



**PERSPECTIVES
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ENTERPRISE
SUCCESS**



PERIOD ENDING: DECEMBER 31, 2021

Investment Performance Review for

San Mateo County Employees' Retirement Association

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4th quarter summary

THE ECONOMIC CLIMATE

- Real GDP grew at a 4.9% rate year-over-year in the third quarter (+2.3% quarterly annualized rate). A slowdown in consumer spending contributed to a lower rate of growth. This was due to a combination of factors, including new COVID-19 restrictions, a delay in the reopening of businesses across the country, and general fear of virus spread which has led to less spending on services.
- The U.S. labor market improved further, as unemployment fell from 4.8% to 3.9%. The labor force participation rate has also improved, though very gradually, rising from 61.6% to 61.9%.

PORTFOLIO IMPACTS

- Credit spreads have reached extremely tight levels. High yield bonds traded at a credit spread of 283 bps at year-end. However, these spread levels may be justified by record-low bond default activity. Just 0.4% of U.S. high yield bonds defaulted in 2021, on a par-weighted basis.
- U.S. core CPI increased 5.5% year-over-year in December. Headline inflation, which includes all goods, reached 7.0%. Large price increases have occurred across many goods and services, though approximately half of the rise in inflation continues to be driven by energy prices and automobiles.

THE INVESTMENT CLIMATE

- In December it was announced that Senator Joe Manchin had communicated a hard “No” regarding his support for the Build Back Better bill. For months, Democrats have sought a solution to the disparate needs and spending interests of their party.
- Extremely fast spread of the Omicron variant worldwide does not seem to have had an outsized impact on the markets. While this new wave has in fact led to shutdowns in certain economies, much of the world has remained open, perhaps in acknowledgment that the health effects of Omicron are believed to be milder in nature.

ASSET ALLOCATION ISSUES

- Equity markets delivered strong returns in Q4, up +6.7% and ending the year up 18.5% (MSCI ACWI). U.S. equities delivered 11.0% during the quarter, while international equities delivered 2.7% and emerging market equities saw a slight loss of -1.3%, on an unhedged currency basis.
- Size and Value factor performance was negative once again during Q4. Large capitalization stocks significantly outperformed small capitalization stocks and Growth beat Value. Tighter monetary conditions and a pullback in some growth stocks has renewed talks of a possible Value rotation.

Risk assets continue to perform strongly, despite rapid global spread of the Omicron variant

U.S. economics summary

- Real GDP grew at a 4.9% rate year-over-year in the third quarter (+2.3% quarterly annualized rate). A slowdown in consumer spending contributed to a lower pace of growth. This was due to a combination of factors, including new COVID-19 restrictions, a delay in the reopening of businesses, and general fear of virus spread which has led to less spending on services. As GDP growth is stated in *inflation-adjusted* terms, higher inflation has also contributed to slower economic growth.
- U.S. core CPI, which excludes food and energy prices, increased 5.5% year-over-year in December. Headline inflation, which includes all goods, reached 7.0%. Large price increases have occurred across many goods and services, though approximately half of the rise in inflation continues to be driven by energy prices and automobiles.
- The U.S. unemployment fell further, from 4.8% to 3.9% during Q4. The labor force participation rate has improved, though very gradually, rising from 61.6% to 61.9%.
- After months of political brinksmanship, it appears the Build Back Better plan has stalled, as Senator Joe Manchin had communicated a hard “No” on his support for the Build Back Better bill. Democrats continue to seek a solution to the disparate needs and spending interests of their party.
- U.S. home prices increased +19.1% over the past year ending October. However, price growth may be cooling off, as the inventory of homes has expanded materially and mortgage interest rates have begun to rise.
- Consumer sentiment was mixed during the quarter. Depressed survey levels suggest we are no longer in the euphoric spending environment of mid to late 2021.

	Most Recent	12 Months Prior
Real GDP (YoY)	4.9% 9/30/21	(2.9%) 9/30/20
Inflation (CPI YoY, Core)	5.5% 12/31/21	1.6% 12/31/20
Expected Inflation (5yr-5yr forward)	2.3% 12/31/21	2.0% 12/31/20
Fed Funds Target Range	0% – 0.25% 12/31/21	0% – 0.25% 12/31/20
10-Year Rate	1.51% 12/31/21	0.91% 12/31/20
U-3 Unemployment	3.9% 12/31/21	6.7% 12/31/20
U-6 Unemployment	7.3% 12/31/21	11.7% 12/31/20

International economics summary

— COVID-19 variant B.1.1.529 (Omicron) was discovered in Botswana on November 11th and has since spread exponentially around the globe, replacing the delta variant as the dominant global strain. Based on available studies and data, the Omicron variant is much more infectious than prior variants, but its symptoms are less severe. Many countries have taken a cautious approach and have reinstated social distancing controls.

— Several countries including China and New Zealand have implemented zero-COVID approaches with the goal of completely eradicating the virus within their borders. These policies may present upside risks for inflation looking ahead, as they are likely to result in more uncertainty and therefore potentially sustain or even worsen current supply chain problems.

— Prices paid by global producers of

goods and services have surged over the last year. Chinese producer price growth (+10.3% in December) hit its highest level in 26 years, and German producer prices (+19.2% in November) grew very quickly as supply chain disruptions squeezed prices for timber and raw metal materials.

— Eurozone GDP grew +3.7% year-over-year in Q3, lagging U.S. growth over the same period (+4.9%). Economic growth was more robust in Italy (+3.8%) and a bit weaker in Germany (+2.5%).

— China’s real estate crisis seems to be spreading. In early December, Evergrande, one of the largest property developers in China, defaulted on its debt. An increasing number of Chinese property developers have been strained. Given that real estate development makes up nearly one third of China’s economy, a crisis in this sector could have serious ramifications.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	4.9% 9/30/21	7.0% 12/31/21	3.9% 12/31/21
Eurozone	3.9% 9/30/21	5.0% 12/31/21	7.2% 11/30/21
Japan	1.2% 9/30/21	0.8% 12/31/21	2.7% 11/30/21
BRICS Nations	5.2% 9/30/21	3.3% 12/31/21	5.4% 6/30/21
Brazil	4.0% 9/30/21	10.1% 12/31/21	12.1% 10/31/21
Russia	4.3% 9/30/21	8.4% 12/31/21	4.3% 11/30/21
India	8.4% 9/30/21	5.6% 12/31/21	7.9% 12/31/21
China	4.0% 12/31/21	1.5% 12/31/21	5.1% 12/31/21

NOTE: India lacks reliable government unemployment data. Unemployment rate shown above is estimated from the Centre for Monitoring Indian Economy. The Chinese unemployment rate represents the monthly surveyed urban unemployment rate in China.

Equity environment

- Equity markets delivered strong returns in Q4, up 6.7% and ending the year up 18.5% (MSCI ACWI). U.S. equities delivered 11.0% during the quarter, while international equities delivered 2.7% and emerging market equities saw a slight loss of -1.3%, on an unhedged currency basis.
- Size and Value factor performance was negative once again during Q4. Large capitalization stocks significantly outperformed small capitalization stocks (Russell 1000 +9.8%, Russell 2000 +2.1%) and Growth exceeded Value (Russell 1000 Growth +11.6%, Russell 1000 Value +7.8%). This theme held for full-year 2021.
- Extremely fast spread of the Omicron variant worldwide does not seem to have had an outsized impact on the markets. While this new wave has in fact led to shutdowns in certain countries,

much of the world has remained open, perhaps in acknowledgment that the health effects of Omicron are milder in nature.

- Labor costs and labor supply issues are front-of-mind in corporate boardrooms, and 60% of S&P 500 companies have reported negative impacts to Q4 earnings during quarterly calls so far, as reported by FactSet.
- Weakness in Chinese equities (MSCI China -6.1%) continued to drive the broader underperformance of emerging market equities. Chinese policymakers have signaled a shift in focus from containing excessive leverage in the property sector to promoting growth and stability ahead of next year’s parliamentary meeting. Still, the risk of further crackdowns on targeted sectors of the economy remains in place.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
U.S. Large Cap (S&P 500)	11.0%		28.7%	
U.S. Small Cap (Russell 2000)	2.1%		14.8%	
U.S. Equity (Russell 3000)	9.3%		25.7%	
U.S. Large Value (Russell 1000 Value)	7.8%		25.2%	
US Large Growth (Russell 1000 Growth)	11.6%		27.6%	
Global Equity (MSCI ACWI)	6.7%	7.1%	18.5%	20.9%
International Large (MSCI EAFE)	2.7%	4.2%	11.3%	19.4%
Eurozone (Euro Stoxx 50)	4.4%	6.9%	14.6%	24.4%
U.K. (FTSE 100)	5.2%	5.1%	17.3%	18.9%
Japan (NIKKEI 225)	(5.3%)	(2.0%)	(4.7%)	6.7%
Emerging Markets (MSCI Emerging Markets)	(1.3%)	(1.3%)	(2.5%)	(1.3%)

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 12/31/21

Domestic equity

U.S. equities were a top performer in Q4, delivering 11.0% (S&P 500). The S&P 500 Index achieved all-time closing highs on 70 days over the course of the year, which was nearly a record number in and of itself. Performance across sectors was broadly positive during Q4, though those with a greater “value” bias lagged the index (ex: Financials, Energy, Industrials). Per FactSet, the bottom-up price target for the S&P 500 Index by 2022 year-end is around 5300, which implies a price return of roughly 11% for the year.

While supply chain disruptions remain a key concern for chief financial officers in the United States and around the globe, the number one headwind for earnings in Q4 shifted to labor costs and shortages, based on earnings calls transcribed by FactSet. Workers have been quitting their jobs in great numbers

for a wide variety of reasons, pushing many employers to raise wages in order to retain employees, which could erode margins. Of companies that had reported Q4 earnings, 60% reported that rising labor costs had negatively impacted earnings. On a more optimistic note, those companies reported aggregate year-over-year earnings growth of around 28%, suggesting somewhat defensible margins and modest pricing power. Of companies mentioning labor issues, 85% discussed increasing prices or improving price realization on their earnings calls.

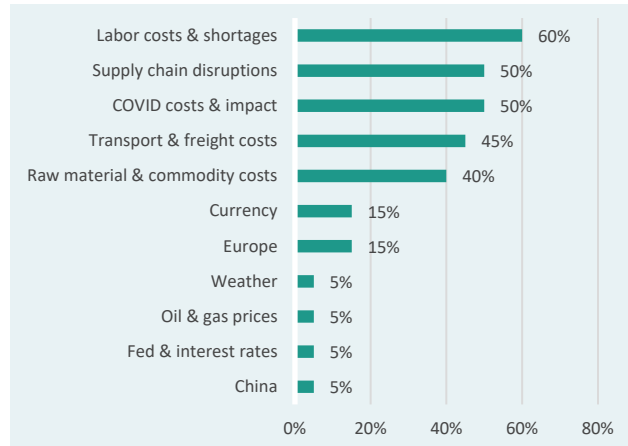
Net profit margins have fallen a percentage point from the record level of 13% achieved in Q2 2021, but remain historically high. If earnings growth in Q4 2021 meets expectations (21.4%), it will mark the fourth consecutive quarter of 20% YoY earnings growth.

S&P 500 INDEX



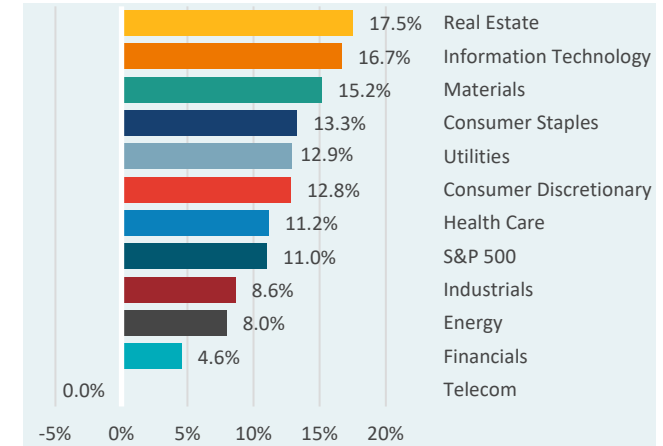
Source: Standard & Poor's, as of 12/31/21

S&P 500 COS. CITING NEGATIVE IMPACT – 4Q21



Source: FactSet, as of 1/13/22

Q4 SECTOR PERFORMANCE



Source: Standard & Poor's, as of 12/31/21

Domestic equity size & style

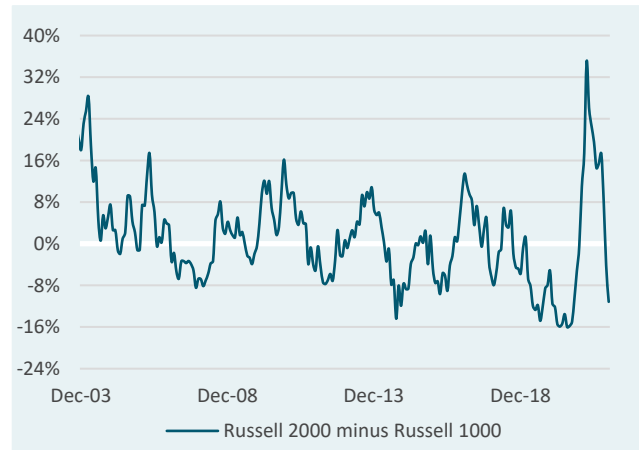
Size and Value factor performance was negative once again during Q4. Large capitalization stocks significantly outperformed small capitalization stocks (Russell 1000 +9.8%, Russell 2000 +2.1%) and Growth exceeded Value (Russell 1000 Growth +11.6%, Russell 1000 Value +7.8%). This theme held for full-year 2021.

Within MSCI's suite of long-only factor indices, Quality (+11.0%) was the top performer in Q4 which generally implies investor appetite for more defensive positioning. The strong performance of the Quality factor was skewed by Nvidia (+42.0%), Apple (+25.7%) and Microsoft (+19.5%).

Towards the end of the year, investor expectations for tighter Fed policy and interest rate hikes increased markedly. If the market is in fact undergoing a transition to tighter monetary conditions, this could have a notable impact on Value and Growth stock performance. The general cheapness of certain Value stocks and richness of certain Growth stocks may accentuate a value rotation, if and when this occurs. As always, we like to keep in mind that factor performance tends to be noisy and difficult to predict, which suggests that style investing should in most cases involve a longer-term focus.

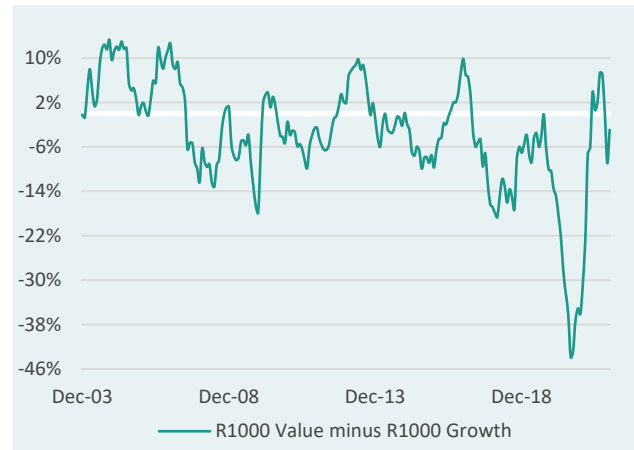
Size and Value underperformed during Q4 2021

SMALL CAP VS LARGE CAP (YOY)



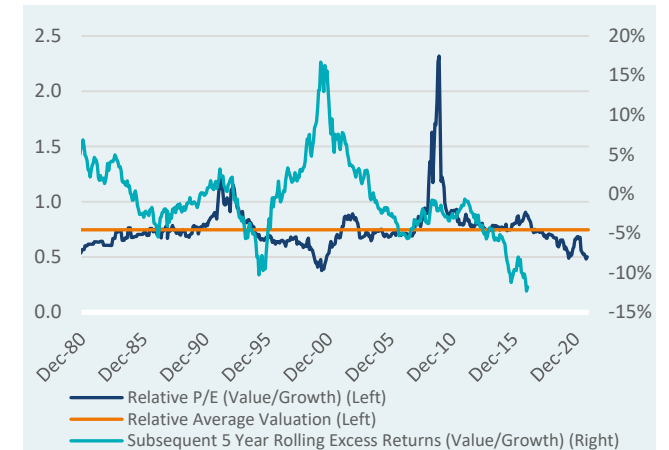
Source: FTSE, as of 12/31/21

VALUE VS GROWTH (YOY)



Source: FTSE, as of 12/31/21

VALUE VS. GROWTH RELATIVE VALUATIONS



Source: Standard & Poor's, as of 12/31/21

International developed equity

International developed equities delivered 2.7% during the quarter. U.S. equities were the top performer (S&P 500 +11.0%) while emerging market equities saw a slight loss (MSCI Emerging Markets -1.3%), on an unhedged currency basis. Currency movement during the quarter resulted in a loss of -1.5% (MSCI EAFE) relative to those investors with a currency hedging program.

Japanese equities (MSCI Japan -4.0%) underperformed most developed markets, reversing strong third quarter returns, though this was mostly caused by currency market movement (Yen -3.1%). The yen fell to its weakest level relative to the dollar since early 2017 in the fourth quarter as

the Bank of Japan's dovish policy increasingly diverged from peers, many of which have signaled the beginning of a normalization process from pandemic stimulus. Rising interest rate differentials, as well as speculation that the new strain of COVID-19 might not be as disruptive as had been feared, has likely contributed to investor flows out of yen positions.

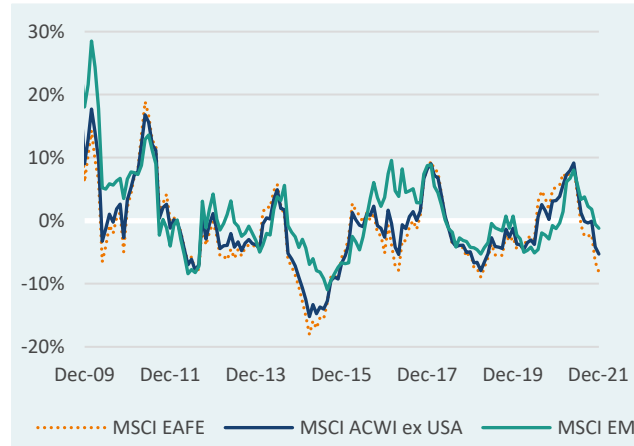
Swiss equities (MSCI Switzerland +12.8%) were the top performer in developed European markets, and unhedged U.S. investors benefitted from a 2.1% appreciation in the Swiss Franc relative to the U.S. dollar.

