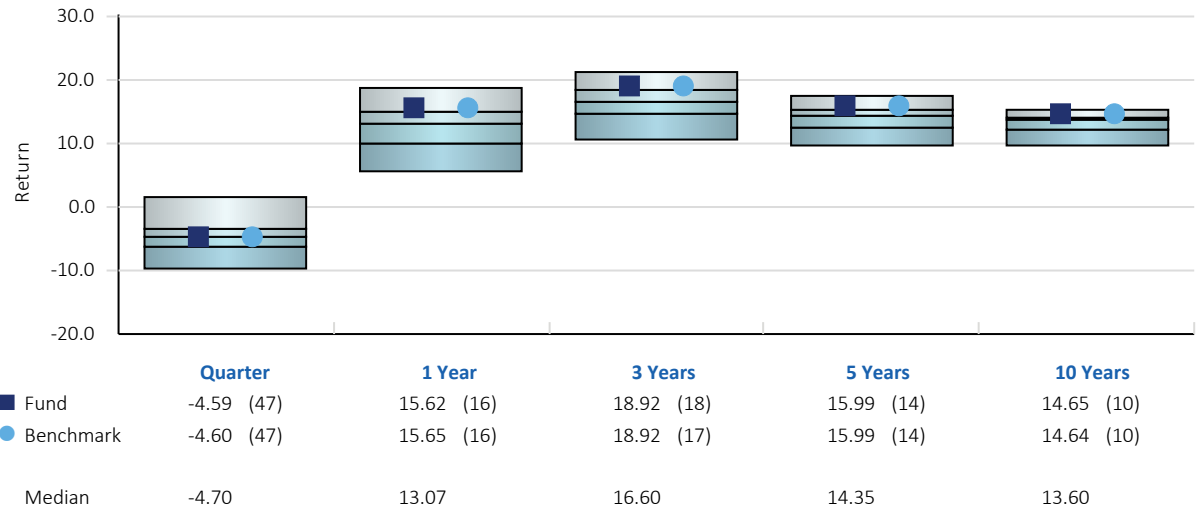
NTAM S&P 500

Periods Ended March 31, 2022

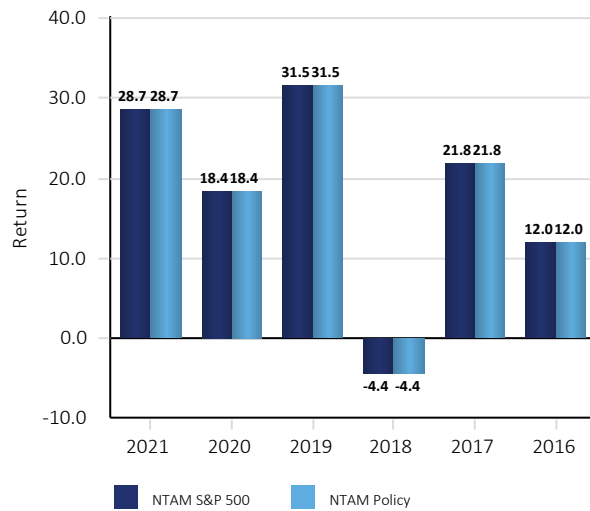
## Comparative Performance



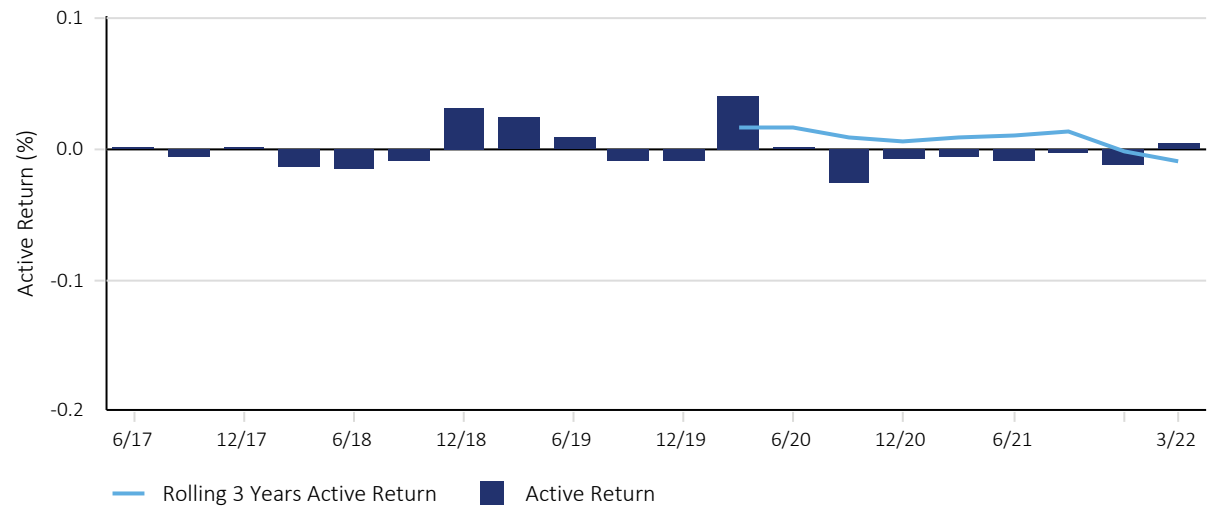
## Peer Group Analysis: IM U.S. Large Cap Core Equity (SA+CF)