EFFECT OF CURRENCY (1-YEAR ROLLING)



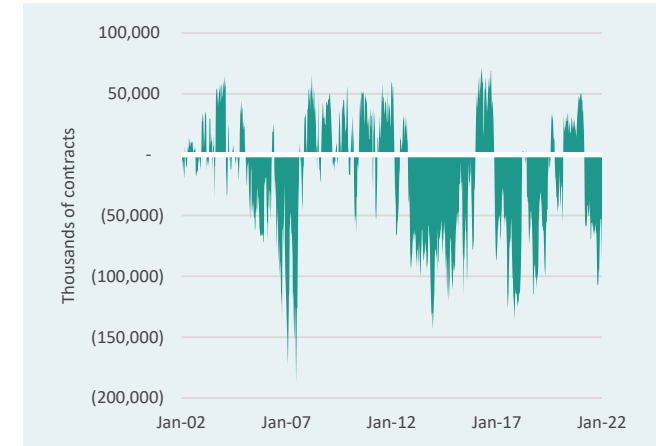
Source: MSCI, as of 12/31/21

INTERNATIONAL DEVELOPED EQUITIES



Source: MSCI, as of 12/31/21

YEN NET FUTURES POSITIONING



Source: CFTC, non-commercial positioning, as of 1/11/22

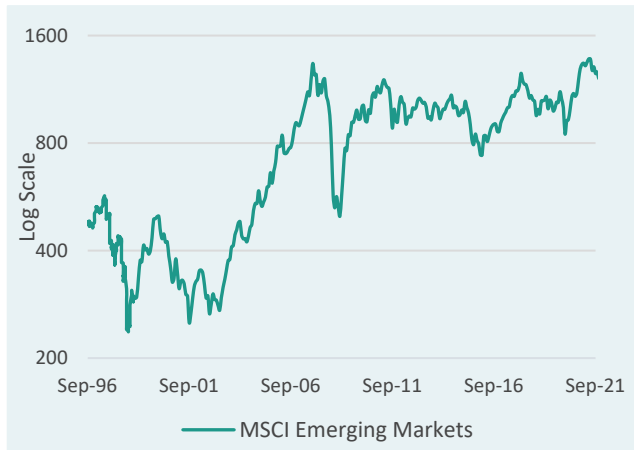
Emerging market equity

Emerging market equities saw a mild loss (MSCI EM -1.5%) on an unhedged currency basis, underperforming global markets again in the fourth quarter. Latin American and Asian emerging markets performed generally on par during the quarter (MSCI EM Latin America -2.7%, MSCI EM Asia -1.0%).

Weakness in Chinese equities (MSCI China -6.1%) continues to drive broader emerging market underperformance, as China delivered -21.7% return in 2021, while the broader complex was down -2.5% (MSCI China, MSCI Emerging Markets).

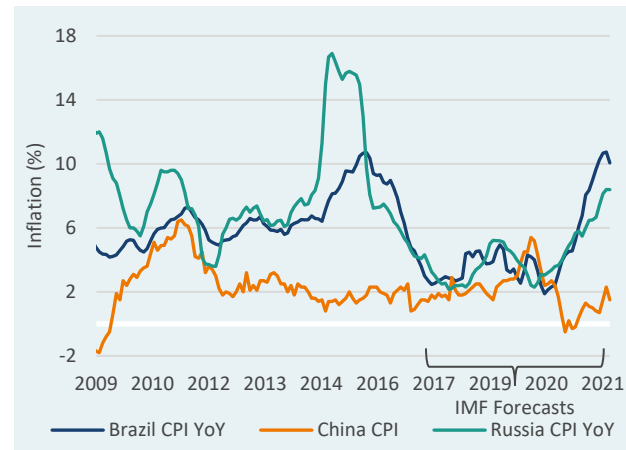
Inflation in Brazil has reached 10.7%, while Russia saw an 8.4% rise in prices and China sits near the longer-term average at 1.5%. Emerging market central banks have continued to raise interest rates. Brazil hiked their rate during the quarter from 6.25% to 9.25% in order to fight rising prices, while Russia hiked its rate from 6.75% to 8.50%. It is worth noting that many of these central banks have very recently implemented a domestic interest rate tightening cycle in order to battle price fluctuations and/or unwanted domestic currency movements. In other words, many emerging central banks deal with these types of issues more often than developed central bankers.

EMERGING MARKET EQUITY



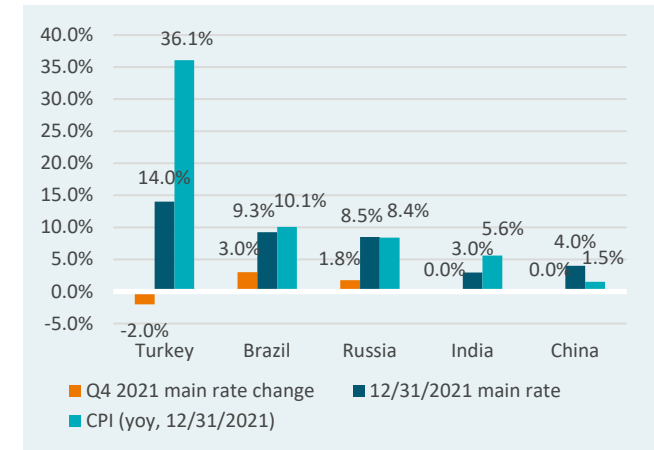
Source: MSCI, as of 12/31/21

INFLATION (YOY)



Source: Bloomberg, as of 12/31/21 or most recent data

CENTRAL BANK RATE CHANGES AND INFLATION



Source: Bloomberg, various, as of 12/31/21

Fixed income environment

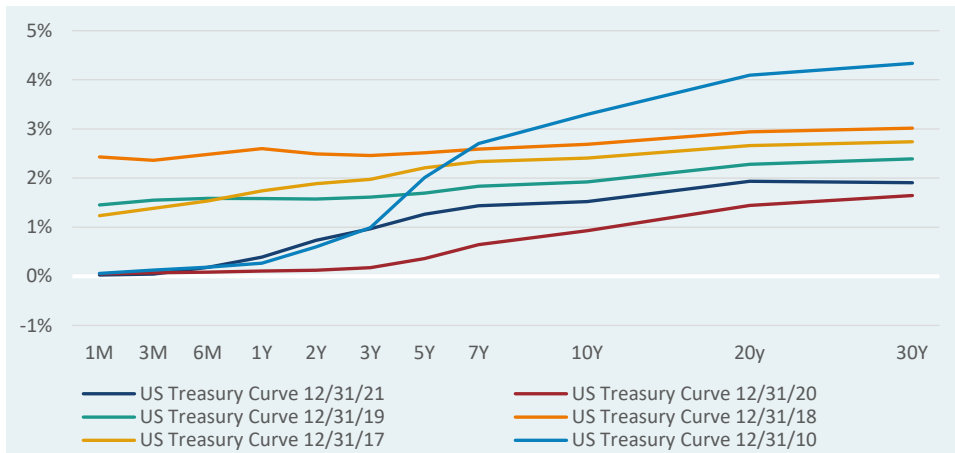
- The 10-year U.S. Treasury yield was relatively rangebound during the quarter, remaining at a yield of 1.5%. Thus far, U.S. interest rates have not noticeably reacted to an inflation rate of 7.0%. Market pricing seems to indicate that investors generally expect inflation to be transitory—perhaps falling towards normal levels by the end of this year.
- One of the largest stories over the quarter was the Fed’s pivot on inflation, the retirement of the word “transitory” to describe inflation, and a more aggressive policy path expected by investors. The conversation around the balance sheet shifted from concluding the taper in June to concluding in March, and perhaps selling assets as soon as June. The conversation around interest rates shifted from potentially hiking around June to the market fully pricing in a hike by March and maybe two by May. The Fed is now clearly more concerned with inflation relative to unemployment.
- Although credit spreads are tight, bond defaults have dropped to incredibly low levels. The one-year high-yield bond default rate reached 0.4% in December, one of the lowest rates on record.
- New issue activity across credit markets has been historically high. In the fourth quarter, \$285 billion of investment grade credit was issued. Over the full year, gross issuance totaled \$1.4 trillion, which was second only to the \$1.8 trillion issued in 2020.
- In early December, Evergrande, one of the largest property developers in China, defaulted on its debt. At the start of 2022, property developer Shimao also defaulted on its debt. These bonds had been classified as investment grade until recently. Credit spreads of Chinese debt have expanding enormously, from near 750 bps in June to 2,175 bps in November.

	QTD Total Return	1 Year Total Return
Core Fixed Income (Bloomberg U.S. Aggregate)	0.0%	(1.5%)
Core Plus Fixed Income (Bloomberg U.S. Universal)	0.0%	(1.1%)
U.S. Treasuries (Bloomberg U.S. Treasury)	0.2%	(2.3%)
U.S. High Yield (Bloomberg U.S. Corporate HY)	0.7%	5.3%
Bank Loans (S&P/LSTA Leveraged Loan)	0.7%	5.2%
Emerging Market Debt Local (JPM GBI-EM Global Diversified)	(2.5%)	(8.7%)
Emerging Market Debt Hard (JPM EMBI Global Diversified)	(0.4%)	(1.8%)
Mortgage-Backed Securities (Bloomberg MBS)	(0.4%)	(1.0%)

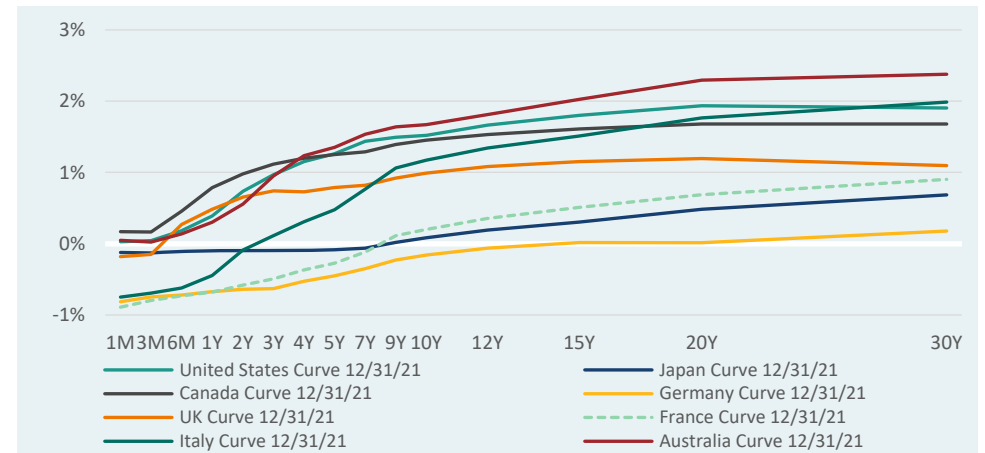
Source: Bloomberg, as of 12/31/21

Yield environment

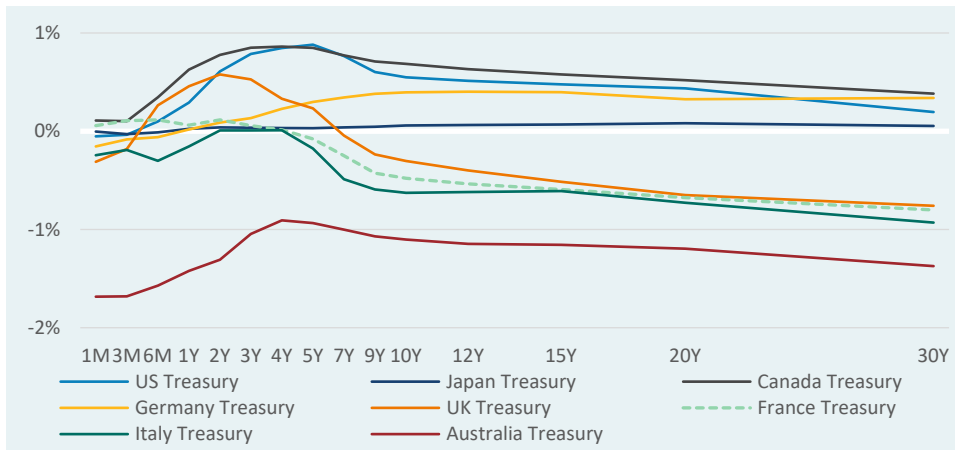
U.S. YIELD CURVE



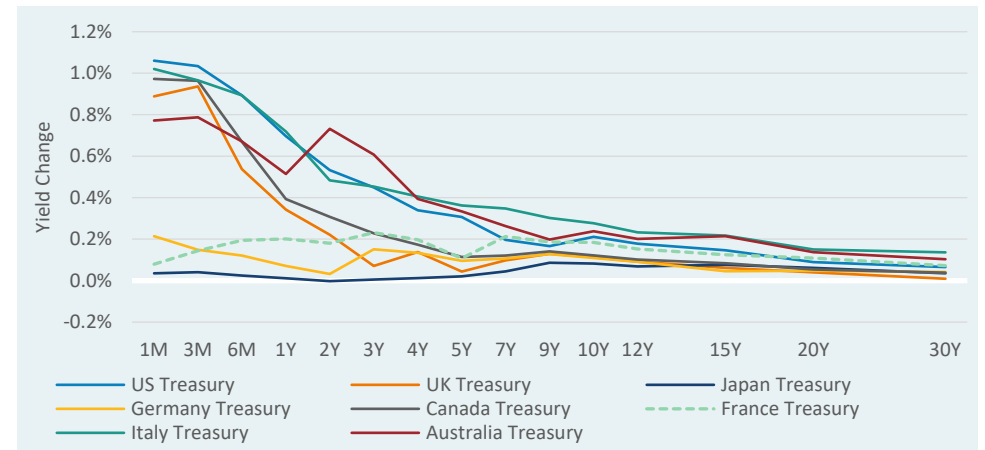
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 12/31/21

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	4.5	11.0	28.7	28.7	26.1	18.5	16.6
S&P 500 Equal Weighted	6.2	9.0	29.6	29.6	23.6	15.7	15.6
DJ Industrial Average	5.5	7.9	20.9	20.9	18.5	15.5	14.2
Russell Top 200	4.0	11.0	27.9	27.9	27.3	19.7	17.2
Russell 1000	4.1	9.8	26.5	26.5	26.2	18.4	16.5
Russell 2000	2.2	2.1	14.8	14.8	20.0	12.0	13.2
Russell 3000	3.9	9.3	25.7	25.7	25.8	18.0	16.3
Russell Mid Cap	4.1	6.4	22.6	22.6	23.3	15.1	14.9
Style Index							
Russell 1000 Growth	2.1	11.6	27.6	27.6	34.1	25.3	19.8
Russell 1000 Value	6.3	7.8	25.2	25.2	17.6	11.2	13.0
Russell 2000 Growth	0.4	0.0	2.8	2.8	21.2	14.5	14.1
Russell 2000 Value	4.1	4.4	28.3	28.3	18.0	9.1	12.0

INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
MSCI ACWI	4.0	6.7	18.5	18.5	20.4	14.4	11.9
MSCI ACWI ex US	4.1	1.8	7.8	7.8	13.2	9.6	7.3
MSCI EAFE	5.1	2.7	11.3	11.3	13.5	9.5	8.0
MSCI EM	1.9	(1.3)	(2.5)	(2.5)	10.9	9.9	5.5
MSCI EAFE Small Cap	4.4	0.1	10.1	10.1	15.6	11.0	10.8
Style Index							
MSCI EAFE Growth	4.3	4.1	11.3	11.3	19.0	13.6	10.1
MSCI EAFE Value	6.0	1.2	10.9	10.9	7.8	5.3	5.8
Regional Index							
MSCI UK	7.3	5.6	18.5	18.5	8.7	6.2	5.1
MSCI Japan	1.9	(4.0)	1.7	1.7	11.7	8.5	8.3
MSCI Euro	6.3	3.9	14.9	14.9	14.6	9.7	8.4
MSCI EM Asia	1.5	(1.0)	(5.1)	(5.1)	13.3	11.9	8.1
MSCI EM Latin American	5.9	(2.7)	(8.1)	(8.1)	(2.4)	1.5	(2.2)

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
Bloomberg US TIPS	0.3	2.4	6.0	6.0	8.4	5.3	3.1
Bloomberg US Treasury Bills	0.0	0.0	0.0	0.0	1.0	1.2	0.7
Bloomberg US Agg Bond	(0.3)	0.0	(1.5)	(1.5)	4.8	3.6	2.9
Bloomberg US Universal	(0.1)	(0.0)	(1.1)	(1.1)	5.2	3.8	3.3
Duration							
Bloomberg US Treasury 1-3 Yr	(0.2)	(0.6)	(0.6)	(0.6)	2.0	1.6	1.1
Bloomberg US Treasury Long	(1.4)	3.1	(4.6)	(4.6)	8.8	6.5	4.5
Bloomberg US Treasury	(0.5)	0.2	(2.3)	(2.3)	4.1	3.1	2.1
Issuer							
Bloomberg US MBS	(0.1)	(0.4)	(1.0)	(1.0)	3.0	2.5	2.3
Bloomberg US Corp. High Yield	1.9	0.7	5.3	5.3	8.8	6.3	6.8
Bloomberg US Agency Interm	(0.2)	(0.7)	(1.2)	(1.2)	2.4	2.0	1.6
Bloomberg US Credit	(0.1)	0.2	(1.1)	(1.1)	7.2	5.1	4.4
OTHER							
Index							
Bloomberg Commodity	3.5	(1.6)	27.1	27.1	9.9	3.7	(2.9)
Wilshire US REIT	8.8	17.1	46.2	46.2	19.2	10.9	11.5
CS Leveraged Loans	0.6	0.7	5.4	5.4	5.4	4.3	4.8
S&P Global Infrastructure	6.6	4.6	11.9	11.9	10.2	7.8	7.7
Alerian MLP	3.7	0.9	40.9	40.9	1.0	(3.7)	(0.3)
Regional Index							
JPM EMBI Global Div	1.4	(0.4)	(1.8)	(1.8)	5.9	4.7	5.3
JPM GBI-EM Global Div	1.6	(2.5)	(8.7)	(8.7)	2.1	2.8	0.7
Hedge Funds							
HFRI Composite	1.3	0.6	10.3	10.3	10.9	7.1	5.8
HFRI FOF Composite	0.8	0.7	6.5	6.5	8.6	5.8	4.6
Currency (Spot)							
Euro	1.0	(1.9)	(7.1)	(7.1)	(0.2)	1.5	(1.3)
Pound Sterling	2.4	0.5	(0.9)	(0.9)	2.1	1.9	(1.4)
Yen	(1.4)	(3.1)	(10.3)	(10.3)	(1.6)	0.3	(4.0)

Source: Morningstar, HFRI, as of 12/31/21

- The Total Fund, net of manager fees, returned 2.9% in the fourth quarter of 2021 and ranked in the 88th percentile among other public plans greater than \$1 billion (median of 4.0%). It lagged the policy index return of 3.6%. The Total Fund ex Overlay returned 2.9% for the quarter. The Total Fund one-year return of 12.1% lagged the policy index return of 13.9% and ranked in the 84th percentile of its peer universe. The three-year return of 12.5% (89th percentile) lagged the median large public plan (14.6%) and the policy index (13.3%).

- Fourth quarter results were enhanced by the following factors:
 1. Acadian outperformed the Russell 1000 gaining 11.8% versus 9.8% for the index. The value factor continued to provide positive returns in Q4, as did certain factors within quality (such as the cash strength factor.)
 2. QMA beat the Russell 2000 (4.9% vs. 2.1%,) bringing the 1-year outperformance to 12%. Despite small cap underperforming large cap, QMA's value factor contributed to relative returns for the quarter.

- Fourth quarter results were hindered by the following factors:
 1. Mondrian gained 0.1% trailing the MSCI ACWI ex US Value (1.3%). An overweight to Japan was the top detractor for performance as Japan trailed most countries with a -6.2% return in the fourth quarter. Stock selection in Brazil and Spain also hurt relative performance.

Total Fund
Performance Summary (Net of Fees)

Period Ending: December 31, 2021

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank*	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Total Fund**	2.9	88	4.0	61	12.1	84	10.7	91	12.5	89	9.3	90	9.1	62
<i>Policy Index¹</i>	3.6	74	4.8	41	13.9	58	11.5	86	13.3	83	10.2	68	9.6	48
<i>InvMetrics Public DB > \$1B Net Median</i>	4.0		4.4		14.2		13.4		14.6		10.7		9.4	
Total Fund ex Overlay	2.9	88	4.1	61	12.2	84	10.7	91	12.4	90	9.3	91	9.1	65
<i>Policy Index¹</i>	3.6	74	4.8	41	13.9	58	11.5	86	13.3	83	10.2	68	9.6	48
<i>InvMetrics Public DB > \$1B Net Median</i>	4.0		4.4		14.2		13.4		14.6		10.7		9.4	
Public Equity	5.8	71	4.2	77	16.7	81	15.2	95	18.8	94	13.4	87	12.1	70
<i>Blended Public Equity Index¹</i>	5.9	69	5.1	63	18.8	63	17.2	63	20.3	63	14.4	58	12.7	52
<i>InvMetrics All DB Total Eq Net Median</i>	6.6		5.6		19.8		17.8		20.7		14.7		12.8	
US Equity	9.6	25	9.2	35	23.9	80	19.0	92	22.2	90	15.8	77	14.9	69
<i>Blended US Equity Index¹</i>	9.3	38	9.2	40	25.7	54	23.3	21	25.8	14	18.0	16	16.2	10
<i>Russell 3000</i>	9.3	38	9.2	40	25.7	54	23.3	21	25.8	14	18.0	16	16.3	8
<i>InvMetrics All DB US Eq Net Median</i>	9.1		9.0		25.7		21.8		24.6		16.9		15.4	
Large Cap Equity	10.2	31	9.8	37	23.9	65	19.3	57	22.6	55	17.0	45	15.7	40
<i>Russell 1000</i>	9.8	36	10.0	35	26.5	49	23.7	34	26.2	35	18.4	35	16.5	28
<i>eV US Large Cap Equity Net Median</i>	8.9		8.7		26.1		20.4		23.5		16.3		14.8	
<i>Acadian US MGD V</i>	11.8	18	10.9	39	23.2	74	12.5	95	16.6	95	--	--	--	--
<i>BlackRock Russell 1000</i>	9.8	56	10.0	54	26.5	57	23.7	22	26.2	21	--	--	--	--
<i>DE Shaw</i>	10.7	37	9.3	62	21.2	88	20.7	50	23.0	61	17.2	44	16.6	11
<i>PanAgora Defuseq</i>	9.1	71	8.6	72	20.6	90	12.5	95	17.8	93	--	--	--	--
<i>Russell 1000</i>	9.8	56	10.0	54	26.5	57	23.7	22	26.2	21	18.4	20	16.5	11
<i>eV US Large Cap Core Equity Net Median</i>	10.0		10.2		26.9		20.7		23.7		16.7		15.1	

* Total Fund and asset class aggregates are ranked in InvMetrics universes. Managers are ranked in eVest (eA) manager universes.

** Includes Parametric Minneapolis manager funded in August 2013.

1. See Appendix for Benchmark History.

Total Fund
Performance Summary (Net of Fees)

Period Ending: December 31, 2021

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Small Cap Equity	4.9	58	4.3	45	26.4	40	13.9	88	16.5	91	9.2	80	11.0	89
<i>Russell 2000</i>	2.1	79	-2.3	85	14.8	77	17.4	67	20.0	60	12.0	55	13.2	58
<i>eV US Small Cap Equity Net Median</i>	5.3		3.7		23.8		19.7		21.4		12.5		13.7	
QMA US Small Cap	4.9	69	4.3	56	26.4	40	13.9	92	16.5	92	9.2	93	--	--
<i>Russell 2000</i>	2.1	91	-2.3	95	14.8	92	17.4	73	20.0	67	12.0	66	13.2	68
<i>eV US Small Cap Core Equity Net Median</i>	6.1		4.8		24.2		20.6		21.4		13.1		14.0	
Domestic Equity Overlay	1.4	--	-1.6	--	8.9	--	--	--	--	--	--	--	--	--
International Equity	1.5	53	-1.2	55	9.1	36	11.0	39	15.0	37	10.7	36	8.0	52
<i>Blended International Equity Index¹</i>	2.1	20	0.4	20	11.2	12	10.4	49	14.0	50	10.2	46	7.9	55
<i>MSCI EAFE Gross</i>	2.7	10	2.4	6	11.8	9	10.0	56	14.1	49	10.1	49	8.5	32
<i>InvMetrics All DB ex-US Eq Net Median</i>	1.6		-1.0		8.4		10.3		14.0		10.0		8.0	
Baillie Gifford	1.1	54	-3.0	77	3.8	78	17.8	49	22.8	40	15.2	51	--	--
<i>MSCI ACWI ex US</i>	1.9	43	-1.1	69	8.3	54	9.7	94	13.7	99	10.1	99	--	--
<i>MSCI ACWI ex US Growth</i>	2.4	38	-1.3	71	5.4	75	13.6	79	18.2	78	13.4	73	--	--
<i>eV ACWI ex-US Growth Equity Net Median</i>	1.3		1.5		8.9		17.4		21.5		15.3		11.0	
Mondrian	0.1	53	-3.6	83	6.9	87	3.4	80	8.4	82	6.6	61	5.7	92
<i>MSCI ACWI ex USA Value Gross</i>	1.3	31	-0.8	35	11.1	65	5.3	70	8.9	66	6.6	60	5.9	91
<i>MSCI ACWI ex USA Gross</i>	1.9	25	-1.1	37	8.3	79	9.7	28	13.7	22	10.1	21	7.8	40
<i>eV ACWI ex-US Value Equity Net Median</i>	0.2		-1.9		12.2		7.3		10.5		7.5		7.0	
BlackRock MSCI ACWI EX-US IMI	1.7	66	-0.9	65	8.7	59	--	--	--	--	--	--	--	--
<i>MSCI ACWI ex USA IMI</i>	1.6	66	-1.0	66	8.5	63	9.8	80	13.6	78	9.8	82	7.6	81
<i>eV ACWI ex-US All Cap Core Eq Net Median</i>	3.0		1.0		10.0		13.8		16.9		12.1		9.2	
Int'l Equity Currency Overlay														
International Equity Overlay	2.0	--	0.0	--	3.6	--	--	--	--	--	--	--	--	--

1. See Appendix for Benchmark History.

Total Fund
Performance Summary (Net of Fees)

Period Ending: December 31, 2021

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Fixed Income	0.2	24	0.4	28	1.6	14	4.2	24	5.6	30	4.5	22	4.7	16
<i>Blended Fixed Income Index¹</i>	0.2	23	0.6	21	0.4	28	3.7	35	6.0	23	4.4	26	3.4	54
<i>InvMetrics All DB Total Fix Inc Net Median</i>	-0.1		0.1		-0.5		3.3		5.1		3.9		3.4	
Core Fixed	-0.3	--	-0.3	--	-1.2	--	3.2	--	4.8	--	3.7	--	3.6	--
<i>Bloomberg US Aggregate TR</i>	0.0	--	0.1	--	-1.5	--	2.9	--	4.8	--	3.6	--	2.9	--
DoubleLine	-0.3	48	-0.7	88	-1.0	74	--	--	--	--	--	--	--	--
<i>Bloomberg US Aggregate TR</i>	0.0	28	0.1	42	-1.5	89	2.9	25	4.8	8	3.6	36	2.9	53
<i>eV US Securitized Fixed Inc Net Median</i>	-0.3		-0.1		-0.1		1.7		3.3		3.1		3.0	
FIAM Bond	0.1	8	0.3	10	-0.8	19	4.4	6	6.1	4	4.4	4	3.8	16
NISA Core Bond	0.0	18	0.1	22	-1.5	50	--	--	--	--	--	--	--	--
<i>Bloomberg US Aggregate TR</i>	0.0	22	0.1	27	-1.5	52	2.9	74	4.8	76	3.6	73	2.9	81
<i>eV US Core Fixed Inc Net Median</i>	-0.1		-0.1		-1.5		3.3		5.2		3.8		3.2	
Western TRU	-1.1	99	-1.2	99	-1.6	58	2.2	99	4.5	89	3.8	52	--	--
<i>3-Month Libor Total Return USD</i>	0.0	17	0.1	27	0.2	4	0.4	99	1.0	99	1.4	99	0.9	99
<i>Bloomberg US Aggregate TR</i>	0.0	22	0.1	27	-1.5	52	2.9	74	4.8	76	3.6	73	2.9	81
<i>eV US Core Fixed Inc Net Median</i>	-0.1		-0.1		-1.5		3.3		5.2		3.8		3.2	
Core Fixed Income Overlay	1.4	--	3.2	--	-0.1	--	--	--	--	--	--	--	--	--
Opportunistic Credit	1.0	--	1.8	--	6.9	--	6.1	--	7.2	--	6.3	--	8.4	--
<i>Bloomberg BA Intermediate HY</i>	0.6	--	1.5	--	4.1	--	5.9	--	8.7	--	6.0	--	5.4	--
Angelo Gordon Opportunistic*	17.8	--	20.9	--	32.8	--	13.5	--	13.0	--	15.5	--	--	--
Angelo Gordon Credit Solutions*	2.8	1	5.6	1	22.7	1	12.7	1	--	--	--	--	--	--
<i>Bloomberg BA Intermediate HY</i>	0.6	52	1.5	41	4.1	77	5.9	44	8.7	36	6.0	35	5.4	86
<i>eV US High Yield Fixed Inc Net Median</i>	0.7		1.5		5.0		5.6		8.2		5.8		6.4	

* Preliminary return as of 12/31/2021.

1. See Appendix for Benchmark History.

Total Fund
Performance Summary (Net of Fees)

Period Ending: December 31, 2021

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Beach Point Select	4.3	1	5.7	1	15.9	1	12.8	1	12.8	1	9.5	2	--	--
<i>Bloomberg BA Intermediate HY</i>	0.6	52	1.5	41	4.1	77	5.9	44	8.7	36	6.0	35	5.4	86
<i>eV US High Yield Fixed Inc Net Median</i>	0.7		1.5		5.0		5.6		8.2		5.8		6.4	
Brigade Capital	1.5	3	3.3	2	14.2	1	8.9	5	9.0	29	6.6	18	6.5	43
<i>Bloomberg BA Intermediate HY</i>	0.6	52	1.5	41	4.1	77	5.9	44	8.7	36	6.0	35	5.4	86
<i>50% Barclays HY/ 50% Bank Loan</i>	0.7	43	1.7	24	5.3	41	5.1	65	7.1	77	5.3	75	5.8	78
<i>eV US High Yield Fixed Inc Net Median</i>	0.7		1.5		5.0		5.6		8.2		5.8		6.4	
PIMCO Diversified	0.0	95	0.2	98	0.3	99	3.4	95	6.4	87	--	--	--	--
<i>Blended PIMCO Diversified Index¹</i>	0.2	91	0.3	97	0.6	99	3.6	93	6.8	83	5.0	81	5.5	85
<i>Bloomberg BA Intermediate HY</i>	0.6	52	1.5	41	4.1	77	5.9	44	8.7	36	6.0	35	5.4	86
<i>eV US High Yield Fixed Inc Net Median</i>	0.7		1.5		5.0		5.6		8.2		5.8		6.4	
Franklin Templeton	-1.1	81	-2.8	85	-4.4	72	-5.0	99	-3.0	99	-1.0	99	2.1	79
<i>Bloomberg Multiverse TR</i>	-0.7	67	-1.6	67	-4.5	73	2.0	80	3.7	81	3.4	77	2.0	80
<i>eV All Global Fixed Inc Net Median</i>	-0.3		-0.4		-0.8		3.4		5.6		4.4		3.7	
Private Credit	0.5	--	1.9	--	6.6	--	6.7	--	7.1	--	7.1	--	--	--
<i>Cliffwater Direct Lending Index*</i>	2.7	--	5.4	--	13.2	--	9.2	--	9.2	--	8.8	--	9.7	--
Blackrock DL Feeder IX-U ⁺	1.0	12	3.7	1	7.5	9	--	--	--	--	--	--	--	--
<i>Cliffwater Direct Lending Index</i>	2.7	1	5.4	1	13.2	2	9.2	4	9.2	24	8.8	3	9.7	1
<i>eV US High Yield Fixed Inc Net Median</i>	0.7		1.5		5.0		5.6		8.2		5.8		6.4	
PIMCO Private Income ⁺	0.0	96	2.2	7	11.6	3	9.6	3	--	--	--	--	--	--
<i>Bloomberg BA Intermediate HY</i>	0.6	52	1.5	41	4.1	77	5.9	44	8.7	36	6.0	35	5.4	86
<i>Cliffwater Direct Lending Index</i>	2.7	1	5.4	1	13.2	2	9.2	4	9.2	24	8.8	3	9.7	1
<i>eV US High Yield Fixed Inc Net Median</i>	0.7		1.5		5.0		5.6		8.2		5.8		6.4	

* Preliminary return as of 12/31/2021.

1. See Appendix for Benchmark History.

Total Fund
Performance Summary (Net of Fees)

Period Ending: December 31, 2021

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
TCP Direct Lending VIII*	2.2	1	3.6	1	7.4	11	6.8	21	6.8	83	7.0	11	--	--
White Oak Yield*	0.0	96	0.6	94	3.8	80	4.4	80	5.5	93	--	--	--	--
White Oak YSF V*	0.0	96	0.4	96	1.7	99	--	--	--	--	--	--	--	--
<i>Cliffwater Direct Lending Index</i>	2.7	1	5.4	1	13.2	2	9.2	4	9.2	24	8.8	3	9.7	1
<i>eV US High Yield Fixed Inc Net Median</i>	0.7		1.5		5.0		5.6		8.2		5.8		6.4	
Alternatives	-0.2	--	6.6	--	15.8	--	23.6	--	18.0	--	13.0	--	9.9	--
<i>Blended Alternatives Index¹</i>	1.1	--	5.3	--	17.5	--	14.6	--	11.9	--	12.0	--	10.3	--
Private Equity** **	0.1	74	13.5	35	30.2	58	48.9	3	37.3	2	28.2	3	22.1	1
<i>Blended Private Equity Index¹</i>	1.0	61	9.1	57	34.9	48	26.2	53	19.0	61	18.8	41	18.2	22
<i>InvMetrics All DB Private Eq Net Median</i>	2.4		10.2		34.0		27.2		20.8		17.3		14.9	
Hedge Fund/Absolute Return	-0.5	88	-0.3	83	2.2	88	-2.5	94	-2.6	94	-3.0	97	1.6	92
<i>Absolute Return Custom Index¹</i>	1.0	50	2.1	62	4.0	84	4.3	87	4.9	85	5.2	72	4.7	77
<i>InvMetrics All DB Hedge Funds Net Median</i>	1.0		3.4		9.6		10.4		10.0		7.0		5.9	
Aberdeen Standard GARS	1.6	40	-0.9	70	-2.6	87	2.4	76	4.6	69	2.3	81	--	--
Acadian MAAR Fund LLC	-1.1	77	0.4	58	1.7	78	--	--	--	--	--	--	--	--
CFM Systematic Global Macro	-5.7	95	-4.7	87	6.8	53	--	--	--	--	--	--	--	--
Graham Quant Macro	-2.3	86	-5.1	88	-2.4	87	--	--	--	--	--	--	--	--
PIMCO MAARS Fund LP	5.3	17	10.3	9	11.2	38	--	--	--	--	--	--	--	--
<i>Absolute Return Custom Index¹</i>	1.0	44	2.1	41	4.0	66	4.3	66	4.9	67	5.2	59	4.7	59
<i>eV Alt All Multi-Strategy Median</i>	0.7		1.1		7.5		7.5		7.8		6.5		6.0	

* Preliminary return as of 12/31/2021.

** Returns are one-quarter lag.

** Excludes EnCap Energy Capital Fund and Sheridan Production Partners.

1. See Appendix for Benchmark History.

Total Fund
Performance Summary (Net of Fees)

Period Ending: December 31, 2021

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Inflation Hedge	3.0	--	8.0	--	18.1	--	4.9	--	5.9	--	4.9	--	--	--
<i>Blended Inflation Hedge Index¹</i>	5.3	--	10.4	--	23.2	--	10.1	--	9.9	--	7.6	--	--	--
Real Estate	4.3	52	10.2	43	16.2	50	7.9	59	7.5	50	7.9	38	9.7	20
<i>NCREIF ODCE</i>	8.0	21	15.1	18	22.2	20	11.2	11	9.2	15	8.7	17	10.4	9
<i>InvMetrics All DB Real Estate Pub Net Median</i>	4.7	--	9.4	--	16.2	--	8.5	--	7.4	--	7.2	--	9.1	--
Harrison Street Core Property	2.5	--	5.4	--	9.8	--	--	--	--	--	--	--	--	--
Invesco	5.7	--	13.7	--	20.8	--	8.9	--	8.0	--	8.2	--	9.8	--
<i>NCREIF ODCE</i>	8.0	--	15.1	--	22.2	--	11.2	--	9.2	--	8.7	--	10.4	--
Invesco US Val IV ⁺	0.0	--	2.0	--	6.4	--	4.3	--	7.4	--	9.1	--	--	--
Invesco US Val V	4.6	--	14.1	--	30.8	--	15.1	--	--	--	--	--	--	--
<i>NCREIF ODCE</i>	8.0	--	15.1	--	22.2	--	11.2	--	9.2	--	8.7	--	10.4	--
<i>NCREIF ODCE + 2%</i>	8.5	--	16.2	--	24.6	--	13.4	--	11.4	--	10.9	--	12.6	--
PGIM RE US Debt Fund	1.1	--	2.5	--	5.4	--	4.9	--	5.3	--	--	--	--	--
Stockbridge Value IV ⁺	0.0	--	1.7	--	--	--	--	--	--	--	--	--	--	--
<i>NCREIF ODCE</i>	8.0	--	15.1	--	22.2	--	11.2	--	9.2	--	8.7	--	10.4	--
Private Real Asset⁺⁺	-2.2	--	8.5	--	28.7	--	13.1	--	4.5	--	3.0	--	--	--
<i>Blended Private Real Asset Index¹</i>	1.1	--	4.4	--	28.8	--	7.8	--	7.0	--	6.1	--	--	--
<i>Blended Secondary CA Private RA Index¹</i>	3.1	--	9.8	--	22.0	--	6.4	--	3.8	--	6.9	--	--	--
Public Real Assets	3.4	--	5.5	--	17.7	--	0.3	--	4.9	--	2.8	--	--	--
<i>Blended Public Real Asset Index¹</i>	3.5	--	5.7	--	17.8	--	6.0	--	9.2	--	5.8	--	--	--
SSgA Custom Real Asset	3.4	--	5.5	--	17.7	--	5.9	--	9.1	--	5.8	--	--	--
<i>SSgA Custom Real Asset Index¹</i>	3.5	--	5.7	--	17.8	--	6.0	--	9.2	--	5.8	--	--	--

⁺ Preliminary return as of 12/31/2021.

⁺⁺ Returns are one-quarter lag.