## Comparative Performance



## Rolling 3 Years Performance

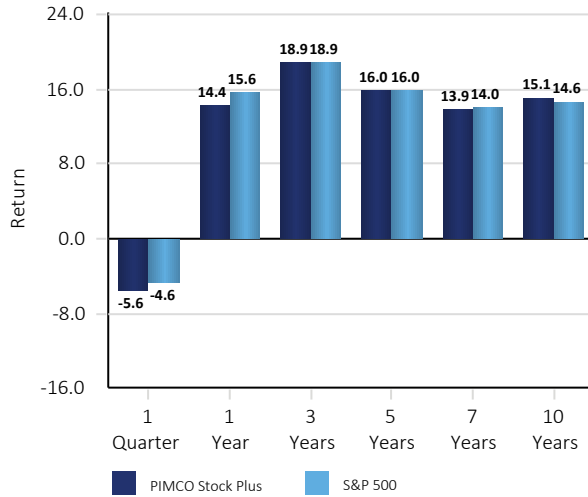


## Performance Summary

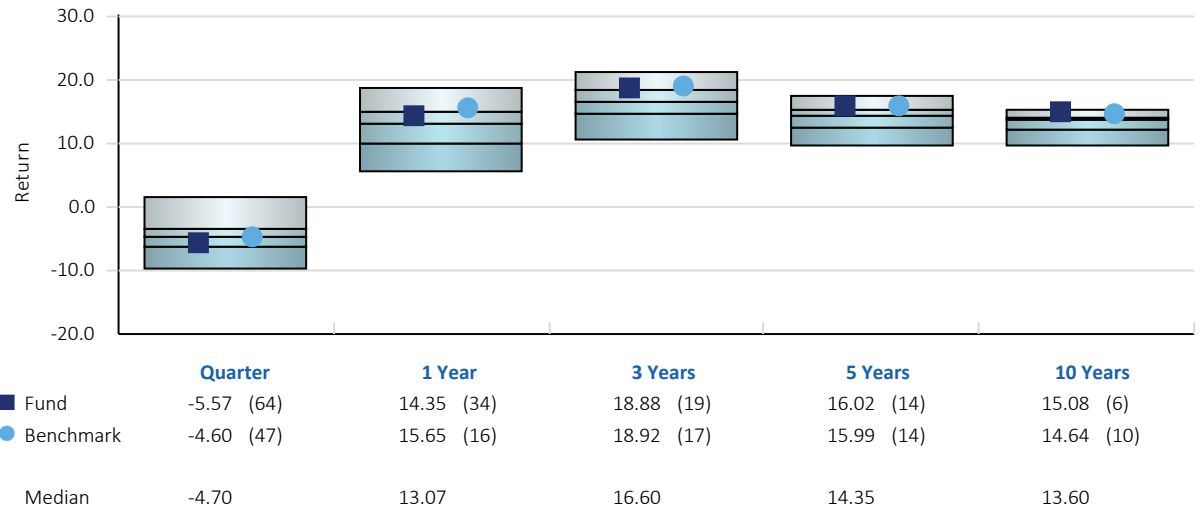
PIMCO Stock Plus

Periods Ended March 31, 2022

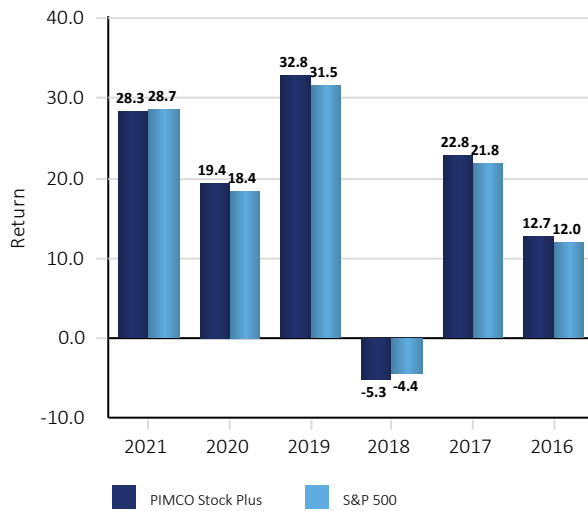
### Comparative Performance



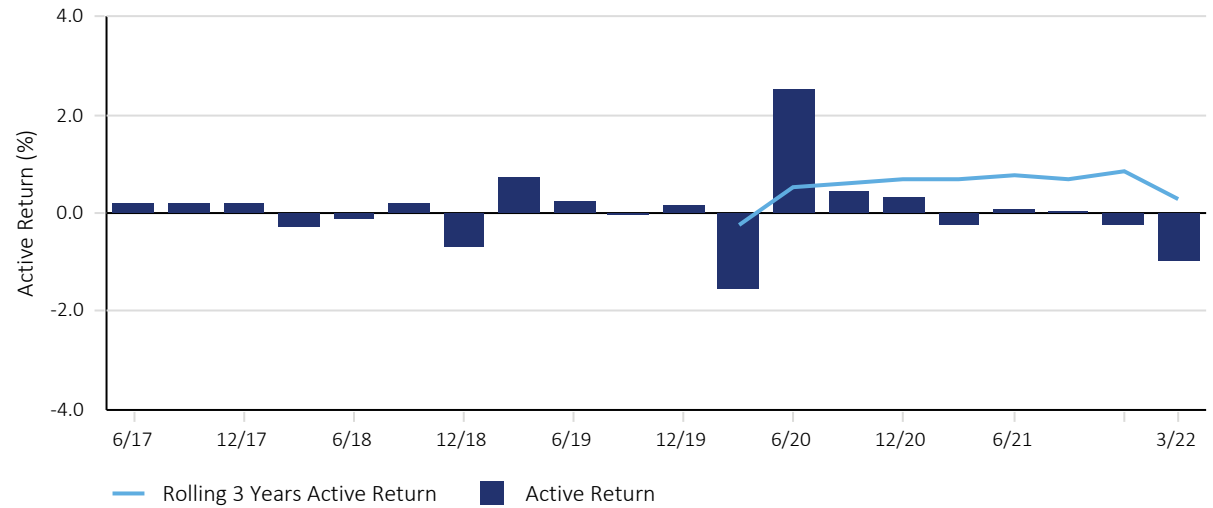
### Peer Group Analysis: IM U.S. Large Cap Core Equity (SA+CF)



### Comparative Performance



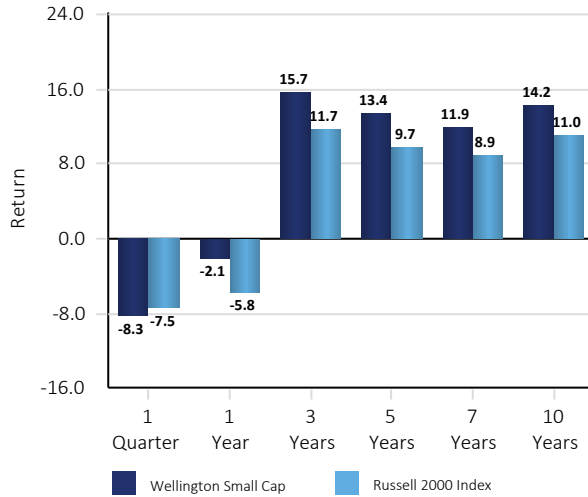
### Rolling 3 Years Performance



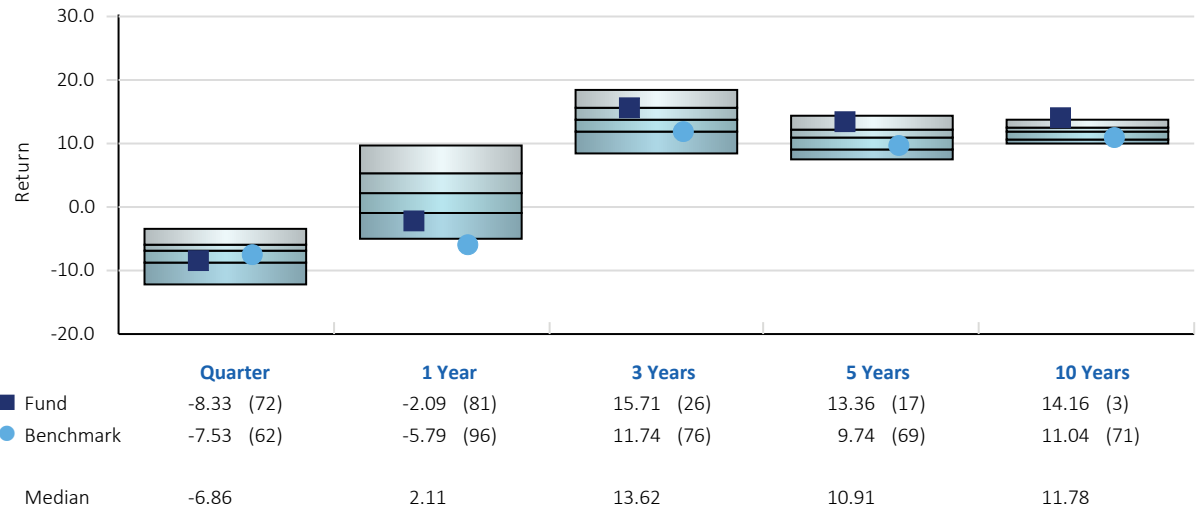
# Performance Summary

Wellington Small Cap  
Periods Ended March 31, 2022

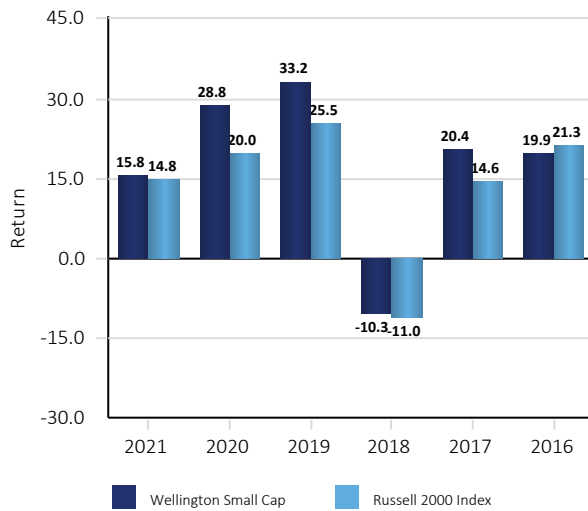
## Comparative Performance



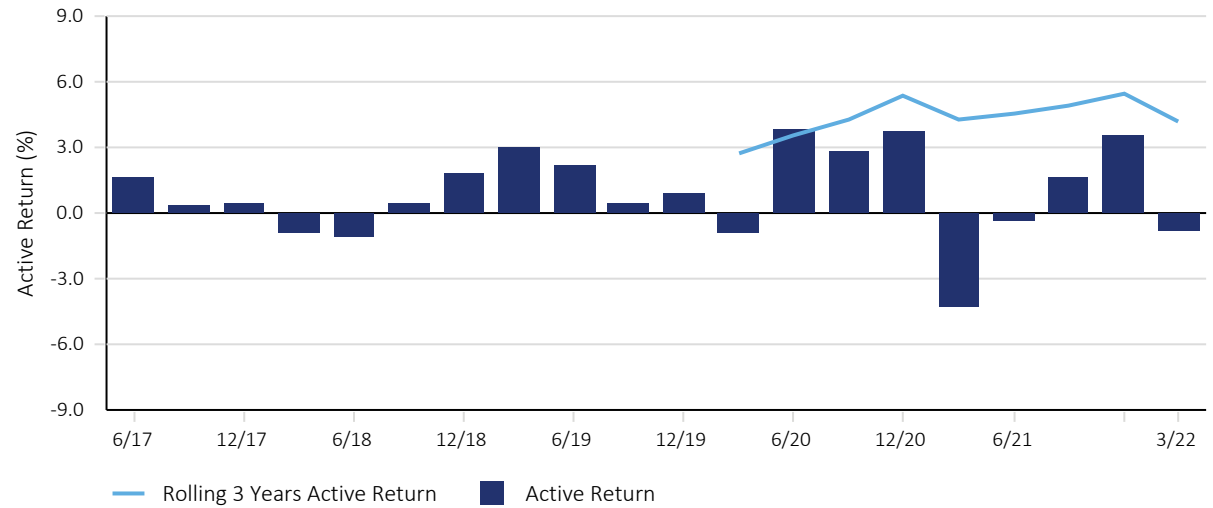
## Peer Group Analysis: IM U.S. Small Cap Core Equity (SA+CF)