1. See Appendix for Benchmark History.

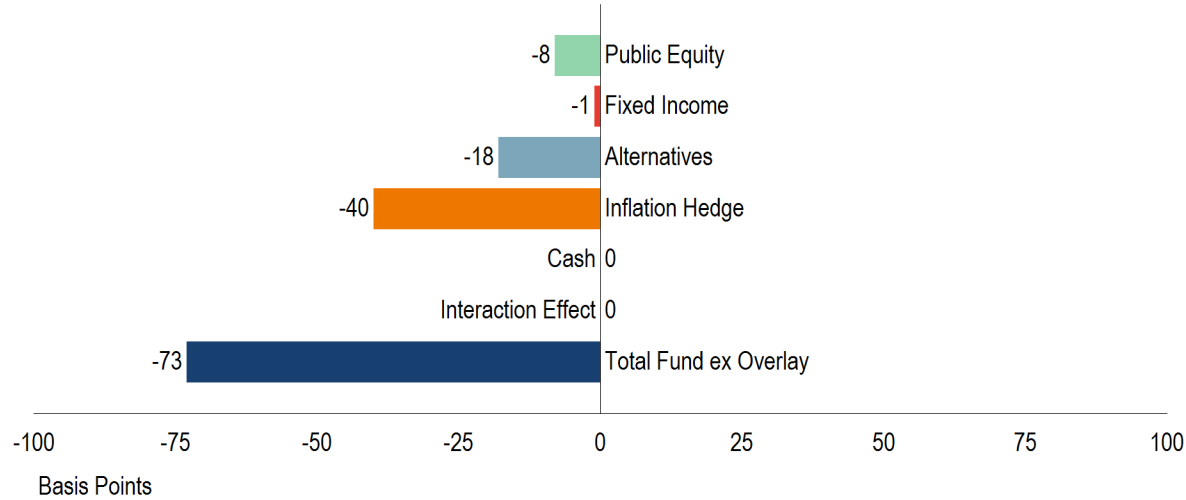
Total Fund
Performance Summary (Net of Fees)

Period Ending: December 31, 2021

	3 Mo (%)	Rank	Fiscal YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Cash	0.0	--	0.1	--	0.3	--	0.5	--	0.7	--	0.8	--	0.8	--
91 Day T-Bills	0.0	--	0.0	--	0.0	--	0.2	--	0.8	--	1.1	--	0.6	--
General Account	0.0	--	0.2	--	0.4	--	0.7	--	1.5	--	2.2	--	1.5	--
Treasury & LAIF	0.4	--	0.6	--	1.2	--	1.3	--	1.9	--	2.3	--	1.5	--
91 Day T-Bills	0.0	--	0.0	--	0.0	--	0.2	--	0.8	--	1.1	--	0.6	--
Currency Hedge Cash Overlay	-0.1	--	-0.1	--	-0.2	--	--	--	--	--	--	--	--	--

Total Fund ex Overlay
Performance Attribution

Period Ending: December 31, 2021

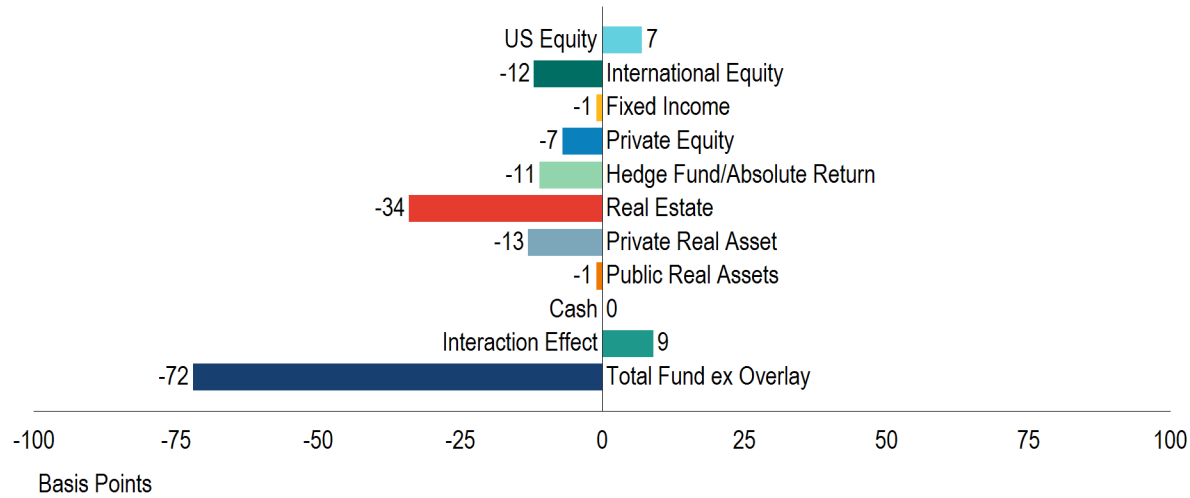


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction*	Total Effects
Public Equity	5.75%	5.94%	-0.19%	-0.08%	-0.02%	0.00%	-0.10%
Fixed Income	0.20%	0.24%	-0.04%	-0.01%	0.07%	0.00%	0.06%
Alternatives	-0.22%	1.06%	-1.28%	-0.18%	-0.03%	-0.01%	-0.22%
Inflation Hedge	2.99%	5.34%	-2.35%	-0.40%	0.00%	0.01%	-0.39%
Cash	0.05%	0.01%	0.04%	0.00%	-0.08%	0.00%	-0.08%
Total	2.85%	3.57%	-0.73%	-0.67%	-0.06%	0.00%	-0.73%

Attribution does not include the impact of the Parametric Minneapolis strategy.
* Interaction Effects include Residual Effects.

Total Fund ex Overlay
Performance Attribution

Period Ending: December 31, 2021

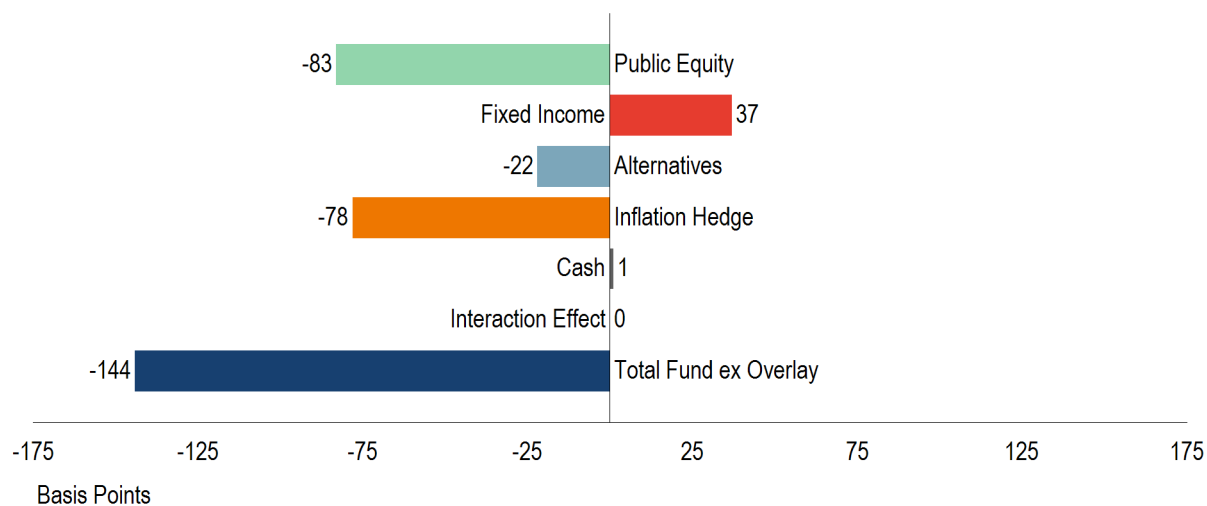


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction* Effects	Total Effects
US Equity	9.65%	9.28%	0.37%	0.07%	-0.05%	0.00%	0.03%
International Equity	1.54%	2.14%	-0.60%	-0.12%	-0.01%	0.00%	-0.13%
Fixed Income	0.20%	0.24%	-0.04%	-0.01%	0.07%	0.00%	0.06%
Private Equity	0.09%	1.00%	-0.91%	-0.07%	-0.03%	-0.01%	-0.11%
Hedge Fund/Absolute Return	-0.54%	1.04%	-1.58%	-0.11%	0.00%	0.00%	-0.10%
Real Estate	4.30%	7.97%	-3.67%	-0.34%	-0.05%	0.04%	-0.35%
Private Real Asset	-2.17%	1.06%	-3.23%	-0.13%	0.04%	0.06%	-0.03%
Public Real Assets	3.36%	3.50%	-0.14%	-0.01%	0.01%	0.00%	0.00%
Cash	0.05%	0.01%	0.04%	0.00%	-0.08%	0.00%	-0.08%
Total	2.86%	3.57%	-0.72%	-0.71%	-0.10%	0.09%	-0.72%

Attribution does not include the impact of the Parametric Minneapolis strategy.
* Interaction Effects include Residual Effects.

Total Fund ex Overlay
Performance Attribution (1 Year)

Period Ending: December 31, 2021

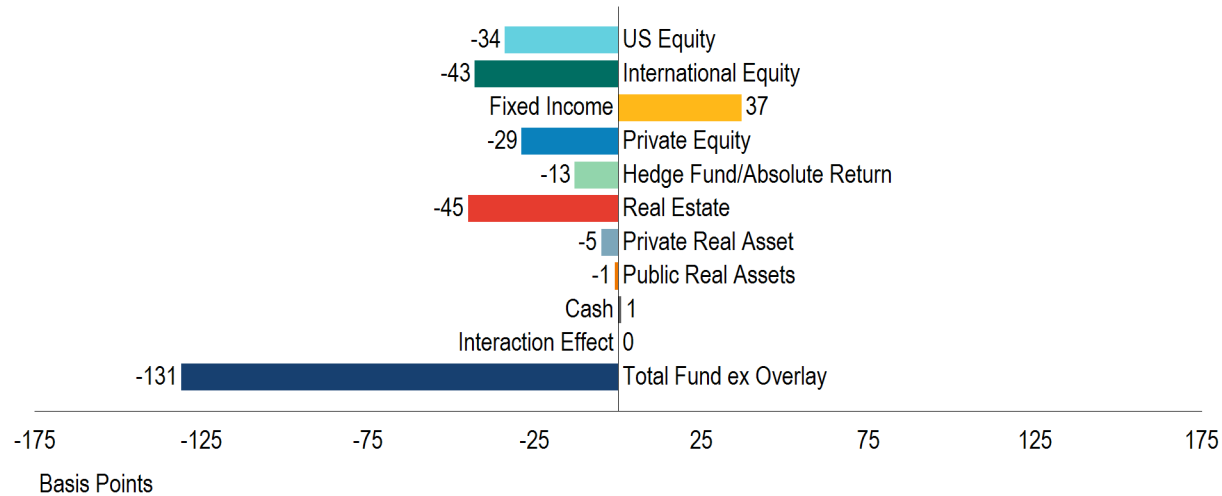


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction*	Total Effects
Public Equity	16.73%	18.83%	-2.10%	-0.83%	0.00%	0.00%	-0.83%
Fixed Income	1.62%	0.41%	1.21%	0.37%	0.00%	0.00%	0.37%
Alternatives	15.83%	17.52%	-1.69%	-0.22%	0.00%	0.00%	-0.22%
Inflation Hedge	18.13%	23.16%	-5.03%	-0.78%	0.00%	0.00%	-0.78%
Cash	0.31%	0.03%	0.27%	0.01%	0.00%	0.00%	0.01%
Total	12.05%	13.49%	-1.44%	-1.44%	0.00%	0.00%	-1.44%

Attribution does not include the impact of the Parametric Minneapolis strategy.
* Interaction Effects include Residual Effects.

Total Fund ex Overlay
Performance Attribution (1 Year)

Period Ending: December 31, 2021



	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction*	Total Effects
US Equity	23.93%	25.66%	-1.73%	-0.34%	0.00%	0.00%	-0.34%
International Equity	9.06%	11.22%	-2.16%	-0.43%	0.00%	0.00%	-0.43%
Fixed Income	1.62%	0.41%	1.21%	0.37%	0.00%	0.00%	0.37%
Private Equity	30.24%	34.87%	-4.64%	-0.29%	0.00%	0.00%	-0.29%
Hedge Fund/Absolute Return	2.18%	4.04%	-1.86%	-0.13%	0.00%	0.00%	-0.13%
Real Estate	16.20%	22.17%	-5.97%	-0.45%	0.00%	0.00%	-0.45%
Private Real Asset	28.70%	28.79%	-0.09%	-0.05%	0.00%	0.00%	-0.05%
Public Real Assets	17.67%	17.78%	-0.11%	-0.01%	0.00%	0.00%	-0.01%
Cash	0.31%	0.03%	0.27%	0.01%	0.00%	0.00%	0.01%
Total	12.04%	13.36%	-1.31%	-1.31%	0.00%	0.00%	-1.31%

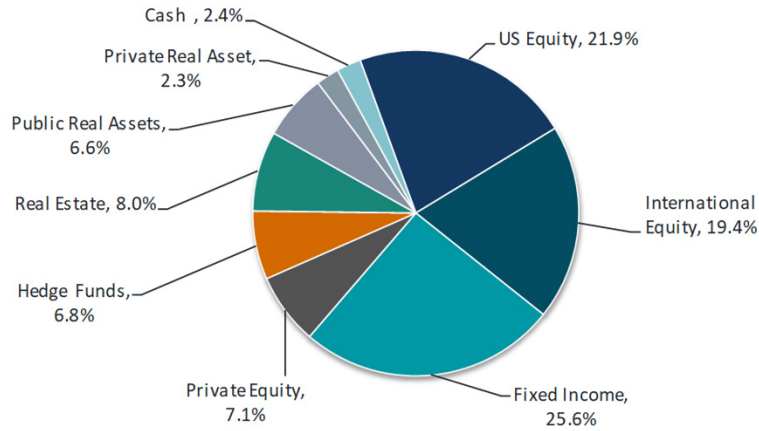
Attribution does not include the impact of the Parametric Minneapolis strategy.
* Interaction Effects include Residual Effects.

Total Fund

Asset Allocation Analysis

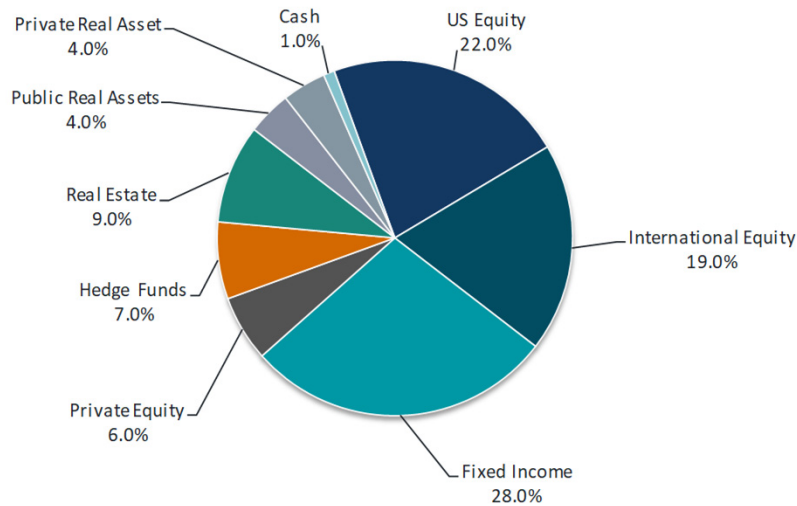
Period Ending: December 31, 2021

Current w/ Overlay



ASSET ALLOCATION	MARKET VALUE W/ OVERLAY	W/ OVERLAY	W/O OVERLAY
US Equity	1,349,427,281	21.9%	21.9%
International Equity	1,198,470,933	19.4%	18.1%
Fixed Income	1,580,776,268	25.6%	25.4%
Private Equity	438,395,279	7.1%	7.1%
Hedge Funds	420,036,191	6.8%	6.8%
Real Estate	491,327,652	8.0%	8.0%
Public Real Assets	407,143,345	6.6%	6.6%
Private Real Asset	140,830,463	2.3%	2.3%
Cash	149,025,425	2.4%	4.0%
TOTAL	6,175,432,836	100.0%	100.0%

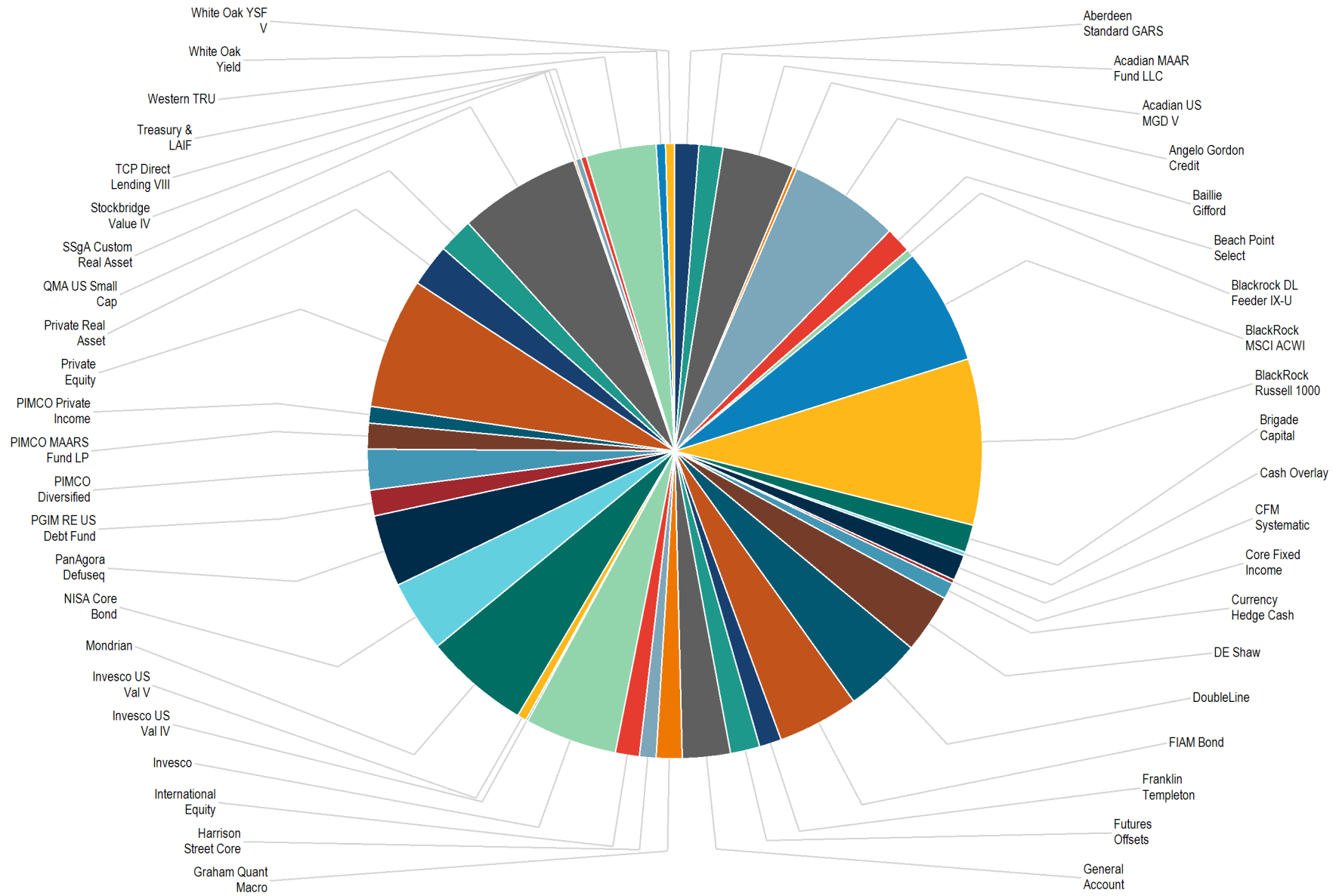
Target



ASSET ALLOCATION	W/ OVERLAY	TARGET	DIFF
US Equity	21.9%	22.0%	-0.1%
International Equity	19.4%	19.0%	0.4%
Fixed Income	25.6%	28.0%	-2.4%
Private Equity	7.1%	6.0%	1.1%
Hedge Funds	6.8%	7.0%	-0.2%
Real Estate	8.0%	9.0%	-1.0%
Public Real Assets	6.6%	4.0%	2.6%
Private Real Asset	2.3%	4.0%	-1.7%
Cash	2.4%	1.0%	1.4%
TOTAL	100.0%	100.0%	0.0%

Total Fund Manager Allocation Analysis

Period Ending: December 31, 2021



Total Fund Manager Allocation Analysis

Period Ending: December 31, 2021

Name	Market Value	% of Portfolio
Acadian US MGD V	\$237,882,827	3.9%
BlackRock Russell 1000	\$554,394,843	9.0%
DE Shaw	\$196,044,056	3.2%
PanAgora Defuseq	\$242,168,342	3.9%
QMA US Small Cap	\$119,888,912	1.9%
Domestic Equity Overlay	-\$951,700	0.0%
Baillie Gifford	\$373,402,990	6.0%
Mondrian	\$354,804,838	5.7%
BlackRock MSCI ACWI EX-US IMI	\$388,661,060	6.3%
Int'l Equity Currency Overlay	\$0	0.0%
International Equity Overlay	\$81,602,045	1.3%
DoubleLine	\$259,478,581	4.2%
FIAM Bond	\$269,979,133	4.4%
NISA Core Bond	\$238,042,598	3.9%
Western TRU	\$232,405,356	3.8%
Core Fixed Income Overlay	\$15,188,234	0.2%
AG CSF Annex Dislocation Fund	\$33,346	0.0%
Angelo Gordon Opportunistic	\$1,049,254	0.0%
Angelo Gordon Credit Solutions	\$14,542,385	0.2%
Beach Point Select	\$87,892,005	1.4%
Brigade Capital	\$90,145,163	1.5%
PIMCO Diversified	\$134,800,684	2.2%
Franklin Templeton	\$75,490,955	1.2%
Blackrock DL Feeder IX-U	\$24,908,783	0.4%
PIMCO Private Income	\$54,503,664	0.9%
TCP Direct Lending VIII	\$20,673,135	0.3%
White Oak Yield	\$32,032,776	0.5%
White Oak YSF V	\$29,610,216	0.5%
Private Equity	\$438,395,279	7.1%

Total Fund
 Manager Allocation Analysis

Period Ending: December 31, 2021

Name	Market Value	% of Portfolio
Aberdeen Standard GARS	\$79,185,575	1.3%
Acadian MAAR Fund LLC	\$82,219,197	1.3%
CFM Systematic Global Macro	\$84,156,125	1.4%
Graham Quant Macro	\$85,490,534	1.4%
PIMCO MAARS Fund LP	\$88,984,760	1.4%
Harrison Street Core Property	\$56,218,913	0.9%
Invesco	\$308,163,518	5.0%
Invesco US Val IV	\$4,434,296	0.1%
Invesco US Val V	\$28,260,966	0.5%
PGIM RE US Debt Fund	\$85,603,902	1.4%
Stockbridge Value IV	\$8,646,057	0.1%
Private Real Asset	\$140,830,463	2.3%
SSgA Custom Real Asset	\$407,143,345	6.6%
General Account	\$158,793,402	2.6%
Treasury & LAIF	\$18,883,491	0.3%
Transition Account	\$249	0.0%
Currency Hedge Cash Overlay	\$54,412,944	0.9%
Cash Overlay	\$12,773,918	0.2%
Futures Offsets (SMCE02001)	-\$95,838,579	-1.6%
Total	\$6,175,432,836	100.0%

Statistics Summary

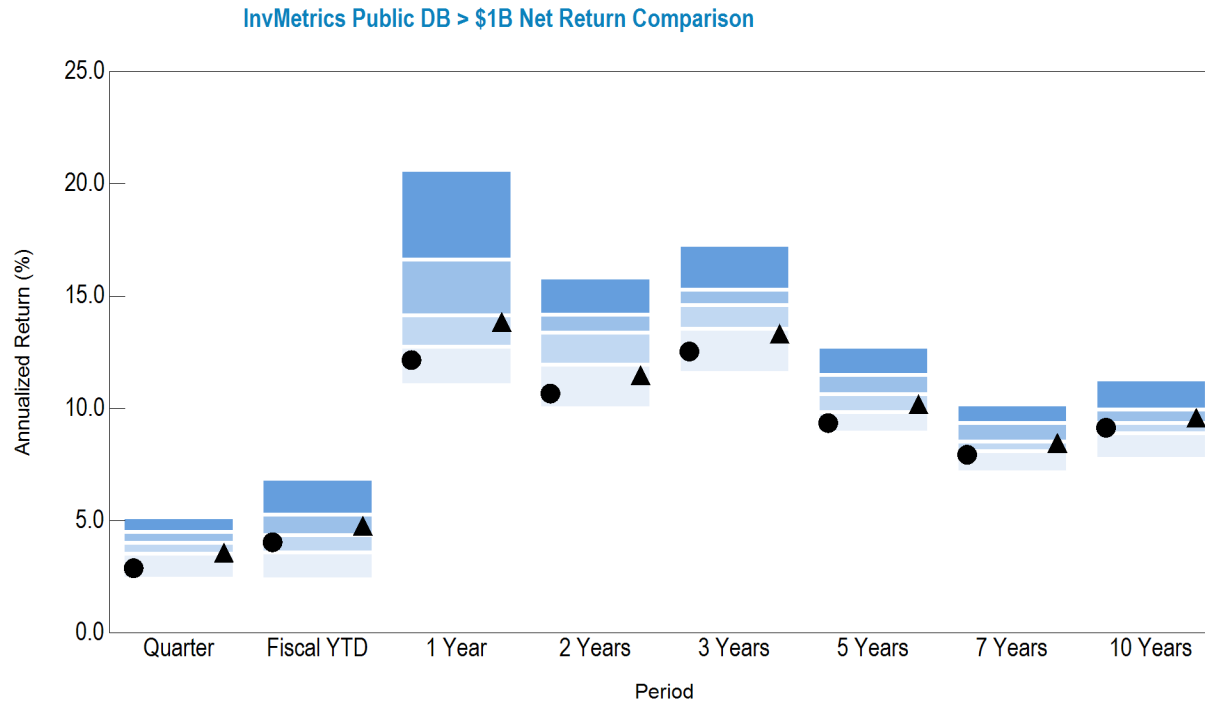
3 Years

	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	12.5%	89	9.0%	29	1.3	62	-0.3	83	2.3%	71
Policy Index	13.3%	83	8.7%	25	1.4	38	--	--	0.0%	1
InvMetrics Public DB > \$1B Net Median	14.6%	--	10.2%	--	1.3	--	0.1	--	1.5%	--

Statistics Summary

5 Years

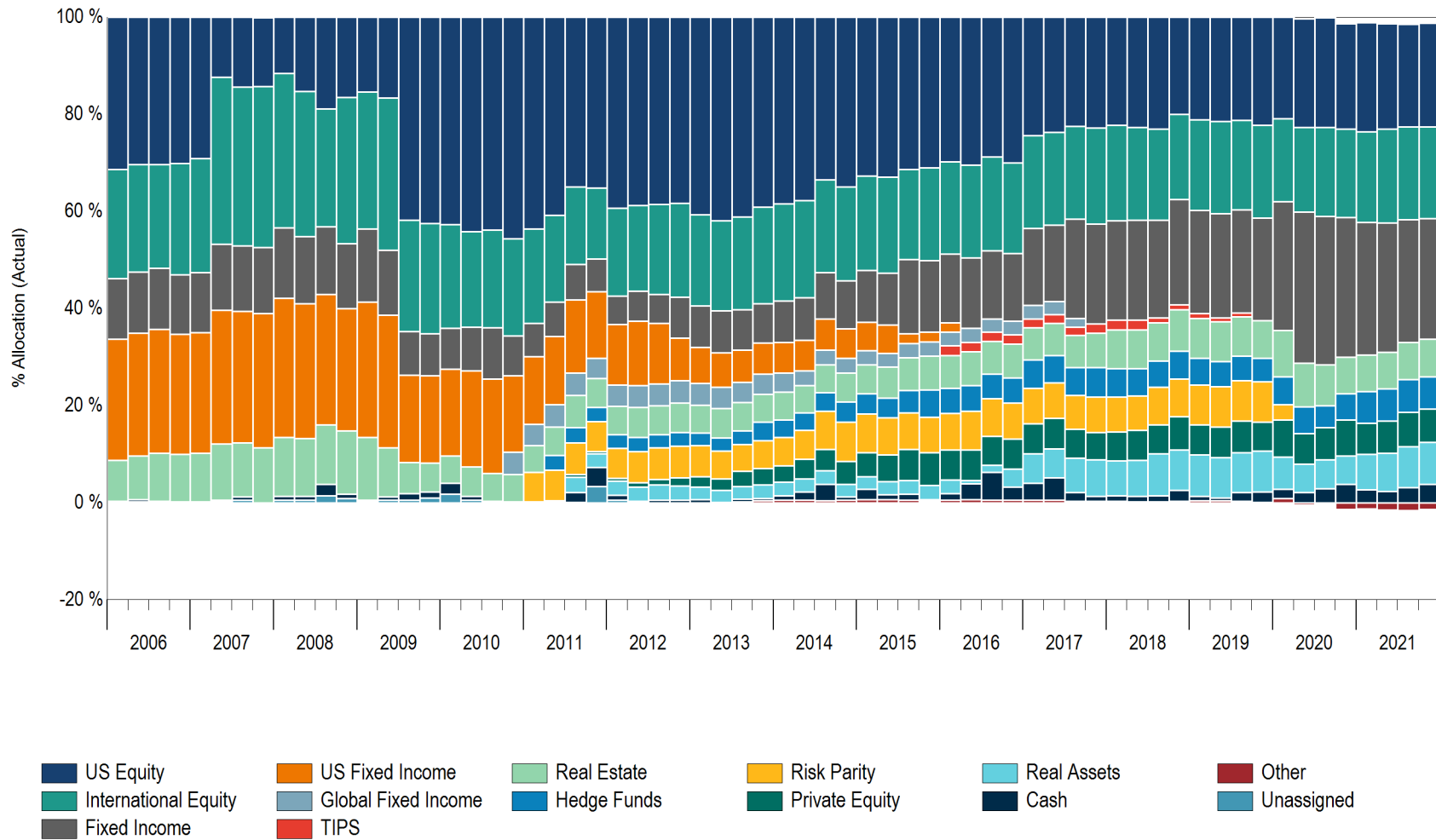
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	9.3%	90	7.8%	27	1.1	51	-0.5	81	1.9%	63
Policy Index	10.2%	68	7.6%	25	1.2	38	--	--	0.0%	1
InvMetrics Public DB > \$1B Net Median	10.7%	--	8.8%	--	1.1	--	0.0	--	1.5%	--



	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
Return (Rank)								
5th Percentile	5.1	6.9	20.6	15.8	17.3	12.7	10.2	11.3
25th Percentile	4.5	5.3	16.7	14.2	15.3	11.5	9.4	10.0
Median	4.0	4.4	14.2	13.4	14.6	10.7	8.5	9.4
75th Percentile	3.5	3.6	12.8	12.0	13.6	9.8	8.1	8.9
95th Percentile	2.4	2.4	11.1	10.0	11.6	8.9	7.2	7.7
# of Portfolios	55	54	54	54	54	54	54	51
● Total Fund	2.9 (88)	4.0 (61)	12.1 (84)	10.7 (91)	12.5 (89)	9.3 (90)	7.9 (83)	9.1 (62)
▲ Policy Index	3.6 (74)	4.8 (41)	13.9 (58)	11.5 (86)	13.3 (83)	10.2 (68)	8.5 (55)	9.6 (48)

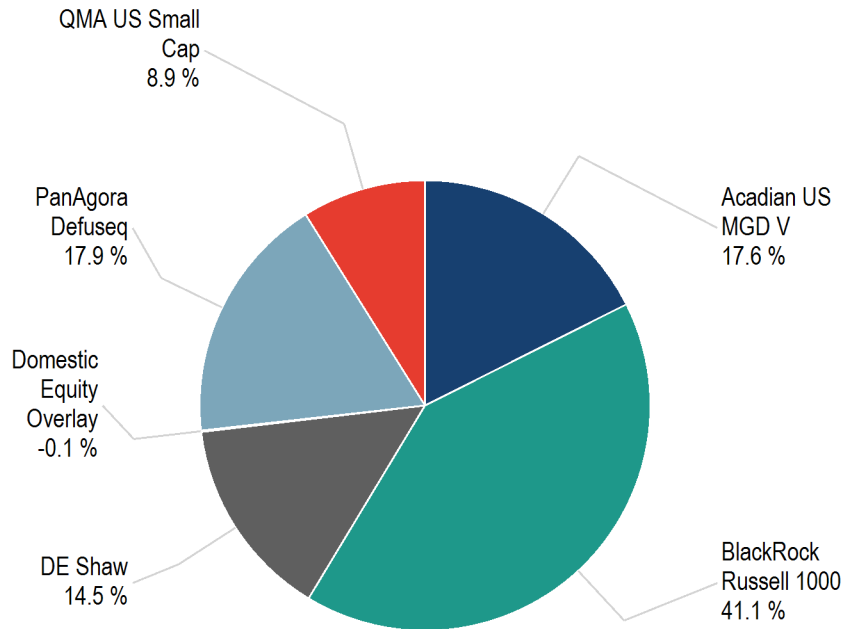
Total Fund
Asset Allocation History

Period Ending: December 31, 2021



US Equity
 Manager Allocation Analysis

Period Ending: December 31, 2021



	Actual \$	Actual %	Manager Contribution to Excess Return %
Acadian US MGD V	\$237,882,827	17.6%	0.3%
BlackRock Russell 1000	\$554,394,843	41.1%	0.0%
DE Shaw	\$196,044,056	14.5%	0.1%
PanAgora Defuseq	\$242,168,342	17.9%	-0.1%
QMA US Small Cap	\$119,888,912	8.9%	0.2%
Domestic Equity Overlay	-\$951,700	-0.1%	0.0%
Actual vs. Policy Weight Difference			-0.2%
Total	\$1,349,427,281	100.0%	0.4%

Statistics Summary

3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
US Equity	22.2%	17.6%	1.2	-1.9	1.9%
Blended US Equity Index	25.8%	18.2%	1.4	--	0.0%
Russell 3000	25.8%	18.2%	1.4	--	0.0%

Statistics Summary

3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Large Cap Equity	22.6%	17.2%	1.3	-1.8	2.0%
Russell 1000	26.2%	18.0%	1.4	--	0.0%
Acadian US MGD V	16.6%	16.2%	1.0	-1.8	5.3%
Russell 1000	26.2%	18.0%	1.4	--	0.0%
BlackRock Russell 1000	26.2%	18.0%	1.4	0.4	0.0%
Russell 1000	26.2%	18.0%	1.4	--	0.0%
DE Shaw	23.0%	18.5%	1.2	-1.2	2.7%
Russell 1000	26.2%	18.0%	1.4	--	0.0%
PanAgora Defuseq	17.8%	16.0%	1.1	-1.2	6.9%
Russell 1000	26.2%	18.0%	1.4	--	0.0%
Small Cap Equity	16.5%	25.5%	0.6	-0.6	5.5%
Russell 2000	20.0%	23.7%	0.8	--	0.0%
QMA US Small Cap	16.5%	25.5%	0.6	-0.6	5.5%
Russell 2000	20.0%	23.7%	0.8	--	0.0%

Statistics Summary

5 Years

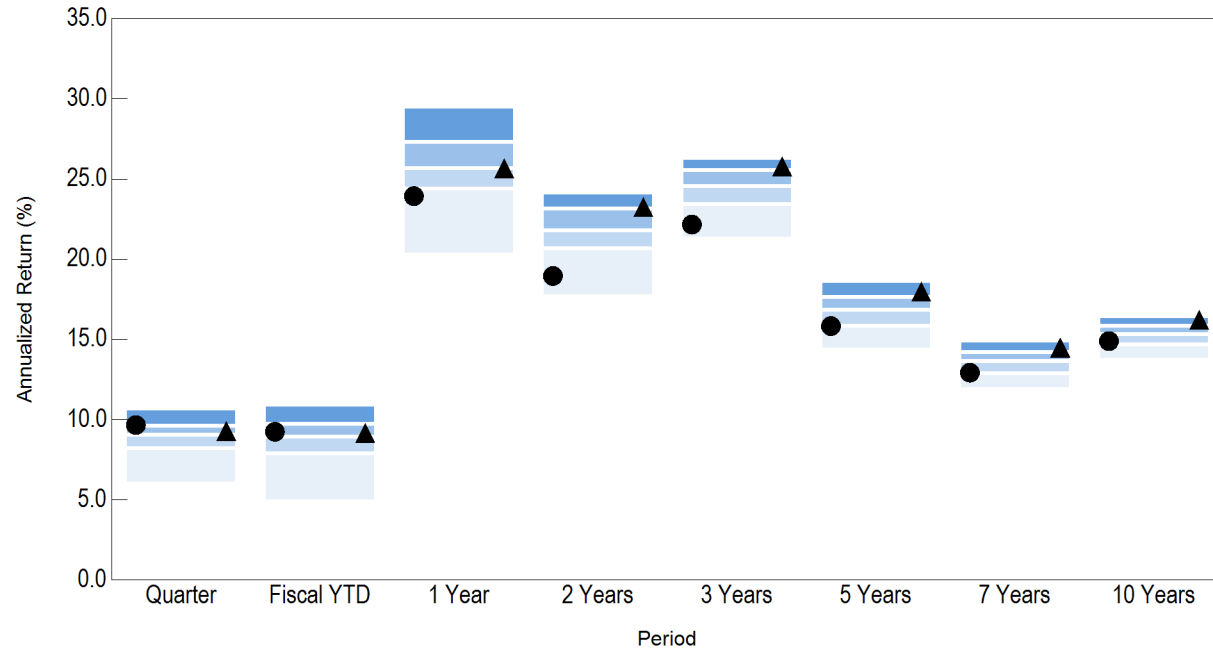
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
US Equity	15.8%	15.5%	1.0	-1.4	1.6%
Blended US Equity Index	18.0%	16.0%	1.1	--	0.0%
Russell 3000	18.0%	16.0%	1.1	--	0.0%