## Comparative Performance



## Rolling 3 Years Performance



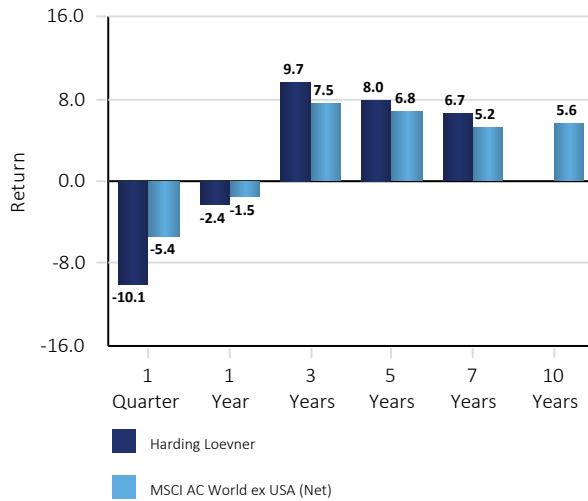


# Performance Summary

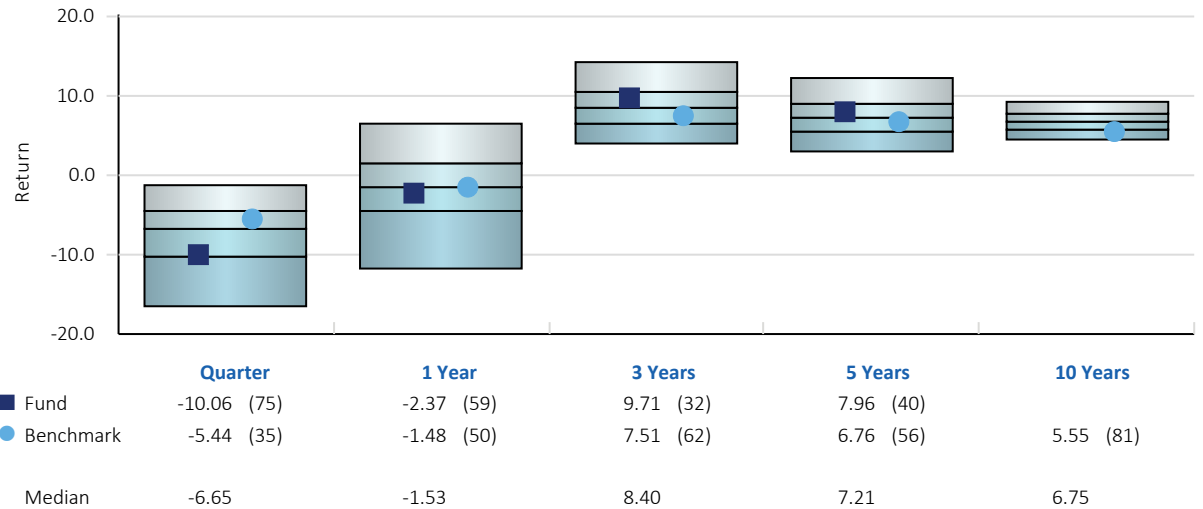
Harding Loevner

Periods Ended March 31, 2022

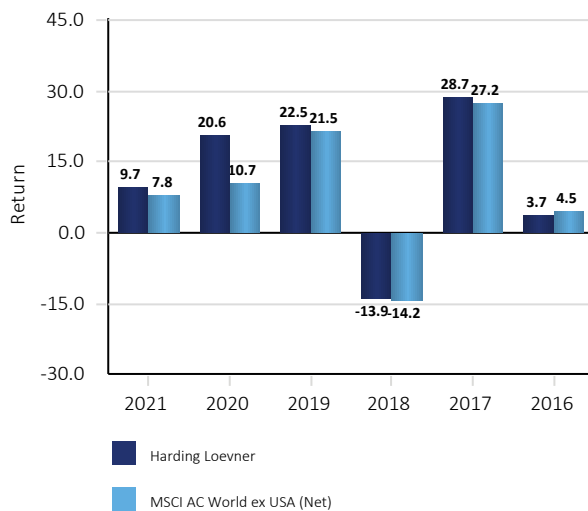
## Comparative Performance



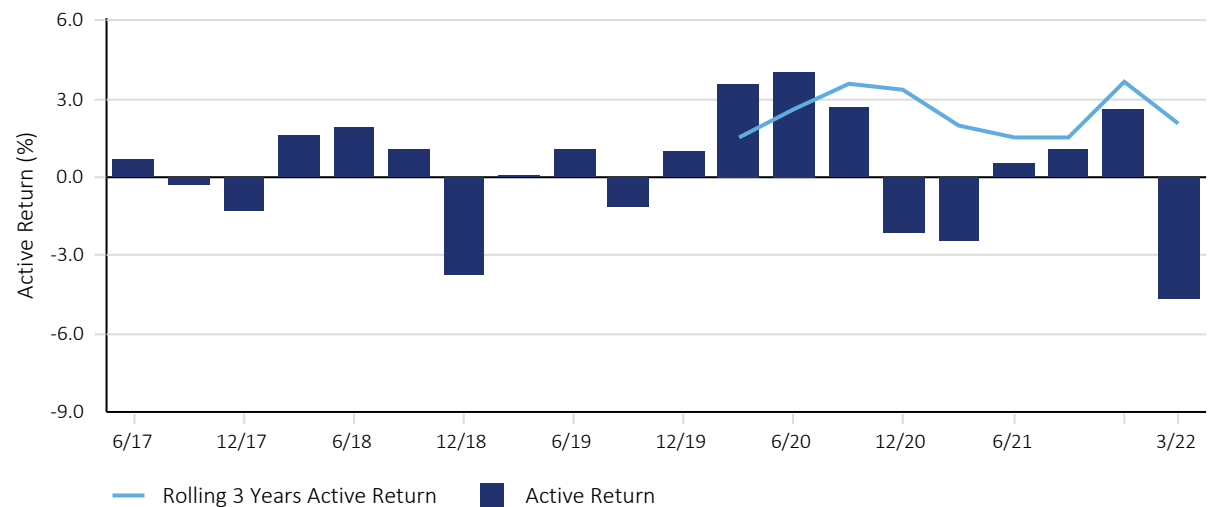
## Peer Group Analysis: IM International Large Cap Equity (SA+CF)



## Comparative Performance



## Rolling 3 Years Performance

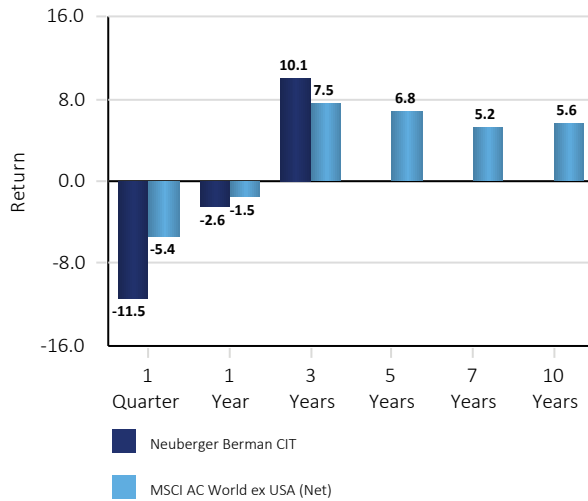


# Performance Summary

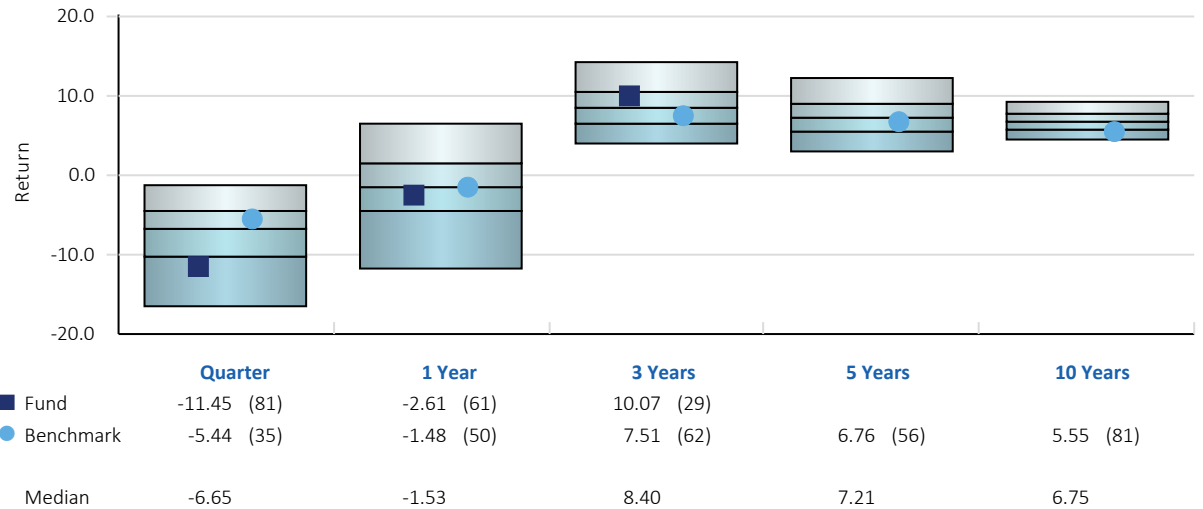
Neuberger Berman CIT

Periods Ended March 31, 2022

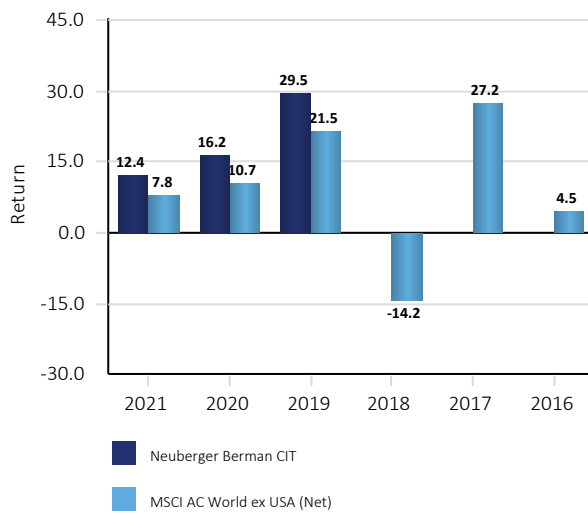
## Comparative Performance



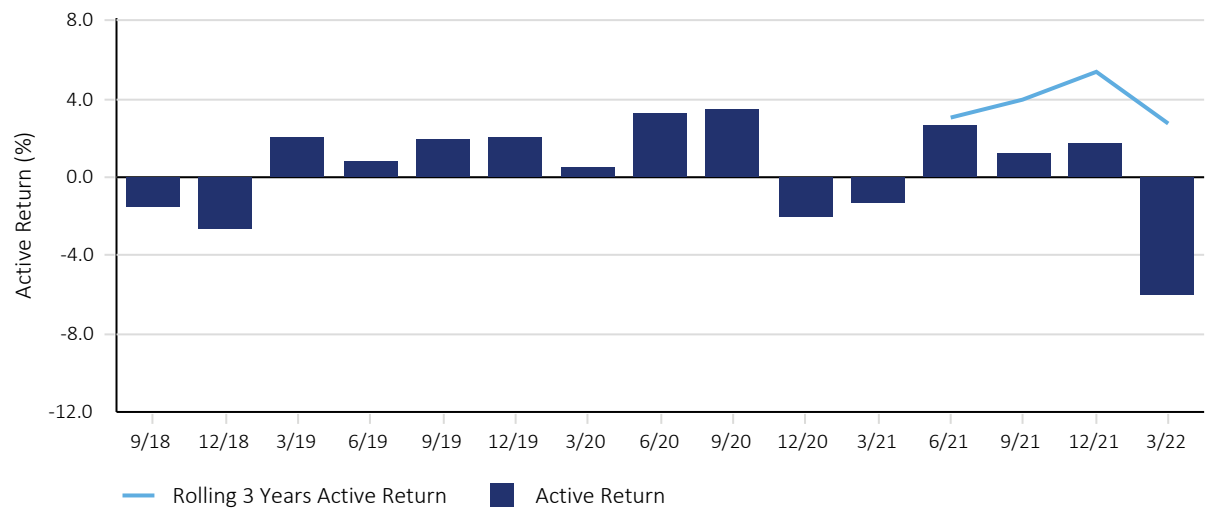
## Peer Group Analysis: IM International Large Cap Equity (SA+CF)



## Comparative Performance



## Rolling 3 Years Performance

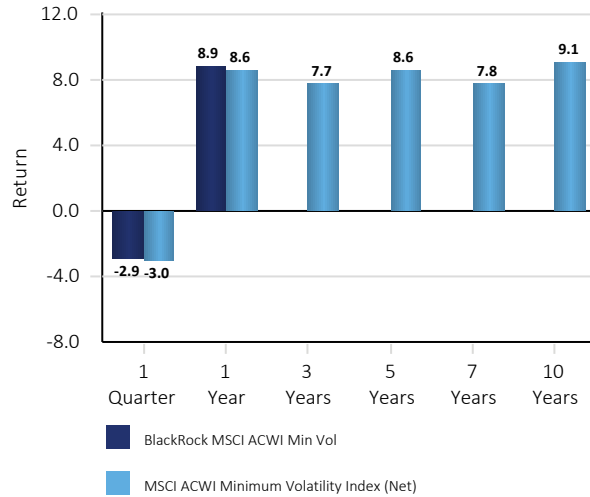


# Performance Summary

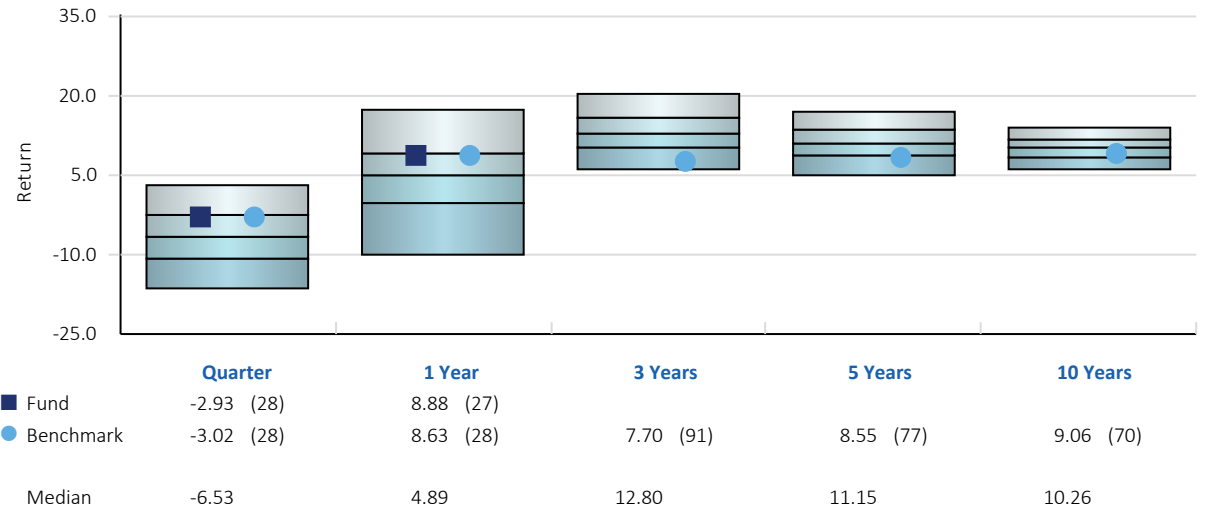
BlackRock MSCI ACWI Min Vol

Periods Ended March 31, 2022

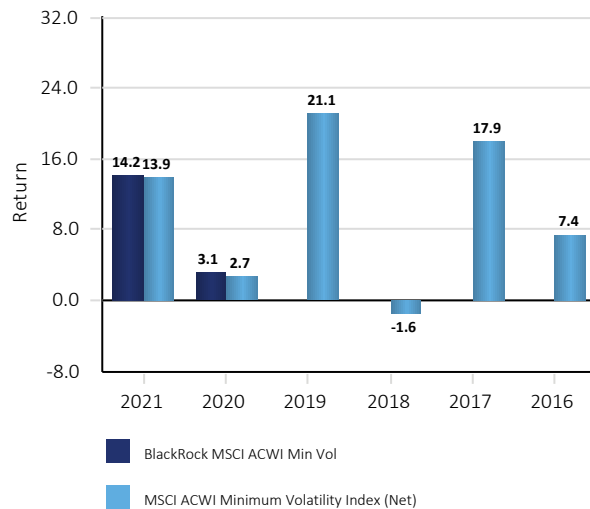
## Comparative Performance



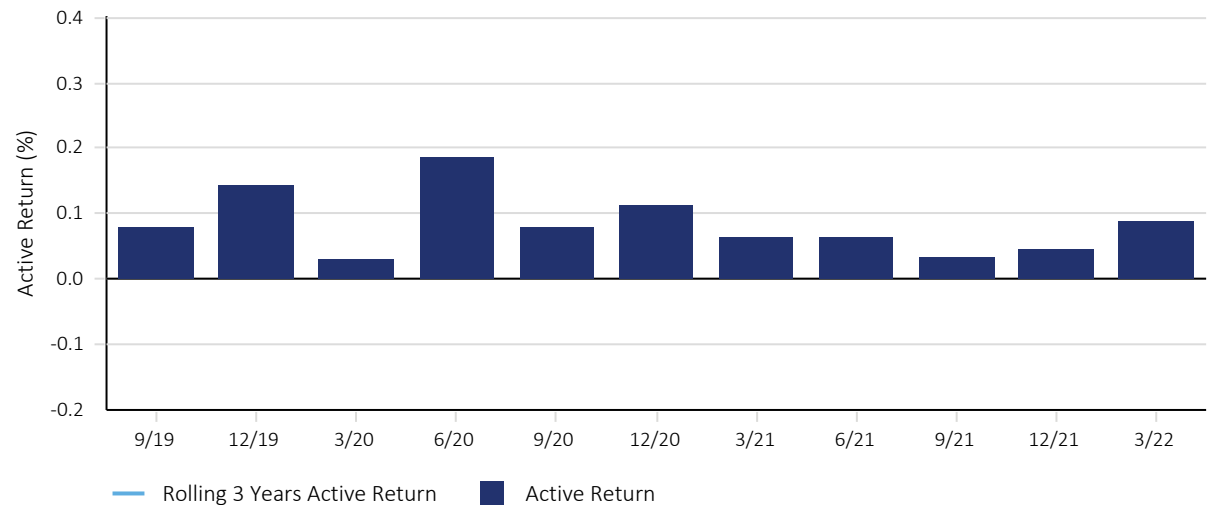
## Peer Group Analysis: IM Global Equity (SA+CF)