Statistics Summary

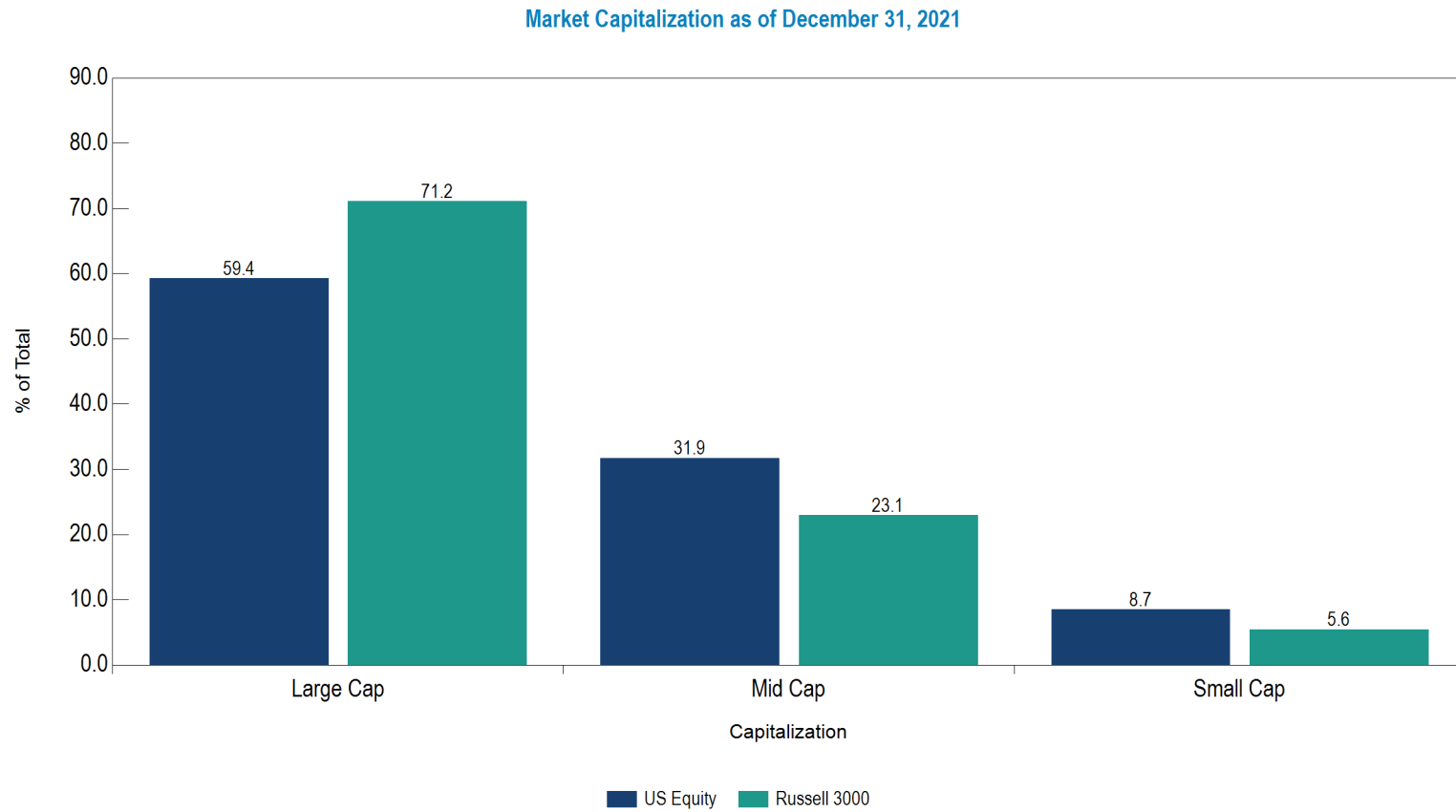
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Large Cap Equity	17.0%	15.1%	1.1	-0.8	1.8%
Russell 1000	18.4%	15.8%	1.1	--	0.0%
DE Shaw	17.2%	15.9%	1.0	-0.5	2.6%
Russell 1000	18.4%	15.8%	1.1	--	0.0%
Small Cap Equity	9.2%	21.7%	0.4	-0.6	4.5%
Russell 2000	12.0%	20.6%	0.5	--	0.0%
QMA US Small Cap	9.2%	21.7%	0.4	-0.6	4.5%
Russell 2000	12.0%	20.6%	0.5	--	0.0%

InvMetrics All DB US Eq Net Return Comparison



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	10.7	10.9	29.5	24.1	26.3	18.6	14.9	16.4
25th Percentile	9.6	9.7	27.4	23.2	25.6	17.7	14.2	15.9
Median	9.1	9.0	25.7	21.8	24.6	16.9	13.7	15.4
75th Percentile	8.2	7.9	24.4	20.7	23.5	15.9	12.9	14.7
95th Percentile	6.0	4.9	20.3	17.7	21.3	14.4	11.9	13.8
# of Portfolios	329	327	326	326	322	312	293	246
● US Equity	9.6 (25)	9.2 (35)	23.9 (80)	19.0 (92)	22.2 (90)	15.8 (77)	12.9 (75)	14.9 (69)
▲ Blended US Equity Index	9.3 (38)	9.2 (40)	25.7 (54)	23.3 (21)	25.8 (14)	18.0 (16)	14.5 (15)	16.2 (10)



See appendix for the market capitalization breakpoints.

Characteristics

	Portfolio	Russell 3000
Number of Holdings	2,942	3,065
Weighted Avg. Market Cap. (\$B)	436.7	568.6
Median Market Cap. (\$B)	4.6	2.8
Price To Earnings	22.7	24.9
Price To Book	4.2	4.5
Price To Sales	2.9	3.4
Return on Equity (%)	23.4	22.9
Yield (%)	1.4	1.3

Top Holdings

MICROSOFT CORP	4.4%
APPLE INC	4.0%
AMAZON.COM INC	2.2%
ALPHABET INC	2.0%
META PLATFORMS INC	1.4%
TESLA INC	1.2%
ALPHABET INC	0.9%
JOHNSON & JOHNSON	0.8%
BERKSHIRE HATHAWAY INC	0.8%
COSTCO WHOLESALE CORP	0.7%

Best Performers

	Return %
ASSERTIO HOLDINGS INC (ASRT)	140.6%
ADICET BIO INC	123.1%
YELLOW CORP (YELL)	122.8%
R.R. DONNELLEY & SONS CO (RRD)	119.1%
CHEMOCENTRYX INC (CCXI)	112.9%
TRICIDA INC (TCDA)	106.0%
XENON PHARMACEUTICALS INC (XENE)	104.4%
IRHYTHM TECHNOLOGIES INC (IRTC)	101.0%
KEZAR LIFE SCIENCES INC (KZR)	93.5%
PROTAGONIST THERAPEUTICS INC (PTGX)	93.0%

Worst Performers

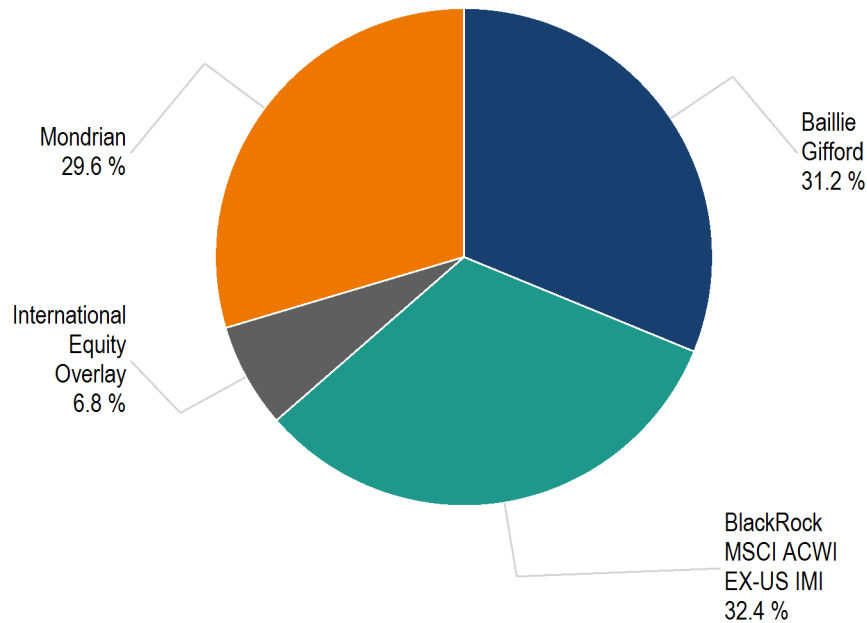
	Return %
CORTEXIME INC (CRTX)	-86.2%
RAFAEL HOLDINGS INC (RFL)	-83.4%
EXICURE INC (XCUR)	-83.2%
ADAGIO THERAPEUTICS INC	-82.8%
CATALYST BIOSCIENCES INC (CBIO)	-77.8%
IronNet Inc (IRNT)	-75.4%
ATEA PHARMACEUTICALS INC (AVIR)	-74.5%
EROS STX GLOBAL CORP (ESGC)	-73.9%
REATA PHARMACEUTICALS INC (RETA)	-73.8%
GENERATION BIO CO (GBIO)	-71.8%

US Equity Performance Attribution vs. Russell 3000

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.1%	-0.1%	0.0%	0.0%	4.1%	6.6%	3.2%	2.4%			
Materials	0.1%	0.0%	0.1%	0.0%	13.3%	13.5%	4.7%	2.4%			
Industrials	0.2%	0.2%	0.0%	0.0%	10.5%	8.3%	8.9%	9.1%			
Consumer Discretionary	-0.1%	-0.1%	0.0%	0.0%	9.4%	10.1%	11.3%	12.1%			
Consumer Staples	0.1%	0.0%	0.1%	0.0%	12.3%	12.5%	8.3%	5.3%			
Health Care	-0.1%	-0.1%	0.0%	0.0%	7.2%	7.6%	14.9%	13.7%			
Financials	0.3%	0.3%	0.1%	-0.1%	7.1%	5.0%	9.4%	11.9%			
Information Technology	-0.2%	0.1%	-0.2%	0.0%	14.3%	14.0%	21.9%	27.2%			
Communication Services	-0.1%	-0.1%	0.0%	0.0%	-1.4%	-0.8%	10.5%	10.2%			
Utilities	0.0%	0.0%	0.1%	0.0%	12.0%	13.1%	3.7%	2.4%			
Real Estate	0.0%	0.0%	0.0%	0.0%	14.8%	14.9%	3.0%	3.4%			
Cash	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.1%	0.0%			
Unclassified	0.0%	0.0%	0.0%	0.0%	10.1%	--	0.1%	0.0%			
Portfolio	0.1%	=	0.2%	+	0.0%	+	-0.1%	9.4%	9.3%	100.0%	100.0%

U.S. Effective Style Map





	Actual \$	Actual %	Manager Contribution to Excess Return %
Baillie Gifford	\$373,402,990	31.2%	-0.2%
Mondrian	\$354,804,838	29.6%	-0.4%
BlackRock MSCI ACWI EX-US IMI	\$388,661,060	32.4%	0.0%
International Equity Overlay	\$81,602,045	6.8%	0.0%
Actual vs. Policy Weight Difference			0.0%
Total	\$1,198,470,933	100.0%	-0.6%

Statistics Summary

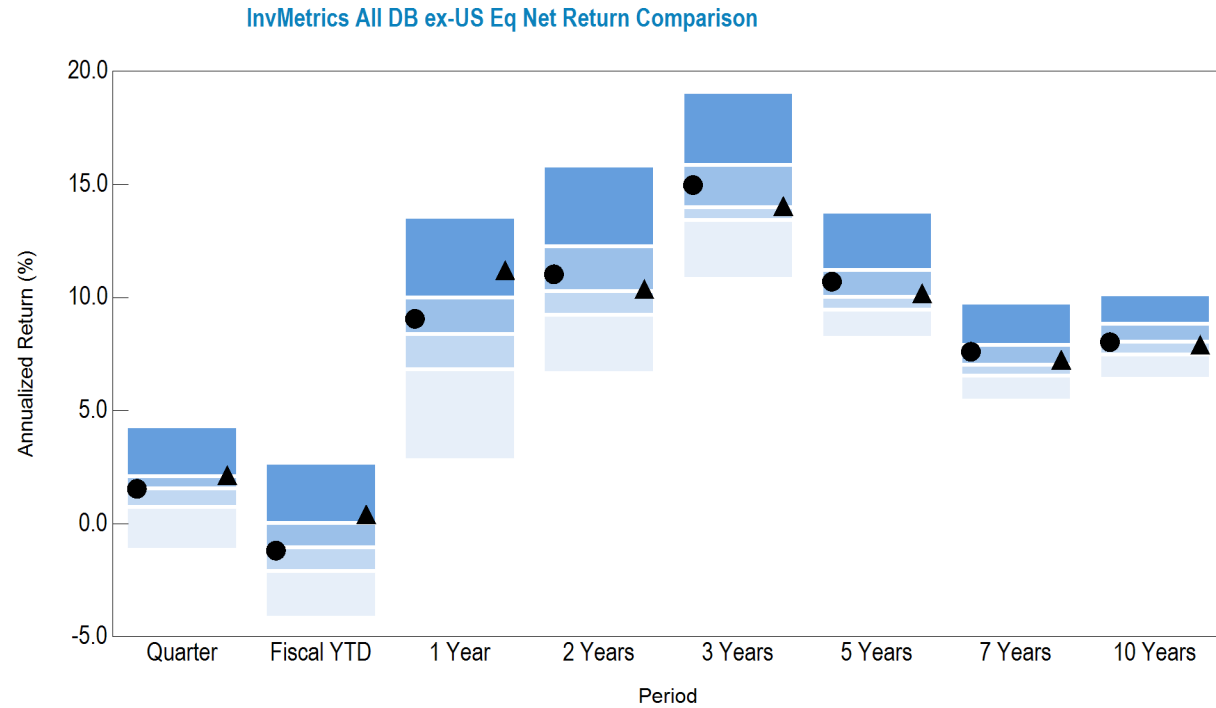
3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
International Equity	15.0%	15.8%	0.9	0.6	1.6%
Blended International Equity Index	14.0%	15.9%	0.8	--	0.0%
Baillie Gifford	22.8%	17.0%	1.3	1.5	6.0%
MSCI ACWI ex US	13.7%	17.0%	0.8	--	0.0%
Mondrian	8.4%	18.9%	0.4	-0.2	2.7%
MSCI ACWI ex USA Value Gross	8.9%	19.8%	0.4	--	0.0%

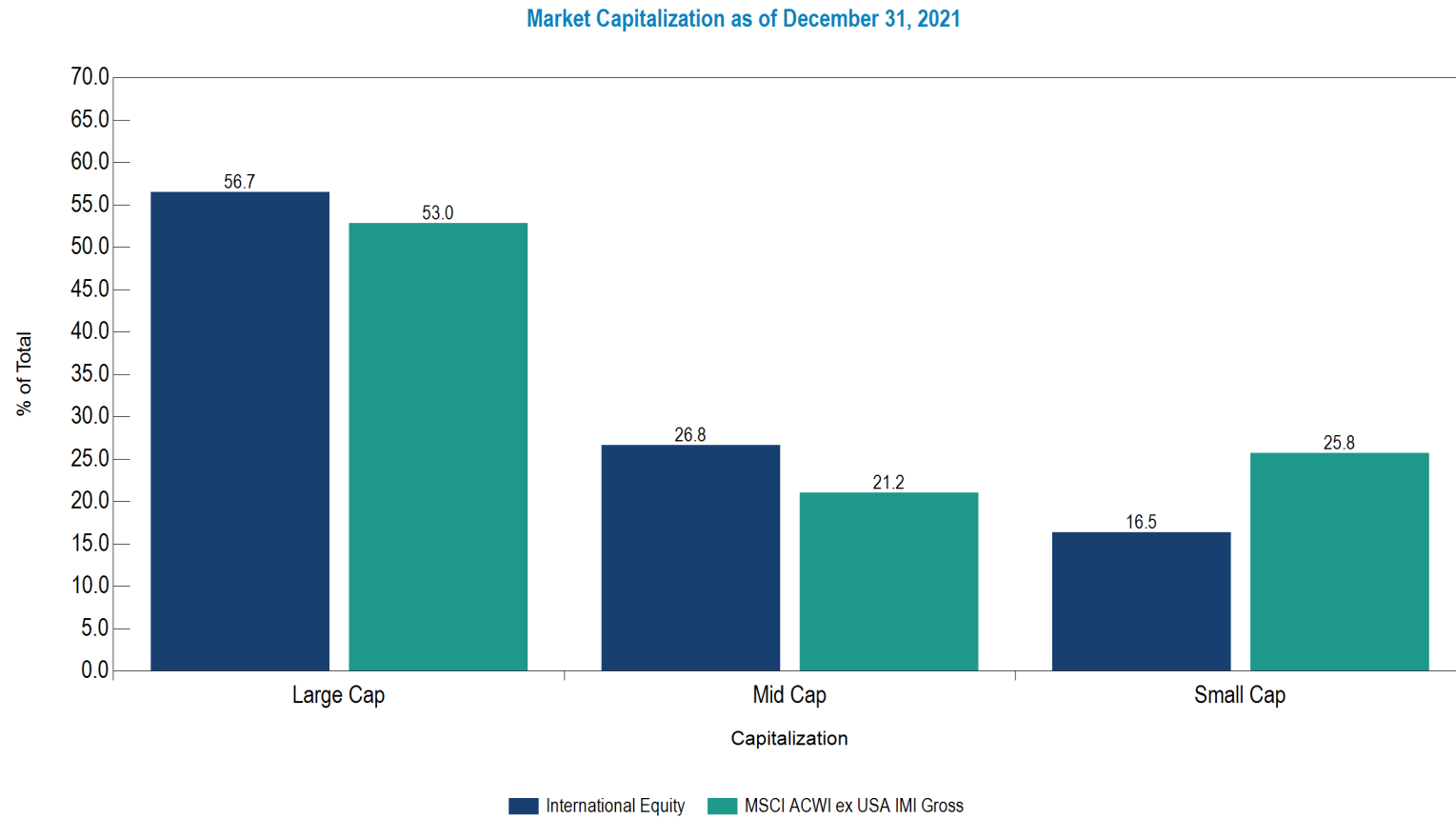
Statistics Summary

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
International Equity	10.7%	14.0%	0.7	0.3	1.5%
Blended International Equity Index	10.2%	14.0%	0.6	--	0.0%
Baillie Gifford	15.2%	15.5%	0.9	0.9	5.6%
MSCI ACWI ex US	10.1%	14.8%	0.6	--	0.0%
Mondrian	6.6%	16.0%	0.3	0.0	3.0%
MSCI ACWI ex USA Value Gross	6.6%	16.8%	0.3	--	0.0%



	Return (Rank)							
	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	4.3	2.7	13.6	15.8	19.1	13.8	9.7	10.1
25th Percentile	2.1	0.1	10.0	12.3	15.9	11.2	7.9	8.8
Median	1.6	-1.0	8.4	10.3	14.0	10.0	7.1	8.0
75th Percentile	0.8	-2.1	6.8	9.2	13.4	9.5	6.6	7.5
95th Percentile	-1.1	-4.1	2.8	6.7	10.8	8.2	5.5	6.4
# of Portfolios	219	218	216	214	213	203	191	159
● International Equity	1.5 (53)	-1.2 (55)	9.1 (36)	11.0 (39)	15.0 (37)	10.7 (36)	7.6 (32)	8.0 (52)
▲ Blended International Equity Index	2.1 (20)	0.4 (20)	11.2 (12)	10.4 (49)	14.0 (50)	10.2 (46)	7.3 (43)	7.9 (55)



See appendix for the market capitalization breakpoints.

Characteristics

	Portfolio	MSCI ACWI ex USA IMI Gross
Number of Holdings	6,735	6,706
Weighted Avg. Market Cap. (\$B)	85.0	85.0
Median Market Cap. (\$B)	2.1	2.0
Price To Earnings	16.0	15.3
Price To Book	2.9	2.7
Price To Sales	1.5	1.5
Return on Equity (%)	14.4	14.0
Yield (%)	2.3	2.6

Top Holdings

ASML HOLDING NV	1.5%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.4%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.2%
UNITED OVERSEAS BANK LTD	1.2%
HOUSING DEVELOPMENT FINANCE CORP LTD	1.0%
SANOFI	1.0%
NIBE INDUSTRIER AB, MARKARYD	1.0%
SONY GROUP CORPORATION	1.0%
SARTORIUS SHS.PREF.	0.9%
NOVARTIS AG	0.9%

Best Performers

	Return %
TATA TELESERVICES (MAHARASHTRA) LTD	481.1%
PHARMAESSENTIA CORP	232.2%
BRIGHTCOM GROUP LTD	204.8%
DUBAI FINANCIAL MARKET PJSC	173.1%
COWELL E HOLDINGS INC	168.8%
VIDENTE CO LTD	163.6%
WEMADE ENTERTAINMENT (KO:WEM)	152.2%
ILDONG PHARMACEUTICAL CO LTD	139.9%
SKYWORTH GROUP LTD	133.0%
AVZ MINERALS LTD	132.2%

Worst Performers

	Return %
CMBC CAPITAL HOKDING LTD	-96.9%
CA CULTURAL TECHNOLOGY GRP LTD	-83.5%
ONCOPEPTIDES AB	-80.6%
ATA IMS BERHAD	-76.5%
QUTOUTIAO INC (QTT)	-71.9%
BEYONDSRING INC (BYSI)	-71.3%
SHIMAO SERVICES HOLDINGS LTD	-66.4%
COMMON STOCK HKD.01	-66.4%
CHINA AOYUAN GROUP LTD	-65.7%
RISKIFIED LTD COM NPV CL A	-65.5%
17 EDUCATION TECHNOLOGY GR ADR USD.0001	-65.3%

International Equity Performance Attribution vs. MSCI ACWI ex USA IMI Gross

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.0%	0.0%	0.0%	0.0%	-0.7%	-0.3%	4.0%	4.6%			
Materials	-0.1%	-0.2%	-0.1%	0.1%	1.3%	3.5%	5.3%	8.4%			
Industrials	0.2%	0.2%	0.0%	0.0%	3.7%	2.1%	13.6%	13.6%			
Consumer Discretionary	-0.5%	-0.3%	-0.1%	-0.1%	-3.4%	-1.1%	16.6%	12.5%			
Consumer Staples	0.0%	0.0%	0.0%	0.0%	2.3%	2.5%	7.3%	8.1%			
Health Care	0.1%	0.1%	0.0%	0.0%	0.4%	-0.4%	9.9%	9.2%			
Financials	-0.2%	-0.3%	0.0%	0.1%	0.1%	1.6%	14.0%	18.0%			
Information Technology	-0.2%	-0.2%	0.1%	-0.1%	3.7%	5.4%	15.4%	13.0%			
Communication Services	0.1%	0.1%	-0.1%	0.0%	0.1%	-2.1%	8.1%	5.9%			
Utilities	0.0%	0.0%	0.0%	0.0%	7.0%	6.1%	3.2%	3.1%			
Real Estate	0.1%	0.0%	0.0%	0.0%	1.2%	0.3%	1.5%	3.6%			
Cash	0.0%	0.0%	0.0%	0.0%	0.0%	--	1.0%	0.0%			
Unclassified	0.0%	--	--	--	--	--	0.0%	0.0%			
Portfolio	-0.6%	=	-0.5%	+	-0.1%	+	0.0%	1.0%	1.7%	100.0%	100.0%

Int'l Equity Performance Attribution vs. MSCI ACWI ex USA IMI Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	3.3%	4.4%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Belgium	2.4%	3.4%	0.2%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Czech Republic*	12.4%	12.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Denmark	-0.3%	5.2%	0.9%	1.6%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Finland	2.4%	3.3%	0.7%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
France	7.5%	6.8%	5.7%	6.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Germany	-2.5%	0.6%	4.6%	5.4%	-0.2%	0.0%	0.0%	0.0%	-0.1%
Greece*	0.7%	0.5%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Hungary*	-9.9%	-9.9%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Ireland	4.5%	0.1%	0.2%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Italy	5.2%	4.9%	2.1%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Luxembourg	3.4%	1.7%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Netherlands	5.5%	3.5%	3.7%	2.9%	0.0%	0.0%	0.0%	0.0%	0.1%
Norway	3.4%	2.3%	0.2%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Poland*	0.0%	-2.5%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Portugal	13.4%	1.1%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Russia*	-5.8%	-8.0%	0.5%	0.9%	0.0%	0.0%	0.0%	0.0%	0.1%
Spain	-2.5%	-1.1%	2.0%	1.5%	0.0%	0.0%	0.0%	0.0%	-0.1%
Sweden	11.0%	6.8%	2.9%	2.7%	0.1%	0.0%	0.0%	0.0%	0.1%
Switzerland	16.4%	12.2%	3.1%	5.7%	0.2%	-0.2%	-0.1%	-0.1%	-0.1%
United Kingdom	5.1%	4.7%	12.5%	9.5%	0.0%	0.1%	0.0%	0.0%	0.1%

Int'l Equity Performance Attribution vs. MSCI ACWI ex USA IMI Gross

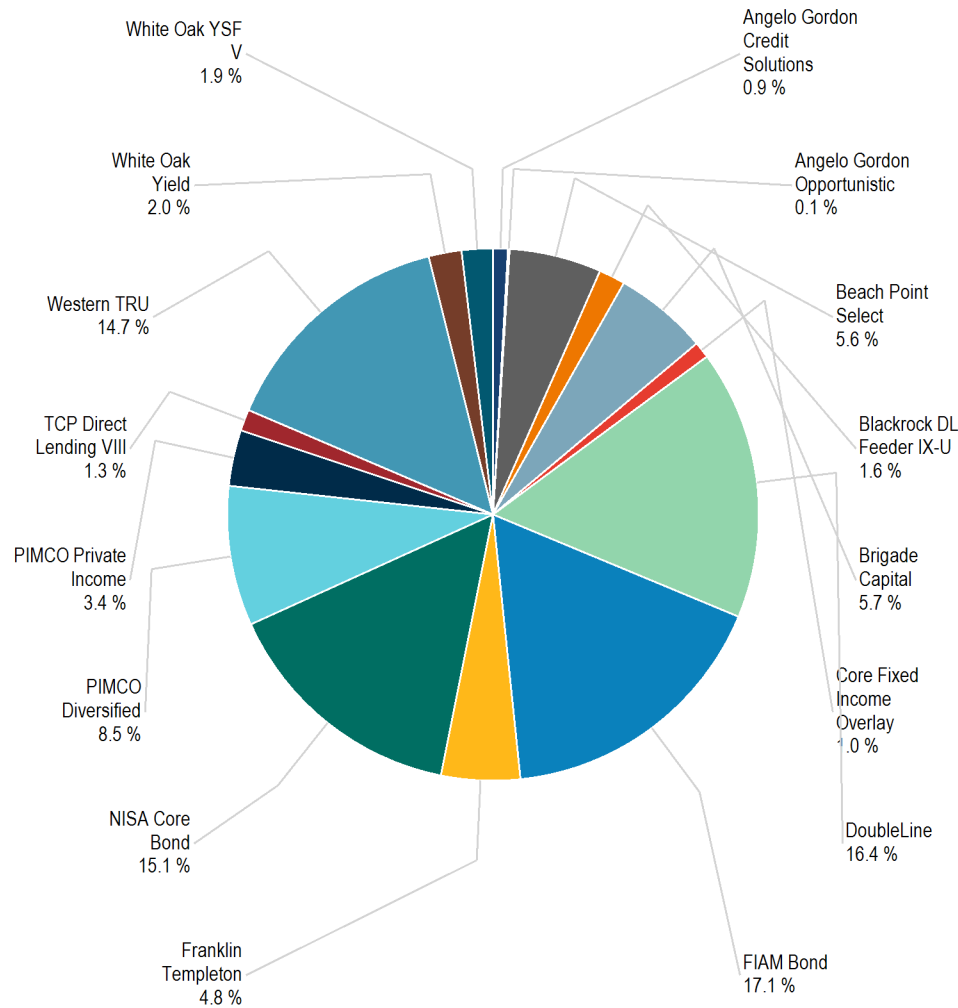
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
AsiaPacific									
Australia	1.7%	2.7%	2.1%	4.7%	0.0%	0.0%	0.0%	0.0%	0.0%
China*	-5.6%	-6.1%	8.7%	8.9%	0.0%	0.0%	0.0%	0.0%	0.1%
Hong Kong	-6.5%	-3.7%	4.1%	1.8%	-0.1%	-0.1%	0.0%	-0.1%	-0.3%
India*	-1.1%	0.0%	4.4%	3.8%	0.0%	0.0%	0.0%	0.0%	-0.1%
Indonesia*	6.4%	5.3%	0.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Japan	-4.8%	-4.7%	20.1%	16.0%	0.0%	-0.2%	-0.1%	0.0%	-0.3%
Korea*	-2.2%	-1.7%	3.0%	3.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Malaysia*	2.3%	0.8%	0.2%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
New Zealand	1.3%	-3.6%	0.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Pakistan*	-3.3%	-2.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Philippines*	3.5%	3.6%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Singapore	3.7%	-0.2%	1.5%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Taiwan*	7.6%	9.1%	4.6%	4.5%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Thailand*	2.7%	3.6%	0.3%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Americas									
Argentina*	-19.6%	4.6%	0.6%	0.1%	0.0%	0.0%	0.0%	-0.1%	-0.1%
Brazil*	-4.6%	-6.7%	1.3%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Canada	5.5%	6.4%	3.8%	7.0%	-0.1%	-0.1%	0.0%	0.0%	-0.2%
Chile*	-5.8%	-5.9%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Colombia*	-2.1%	-2.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Mexico*	6.6%	5.4%	0.5%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Peru*	8.3%	11.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
United States	22.2%	10.0%	0.8%	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%

Int'l Equity Performance Attribution vs. MSCI ACWI ex USA IMI Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Other									
Egypt*	17.5%	17.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Israel	10.1%	10.3%	0.2%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Kuwait*	2.0%	2.1%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Qatar*	3.2%	3.1%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Saudi Arabia*	-0.8%	-0.8%	0.3%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%
South Africa*	-3.6%	-0.5%	0.8%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Turkey*	-12.1%	-12.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
United Arab Emirates*	11.6%	11.4%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Totals									
Americas	3.4%	4.2%	6.9%	9.1%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Europe	5.2%	4.9%	40.5%	41.4%	0.2%	0.0%	0.0%	0.0%	0.1%
Asia/Pacific	-2.7%	-1.8%	49.9%	46.1%	-0.3%	-0.1%	-0.1%	0.0%	-0.6%
Other	0.2%	2.5%	1.6%	3.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Cash	0.0%	--	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	1.0%	1.7%	100.0%	100.0%	-0.3%	-0.3%	-0.1%	0.0%	-0.6%
Totals									
Developed	1.9%	2.7%	72.9%	71.2%	-0.4%	0.0%	-0.2%	0.0%	-0.6%
Emerging*	-1.5%	-1.0%	26.0%	28.8%	-0.2%	0.1%	0.1%	0.0%	-0.1%
Cash	0.0%	--	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Fixed Income Manager Allocation Analysis

Period Ending: December 31, 2021



	Actual \$	Actual %	Manager Contribution to Excess Return %
AG CSF Annex Dislocation Fund	\$33,346	0.0%	0.0%
Angelo Gordon Credit Solutions	\$14,542,385	0.9%	0.0%
Angelo Gordon Opportunistic	\$1,049,254	0.1%	0.0%
Beach Point Select	\$87,892,005	5.6%	0.2%
Blackrock DL Feeder IX-U	\$24,908,783	1.6%	0.0%
Brigade Capital	\$90,145,163	5.7%	0.1%
DoubleLine	\$259,478,581	16.4%	-0.1%
FIAM Bond	\$269,979,133	17.1%	0.0%
Franklin Templeton	\$75,490,955	4.8%	0.0%
NISA Core Bond	\$238,042,598	15.1%	0.0%
PIMCO Diversified	\$134,800,684	8.5%	0.0%
PIMCO Private Income	\$54,503,664	3.4%	0.0%
TCP Direct Lending VIII	\$20,673,135	1.3%	0.0%
Western TRU	\$232,405,356	14.7%	-0.2%
White Oak Yield	\$32,032,776	2.0%	-0.1%
White Oak YSF V	\$29,610,216	1.9%	-0.1%
Core Fixed Income Overlay	\$15,188,234	1.0%	0.0%
Actual vs. Policy Weight Difference			0.0%
Total	\$1,580,776,268	100.0%	0.0%

Statistics Summary

3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Fixed Income	5.6%	3.5%	1.4	-0.2	1.8%
Blended Fixed Income Index	6.0%	4.1%	1.3	--	0.0%
Core Fixed	4.8%	3.0%	1.3	0.0	1.4%
Bloomberg US Aggregate TR	4.8%	3.4%	1.2	--	0.0%
FIAM Bond	6.1%	3.9%	1.3	0.9	1.5%
Bloomberg US Aggregate TR	4.8%	3.4%	1.2	--	0.0%
Western TRU	4.5%	6.4%	0.6	0.5	6.4%
3-Month Libor Total Return USD	1.0%	0.3%	0.6	--	0.0%
Opportunistic Credit	7.2%	6.6%	1.0	-0.4	4.3%
Bloomberg BA Intermediate HY	8.7%	7.9%	1.0	--	0.0%
Angelo Gordon Opportunistic	13.0%	20.2%	0.6	0.4	20.5%
Bloomberg US Aggregate TR	4.8%	3.4%	1.2	--	0.0%
Beach Point Select	12.8%	8.6%	1.4	0.8	5.2%
Bloomberg BA Intermediate HY	8.7%	7.9%	1.0	--	0.0%
Brigade Capital	9.0%	12.0%	0.7	0.0	7.1%
Bloomberg BA Intermediate HY	8.7%	7.9%	1.0	--	0.0%
PIMCO Diversified	6.4%	6.9%	0.8	-0.3	1.2%
Blended PIMCO Diversified Index	6.8%	7.7%	0.8	--	0.0%
Franklin Templeton	-3.0%	5.7%	-0.7	-1.1	6.3%
Bloomberg Multiverse TR	3.7%	4.6%	0.6	--	0.0%

Statistics Summary

3 Years

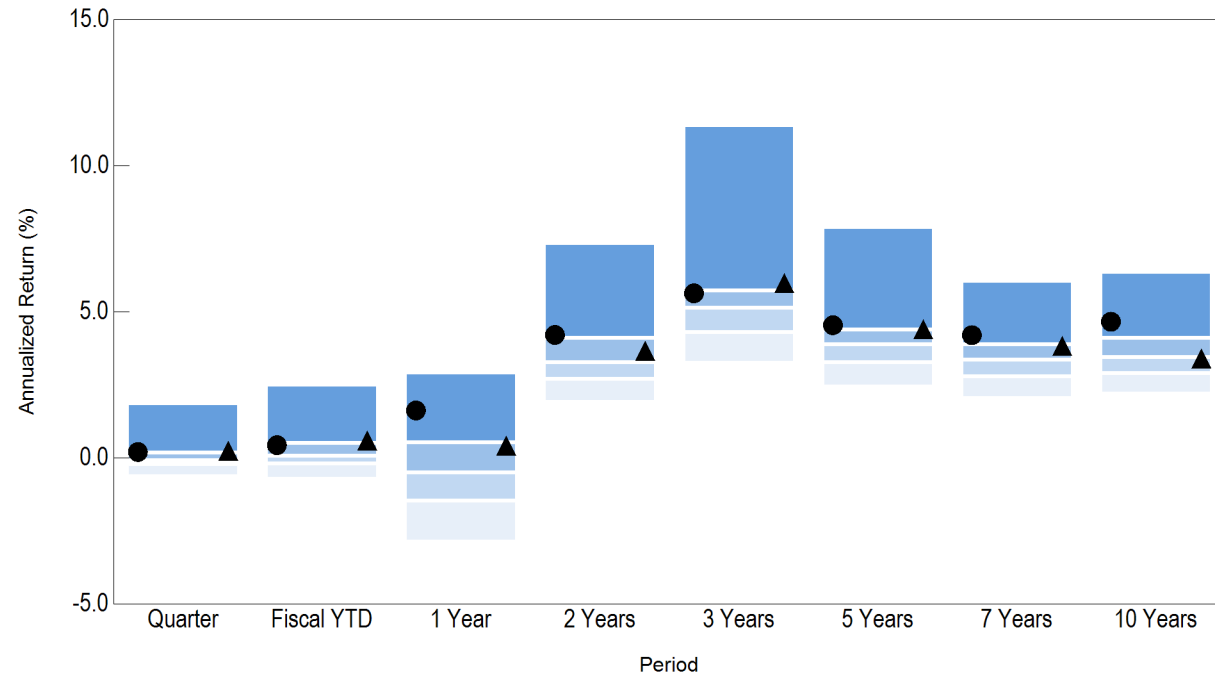
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Private Credit	7.1%	4.2%	1.5	-0.8	2.7%
Cliffwater Direct Lending Index	9.2%	5.9%	1.4	--	0.0%
TCP Direct Lending VIII	6.8%	3.0%	2.0	-0.5	4.9%
Cliffwater Direct Lending Index	9.2%	5.9%	1.4	--	0.0%
White Oak Yield	5.5%	2.9%	1.6	-1.0	3.8%
Cliffwater Direct Lending Index	9.2%	5.9%	1.4	--	0.0%