## Comparative Performance



## Rolling 3 Years Performance

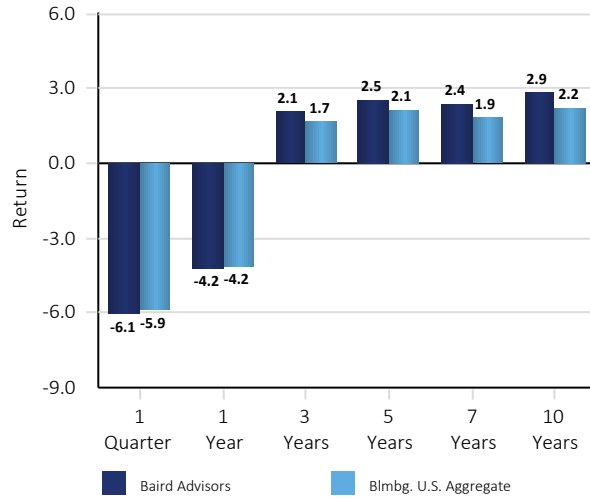


# Performance Summary

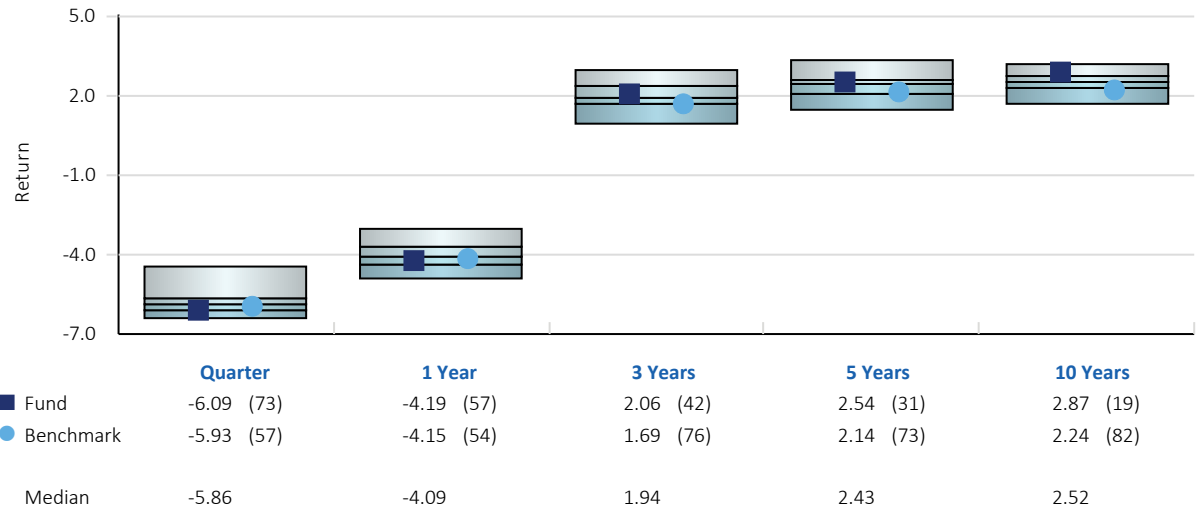
Baird Advisors

Periods Ended March 31, 2022

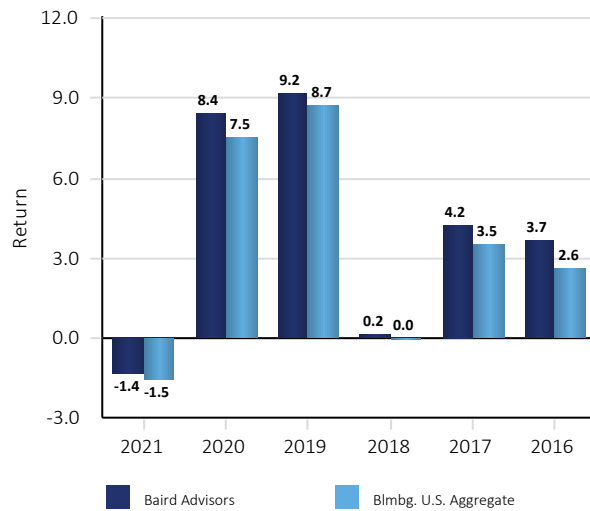
## Comparative Performance



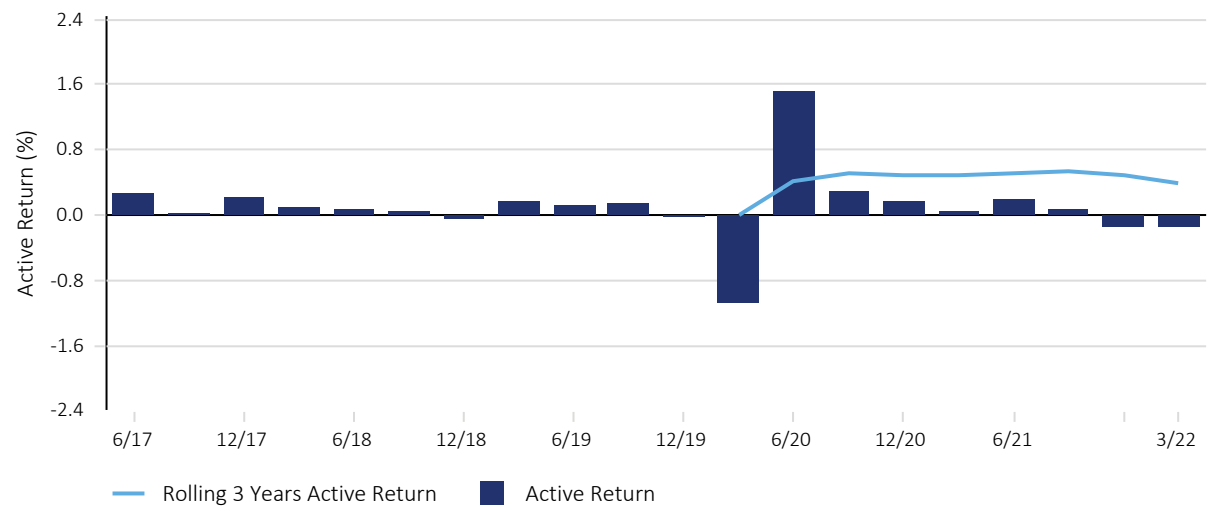
## Peer Group Analysis: IM U.S. Broad Market Core Fixed Income (SA+CF)



## Comparative Performance



## Rolling 3 Years Performance

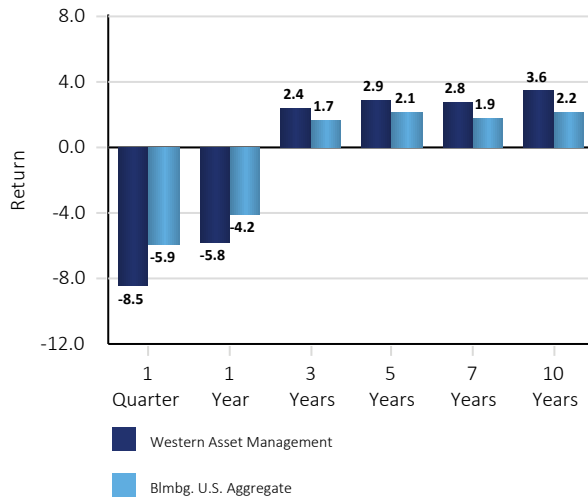


# Performance Summary

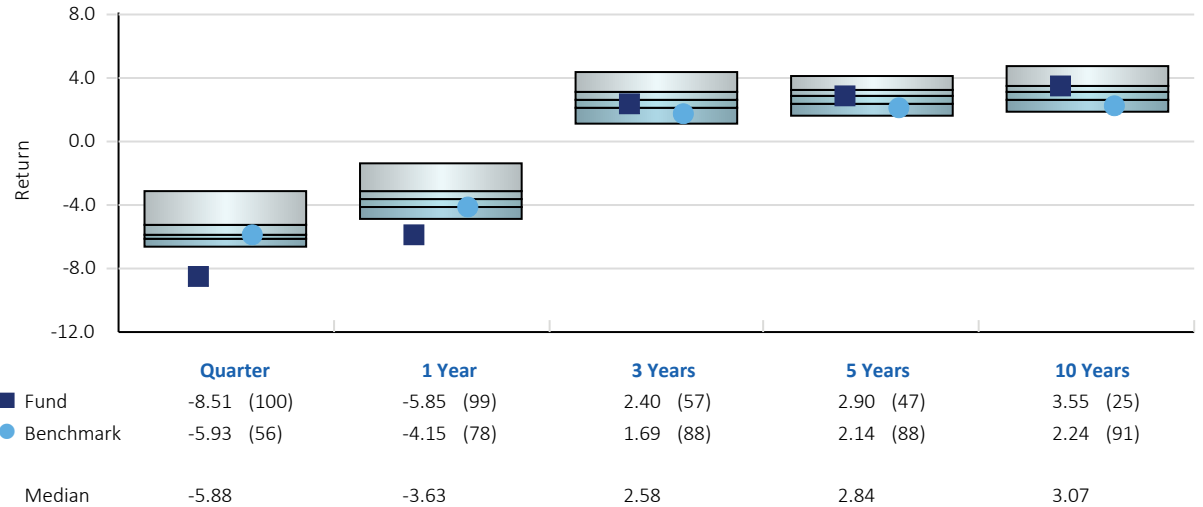
Western Asset Management

Periods Ended March 31, 2022

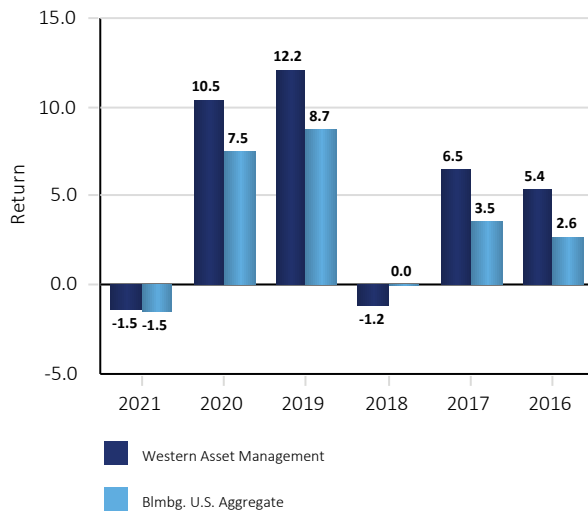
## Comparative Performance



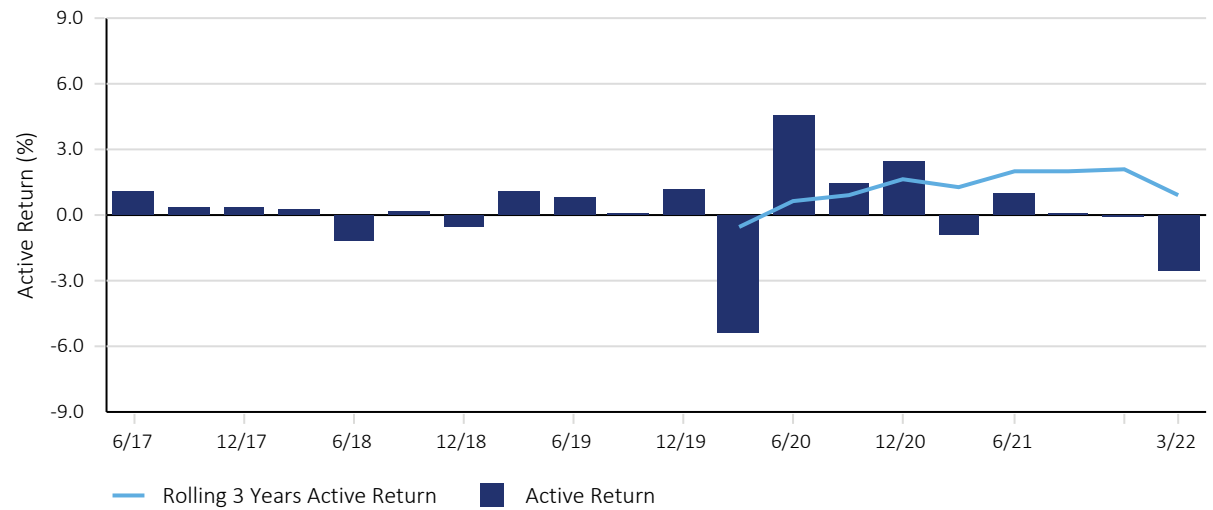
## Peer Group Analysis: IM U.S. Broad Market Core+ Fixed Income (SA+CF)



## Comparative Performance



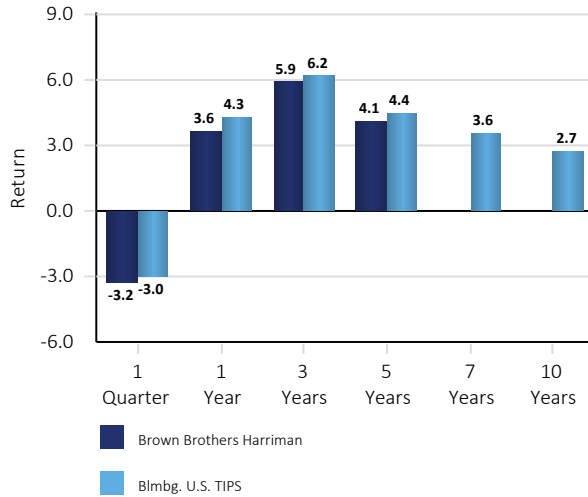
## Rolling 3 Years Performance



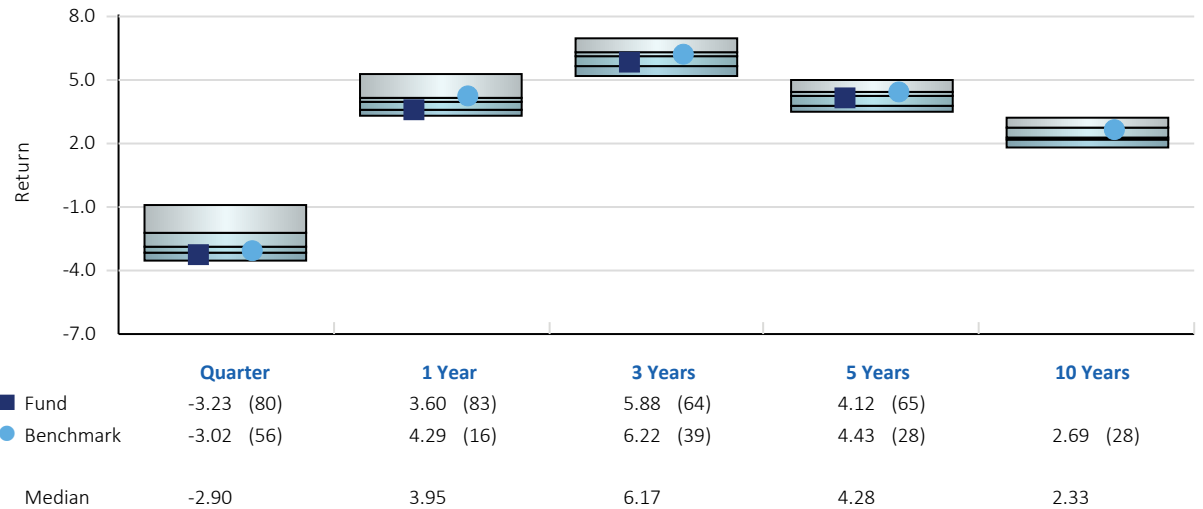
# Performance Summary

Brown Brothers Harriman  
Periods Ended March 31, 2022

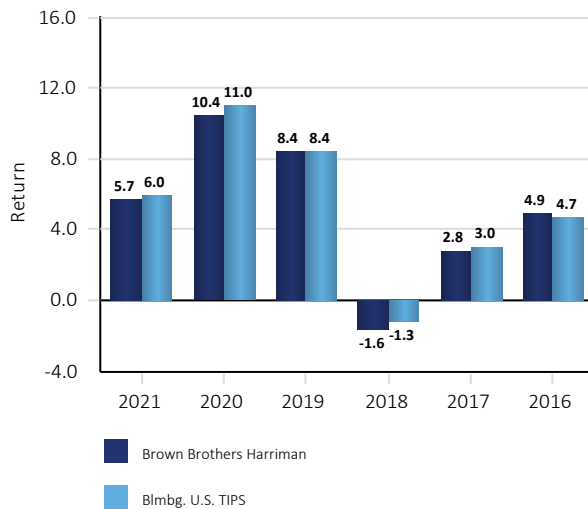
## Comparative Performance



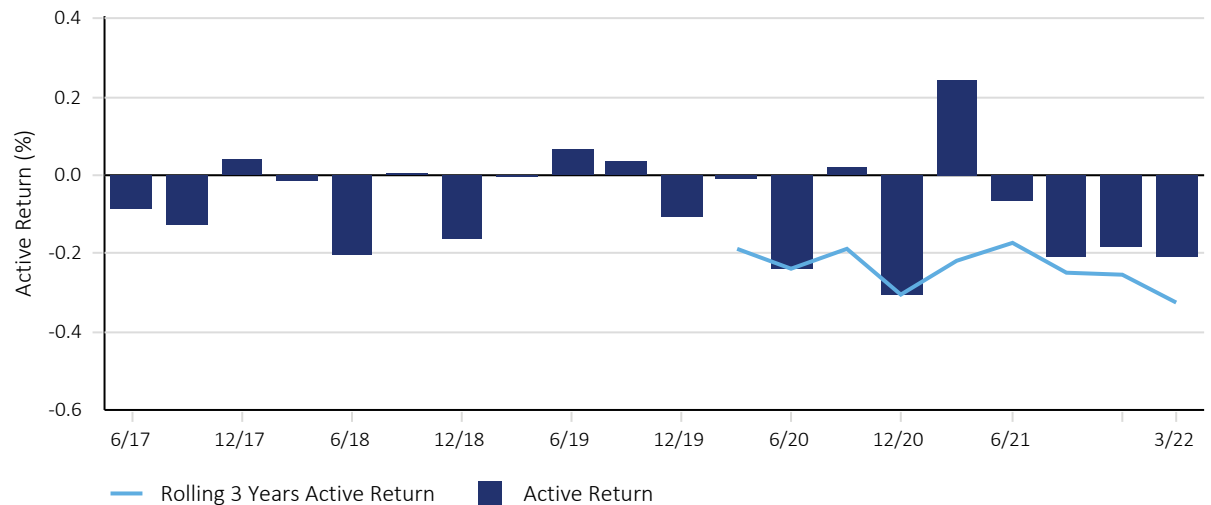
## Peer Group Analysis: IM U.S. TIPS (SA+CF)



## Comparative Performance



## Rolling 3 Years Performance

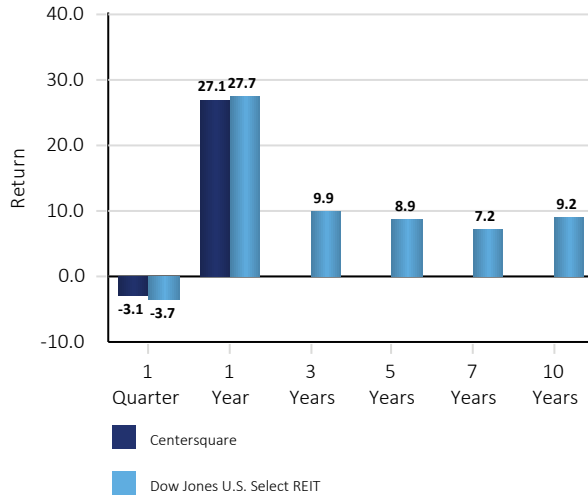


# Performance Summary

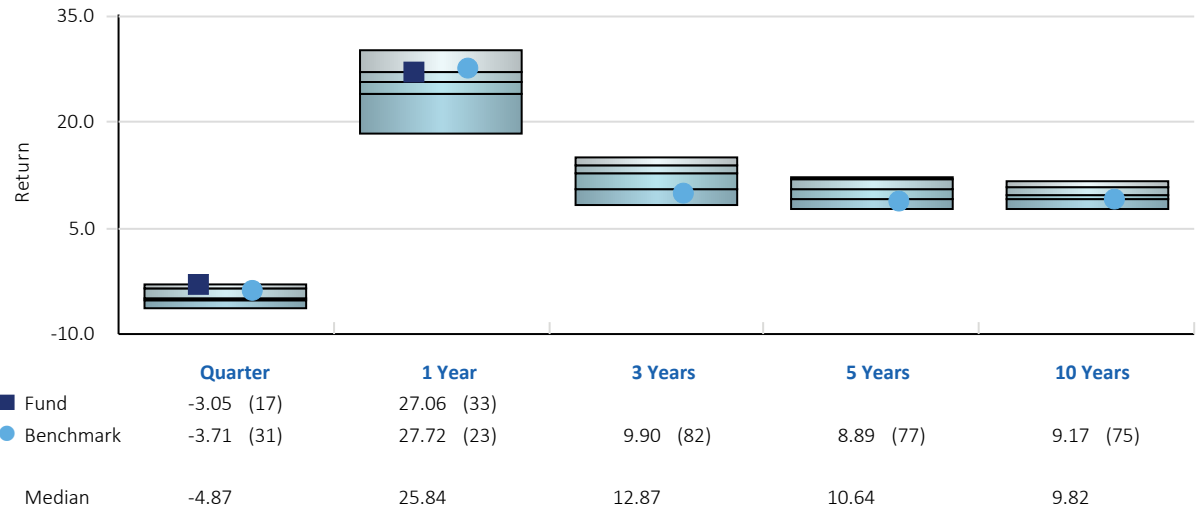
## Centersquare

Periods Ended March 31, 2022

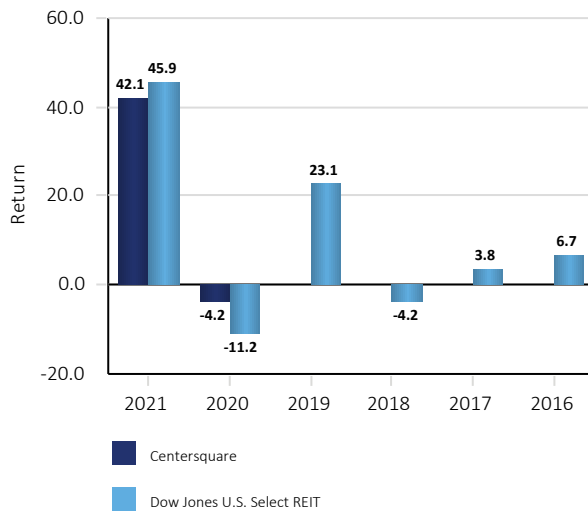
### Comparative Performance



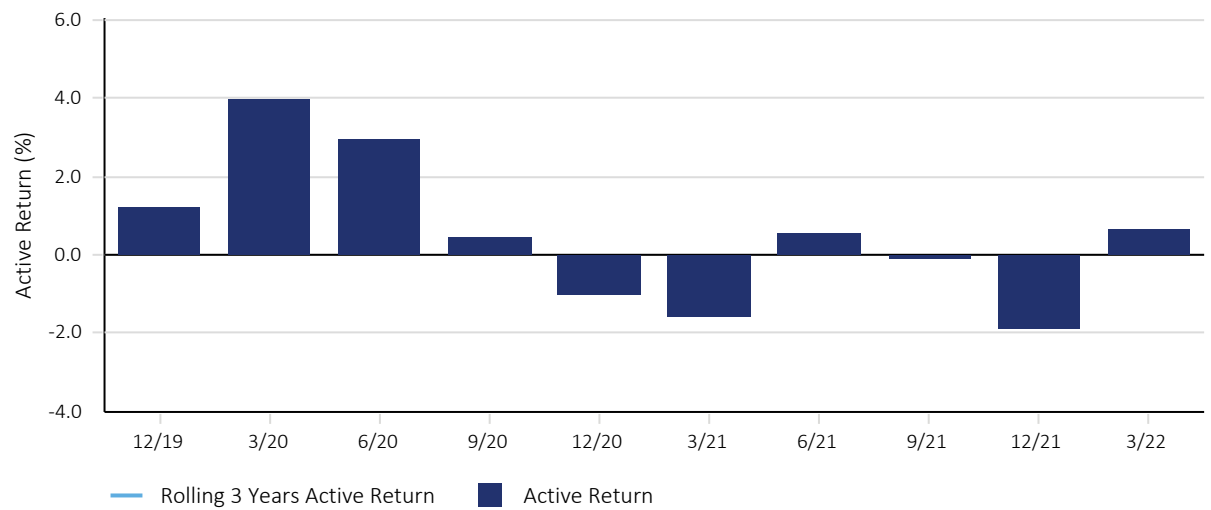
### Peer Group Analysis: IM U.S. REIT (SA+CF)



### Comparative Performance



### Rolling 3 Years Performance



# Performance Summary

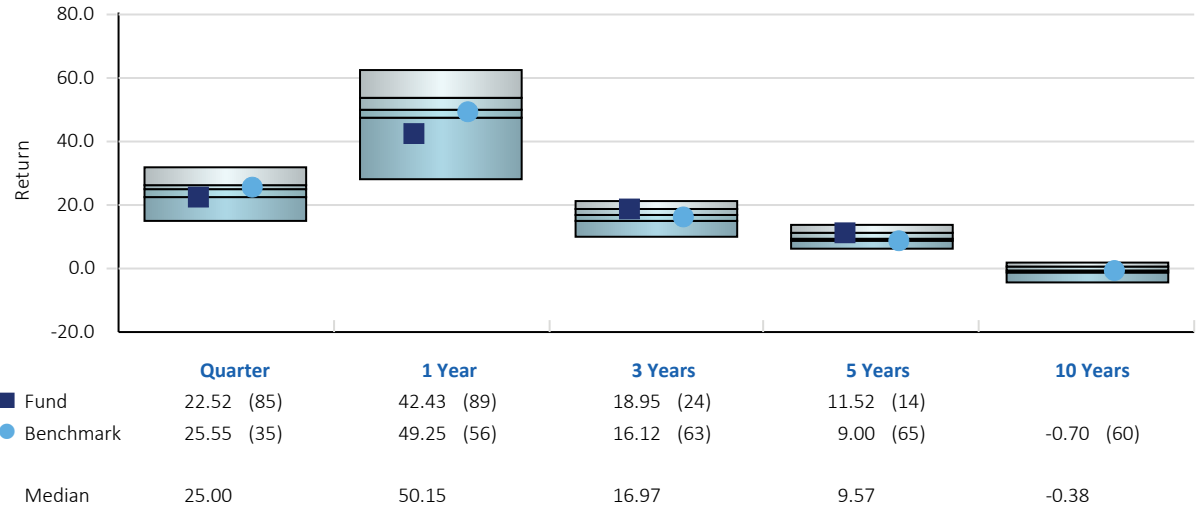
## Wellington Commodities

Periods Ended March 31, 2022

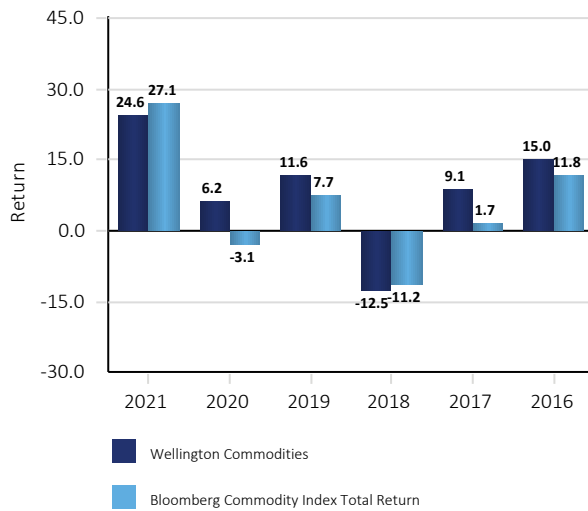
### Comparative Performance



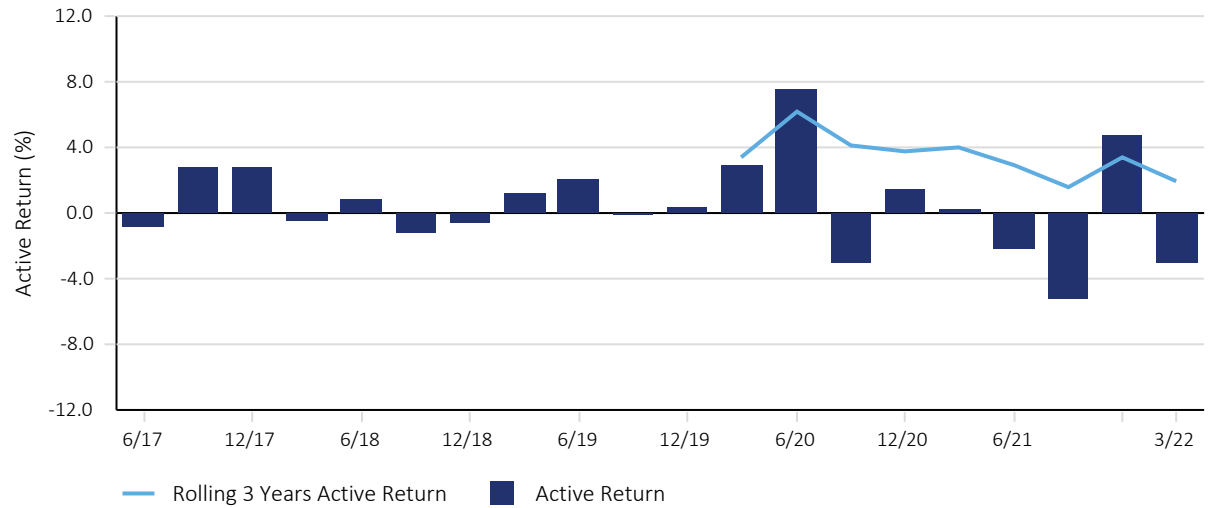
### Peer Group Analysis: Commodities Broad Basket



### Comparative Performance



### Rolling 3 Years Performance

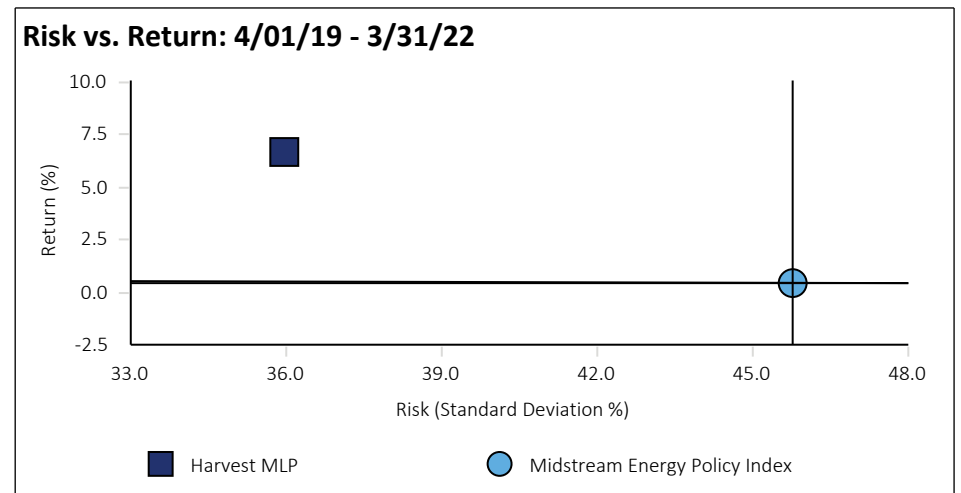
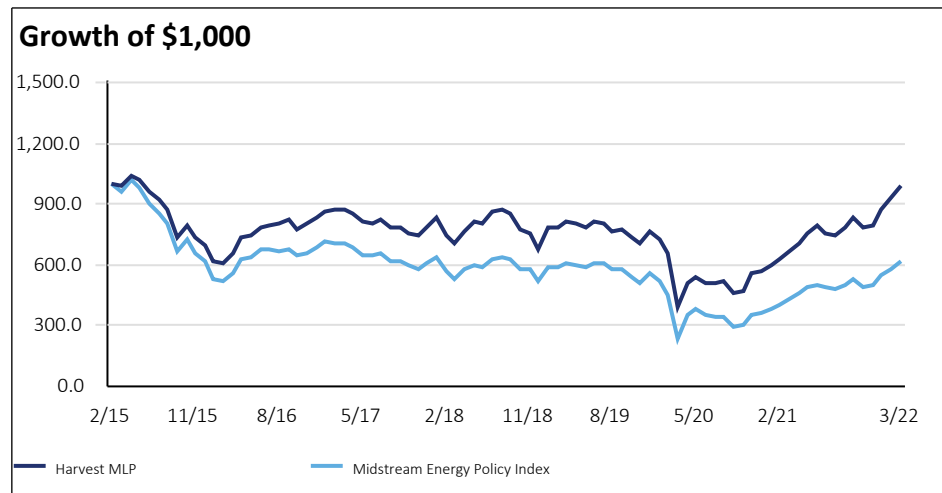
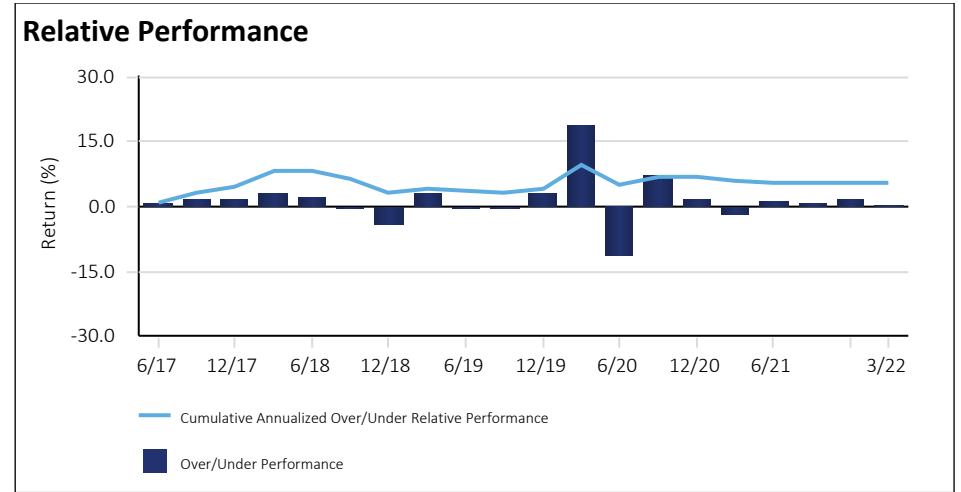
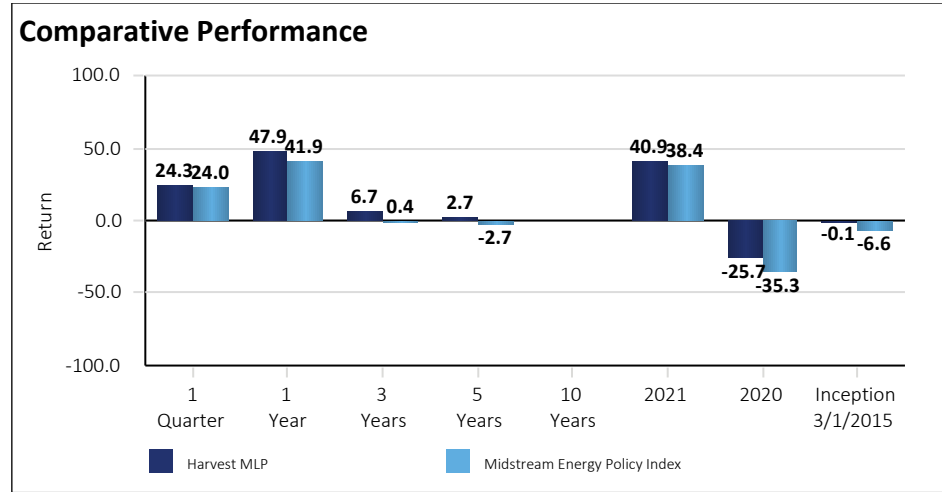




# Manager Summary

## Harvest MLP

Periods Ended March 31, 2022



### Historical Statistics: 4/01/19 - 3/31/22

	<u>Alpha</u>	<u>Tracking Error</u>	<u>Information Ratio</u>	<u>Beta</u>	<u>Standard Deviation</u>	<u>Sharpe Ratio</u>	<u>Maximum Drawdown</u>	<u>Up Capture</u>	<u>Down Capture</u>
Fund	4.07	12.13	0.08	0.81	41.38	0.38	-52.48	87.42	76.81
Benchmark	0.00	0.00		1.00	50.31	0.30	-61.00	100.00	100.00