Statistics Summary

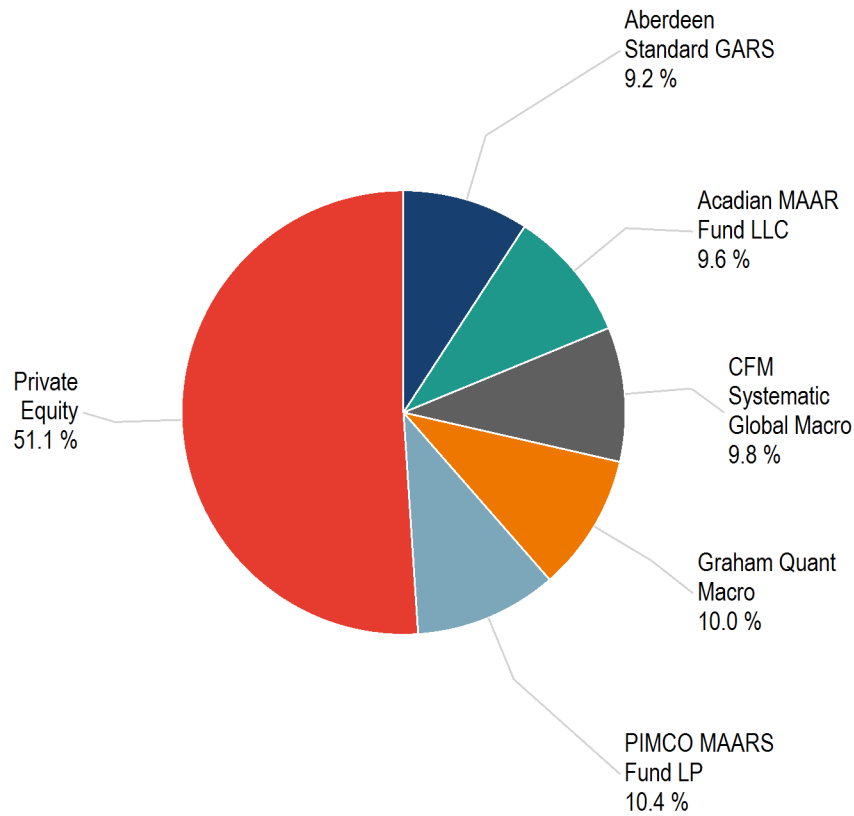
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Fixed Income	4.5%	2.9%	1.2	0.1	1.6%
Blended Fixed Income Index	4.4%	3.4%	1.0	--	0.0%
Core Fixed	3.7%	2.6%	1.0	0.1	1.2%
Bloomberg US Aggregate TR	3.6%	3.1%	0.8	--	0.0%
FIAM Bond	4.4%	3.4%	1.0	0.7	1.2%
Bloomberg US Aggregate TR	3.6%	3.1%	0.8	--	0.0%
Western TRU	3.8%	5.4%	0.5	0.4	5.4%
3-Month Libor Total Return USD	1.4%	0.3%	1.0	--	0.0%
Opportunistic Credit	6.3%	5.3%	1.0	0.1	3.6%
Bloomberg BA Intermediate HY	6.0%	6.3%	0.8	--	0.0%
Angelo Gordon Opportunistic	15.5%	16.8%	0.9	0.7	17.1%
Bloomberg US Aggregate TR	3.6%	3.1%	0.8	--	0.0%
Beach Point Select	9.5%	7.0%	1.2	0.8	4.3%
Bloomberg BA Intermediate HY	6.0%	6.3%	0.8	--	0.0%
Brigade Capital	6.6%	9.5%	0.6	0.1	5.7%
Bloomberg BA Intermediate HY	6.0%	6.3%	0.8	--	0.0%
Franklin Templeton	-1.0%	6.0%	-0.3	-0.7	6.7%
Bloomberg Multiverse TR	3.4%	4.1%	0.6	--	0.0%
Private Credit	7.1%	3.5%	1.7	-0.6	3.0%
Cliffwater Direct Lending Index	8.8%	5.0%	1.5	--	0.0%
TCP Direct Lending VIII	7.0%	2.5%	2.3	-0.4	4.6%
Cliffwater Direct Lending Index	8.8%	5.0%	1.5	--	0.0%

InvMetrics All DB Total Fix Inc Net Return Comparison



	Quarter	Fiscal YTD	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	1.9	2.5	2.9	7.3	11.4	7.9	6.0	6.4
25th Percentile	0.2	0.5	0.5	4.1	5.7	4.4	3.9	4.1
Median	-0.1	0.1	-0.5	3.3	5.1	3.9	3.4	3.4
75th Percentile	-0.2	-0.2	-1.5	2.7	4.3	3.3	2.8	2.9
95th Percentile	-0.6	-0.7	-2.9	1.9	3.3	2.5	2.0	2.2
# of Portfolios	178	177	177	177	175	169	156	136
● Fixed Income	0.2 (24)	0.4 (28)	1.6 (14)	4.2 (24)	5.6 (30)	4.5 (22)	4.2 (18)	4.7 (16)
▲ Blended Fixed Income Index	0.2 (23)	0.6 (21)	0.4 (28)	3.7 (35)	6.0 (23)	4.4 (26)	3.8 (29)	3.4 (54)



	Actual \$	Actual %	Manager Contribution to Excess Return %
Aberdeen Standard GARS	\$79,185,575	9.2%	0.1%
Acadian MAAR Fund LLC	\$82,219,197	9.6%	-0.2%
CFM Systematic Global Macro	\$84,156,125	9.8%	-0.7%
Graham Quant Macro	\$85,490,534	10.0%	-0.3%
PIMCO MAARS Fund LP	\$88,984,760	10.4%	0.4%
Private Equity	\$438,395,279	51.1%	-0.5%
Actual vs. Policy Weight Difference			0.0%
Total	\$858,431,470	100.0%	-1.3%

Statistics Summary

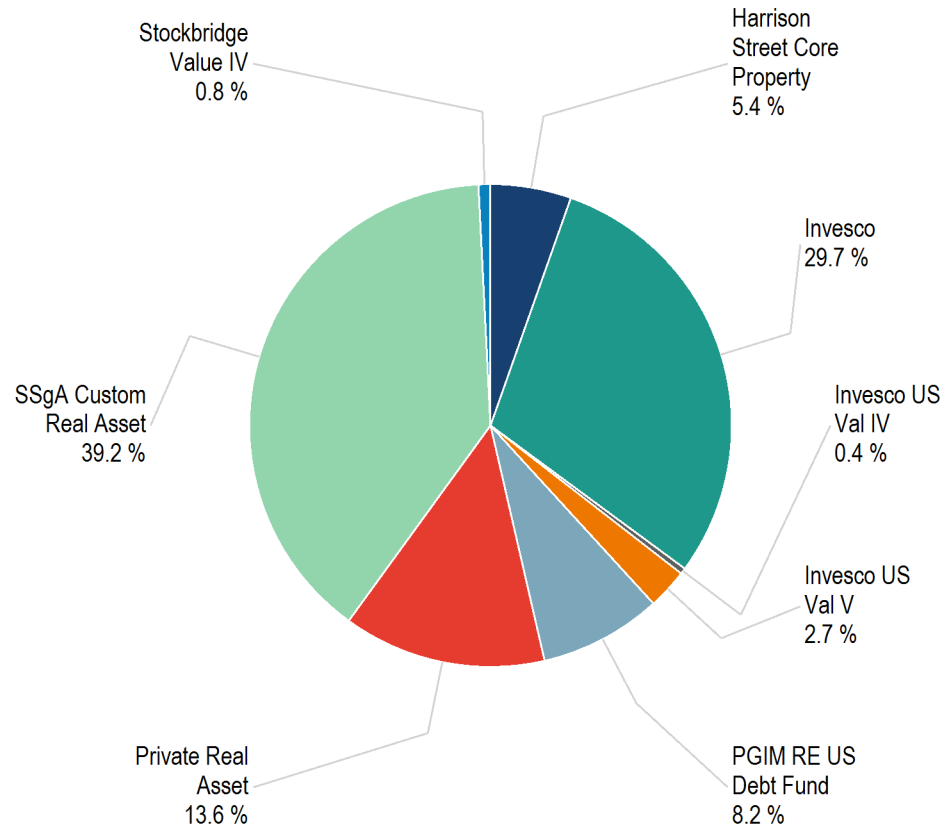
3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Alternatives	18.0%	15.1%	1.1	0.4	14.9%
Blended Alternatives Index	11.9%	9.4%	1.2	--	0.0%
Private Equity	37.3%	25.7%	1.4	0.7	25.9%
Blended Private Equity Index	19.0%	19.0%	1.0	--	0.0%
Hedge Fund/Absolute Return	-2.6%	6.7%	-0.5	-1.1	6.7%
Absolute Return Custom Index	4.9%	0.3%	13.9	--	0.0%
Aberdeen Standard GARS	4.6%	4.8%	0.8	-0.1	4.8%
Absolute Return Custom Index	4.9%	0.3%	13.9	--	0.0%

Statistics Summary

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Alternatives	13.0%	12.1%	1.0	0.1	11.9%
Blended Alternatives Index	12.0%	7.7%	1.4	--	0.0%
Private Equity	28.2%	20.5%	1.3	0.5	20.9%
Blended Private Equity Index	18.8%	15.5%	1.1	--	0.0%
Hedge Fund/Absolute Return	-3.0%	6.0%	-0.7	-1.4	6.0%
Absolute Return Custom Index	5.2%	0.3%	15.1	--	0.0%
Aberdeen Standard GARS	2.3%	4.4%	0.3	-0.7	4.4%
Absolute Return Custom Index	5.2%	0.3%	15.1	--	0.0%



	Actual \$	Actual %	Manager Contribution to Excess Return %
Harrison Street Core Property	\$56,218,913	5.4%	-0.3%
Invesco	\$308,163,518	29.7%	-0.7%
Invesco US Val IV	\$4,434,296	0.4%	-0.1%
Invesco US Val V	\$28,260,966	2.7%	-0.1%
PGIM RE US Debt Fund	\$85,603,902	8.2%	-0.6%
Stockbridge Value IV	\$8,646,057	0.8%	-0.1%
Private Real Asset	\$140,830,463	13.6%	-0.4%
SSgA Custom Real Asset	\$407,143,345	39.2%	-0.1%
Actual vs. Policy Weight Difference			-0.1%
Total	\$1,039,301,460	100.0%	-2.4%

Statistics Summary

3 Years

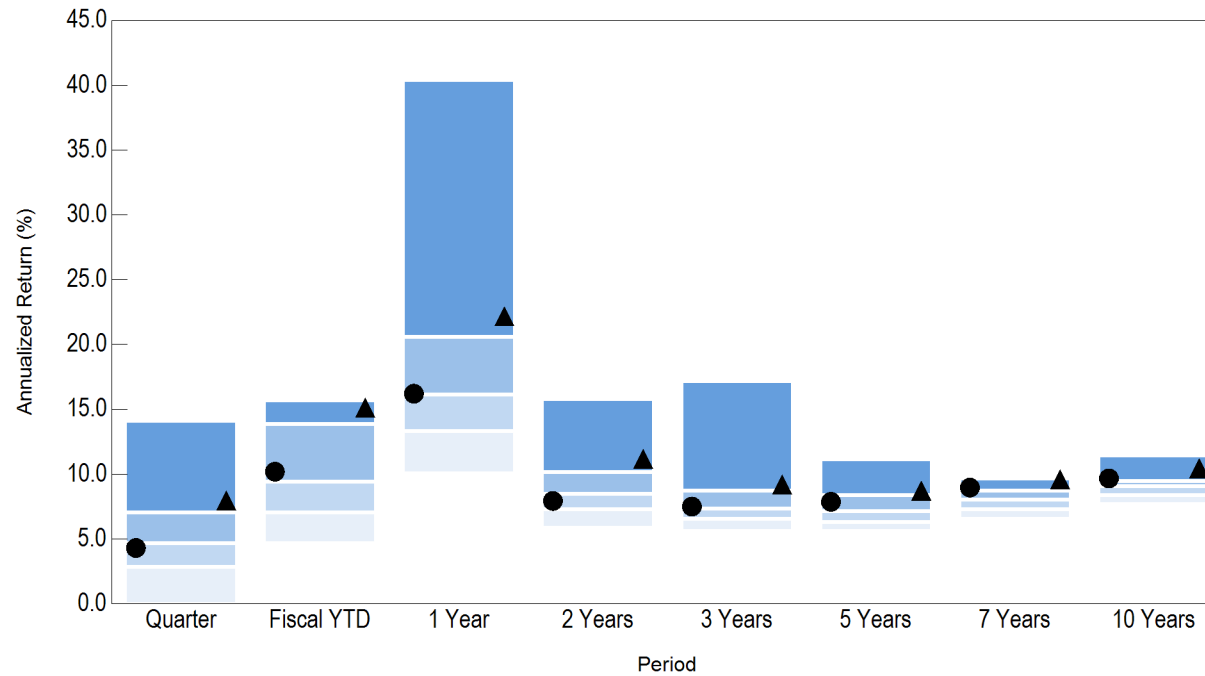
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Inflation Hedge	5.9%	7.4%	0.7	-1.1	3.6%
Blended Inflation Hedge Index	9.9%	7.0%	1.3	--	0.0%
Real Estate	7.5%	5.0%	1.3	-0.7	2.5%
NCREIF ODCE	9.2%	6.4%	1.3	--	0.0%
Invesco	8.0%	6.8%	1.1	-0.5	2.4%
NCREIF ODCE	9.2%	6.4%	1.3	--	0.0%
Invesco US Val IV	7.4%	6.2%	1.1	-0.3	6.9%
NCREIF ODCE	9.2%	6.4%	1.3	--	0.0%
PGIM RE US Debt Fund	5.3%	1.8%	2.5	-0.6	6.2%
NCREIF ODCE	9.2%	6.4%	1.3	--	0.0%
Private Real Asset	4.5%	13.9%	0.3	-0.1	21.9%
Blended Private Real Asset Index	7.0%	20.2%	0.3	--	0.0%
Public Real Assets	4.9%	19.6%	0.2	-1.0	4.3%
Blended Public Real Asset Index	9.2%	16.4%	0.5	--	0.0%
SSgA Custom Real Asset	9.1%	16.1%	0.5	-0.1	0.8%
SSgA Custom Real Asset Index	9.2%	16.4%	0.5	--	0.0%

Statistics Summary

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error Rank
Inflation Hedge	4.9%	6.1%	0.6	-0.9	--
Blended Inflation Hedge Index	7.6%	5.8%	1.1	--	--
Real Estate	7.9%	4.4%	1.5	-0.4	19
NCREIF ODCE	8.7%	5.3%	1.4	--	1
Invesco	8.2%	5.7%	1.3	-0.3	--
NCREIF ODCE	8.7%	5.3%	1.4	--	--
Invesco US Val IV	9.1%	5.8%	1.4	0.1	--
NCREIF ODCE	8.7%	5.3%	1.4	--	--
Private Real Asset	3.0%	11.5%	0.2	-0.2	--
Blended Private Real Asset Index	6.1%	16.4%	0.3	--	--
Public Real Assets	2.8%	16.0%	0.1	-0.9	--
Blended Public Real Asset Index	5.8%	13.7%	0.3	--	--
SSgA Custom Real Asset	5.8%	13.4%	0.4	0.1	--
SSgA Custom Real Asset Index	5.8%	13.7%	0.3	--	--

InvMetrics All DB Real Estate Pub Net Return Comparison



Return (Rank)

5th Percentile	14.1	15.7	40.4	15.8	17.1	11.1	9.6	11.4
25th Percentile	7.1	13.9	20.6	10.2	8.7	8.4	8.8	9.5
Median	4.7	9.4	16.2	8.5	7.4	7.2	8.1	9.1
75th Percentile	2.9	7.1	13.3	7.3	6.6	6.3	7.3	8.4
95th Percentile	0.0	4.7	10.1	5.9	5.6	5.6	6.6	7.7
# of Portfolios	51	50	50	50	49	49	49	45
● Real Estate	4.3 (52)	10.2 (43)	16.2 (50)	7.9 (59)	7.5 (50)	7.9 (38)	9.0 (20)	9.7 (20)
▲ NCREIF ODCE	8.0 (21)	15.1 (18)	22.2 (20)	11.2 (11)	9.2 (15)	8.7 (17)	9.6 (7)	10.4 (9)

Aberdeen Standard (ASI) Global Absolute Return Strategy (GARS)

The Aberdeen Standard Global Absolute Return Strategy (GARS) was designed in 2005 to address the needs of Standard Life's own Defined Benefit pension plan, with an objective to generate absolute returns with significantly less volatility than equity investments. The GARS investment process is designed to capitalize on an array of research and investment techniques and draws together the team's three-year investment insights. The team then examines and reviews position proposals to approve a high conviction, short list of positions that should work well together. The GARS strategy is built using a broad range of return-seeking positions (i.e. multi-strategy) that incorporate multiple risk views when constructing the portfolio. The strategy will take some directional risk at times if the portfolio management team believes that it will earn positive returns over their three-year time horizon. Given the scale of the GARS portfolio, the team requires all investment positions to be both scalable and suitably liquid. In addition, the strategy's risk-based approach requires the team to be able to reliably model the risk behavior of each selected investment, so all assets used must be well-understood from a risk perspective before going into the portfolio.

Acadian Asset Management – Acadian U.S. Managed Volatility

Acadian's goal is to build a portfolio focused on absolute return and risk with the aim of achieving an absolute return similar to or better than that of a domestic equity index but with lower volatility over the long term. Acadian targets absolute risk to be 25-35% less than a typical capitalization-weighted benchmark. That said, tracking error is not a major consideration and can appear relatively high due in part to Acadian's comfort with carrying large sector variations versus the benchmark. Acadian seeks to combine the values of all of the security-level factors to determine a peer-relative return forecast for each stock. Separately they make a top-down forecast for the stock's peer group, and then add that forecast to the stock's score. Acadian's managed volatility strategies utilize the same alpha forecasts as Acadian's active equity strategies but with risk being the initial consideration when constructing portfolios. Alpha forecasts play a modest role relative to the importance of risk estimates but are important to the goal of achieving a higher risk-adjusted return. Incorporation of alpha forecasts generally results in higher exposure to value, size and quality.

Acadian Asset Management – MAARS Fund

Acadian Multi-Asset Absolute Return (MAARS) strategy was inceptioned in November 2017. MAARS targets a volatility of 6%-8% and a return of cash plus 5%. This is a multi-factor strategy that aims to exploit behavioral inefficiencies within and across global markets and is designed to be diversifying, dynamic and defensive. It is market neutral, implemented using long and short positions across five primary asset classes (equity, fixed income, currency, commodities, and volatility) and over 100 underlying assets with a focus on liquid instruments. Return forecasts incorporate asset-specific and macroeconomic insights and are utilized to harvest active returns from within and across asset classes through market selection and directional positioning. The strategy integrates risk and return across asset classes. Avoidance of downside events is highlighted in the approach with a greater weighting in their models allocated to down market beneficiaries, such as quality factors, and asymmetric positioning which reduces positions when risk rises. Differentiated attributes of this approach are its approach and weighting to commodities and its volatility sleeve which can incorporate long volatility.

Angelo, Gordon & Co. – AG Opportunistic Whole Loan Fund

The Angelo Gordon Opportunistic Whole Loan (OWL) Fund was established to make investments primarily in a portfolio of non-performing loans (NPLs) and re-performing loans (RPLs). AG sees a lot of operational inefficiency in the market place. By acquiring these loans at a discounted price and replacing original servicers with better-focused special servicers, AG believes it can improve operational efficiency and generate attractive returns. In addition, OWL may also include investments in new residential mortgage loans and excess mortgage servicing rights. Opportunistic investments in commercial mortgage loans and other mortgage related investments may also be included in the Fund's portfolio. OWL is towards the end of its fund life and is continuing to sell down the fund's holdings and distribute proceeds to LPs.

Angelo, Gordon & Co. – Credit Solutions

The Angelo Gordon (AG) Credit Solutions Fund (CSF) expects to hold concentrated positions of 5-8% of NAV (averaging 30 positions over the life of the Fund with recycling). The Fund is targeting a net 15% IRR with a 5-7% current yield. The Fund should be 70% concentrated in the U.S. with the balance in Europe. Finally, while the opportunities can be sourced from both the public markets and the private markets, AG is finding compelling sources of return at this time through structuring new privately placed secured term loans out of public investments made by the firm. CSF will address corporate credit-based opportunities created in three main areas: 1) trading-based price dislocations that reduce creation multiples (price through the debt that must be repaid before value accrues to other stakeholders) while generating high current income; 2) opportunities in issuers tied to industries directly impacted by COVID-19 where the market's perception of the impact differs from the actual impact; and 3) corporate debt issuers that will be materially impacted by the pandemic and will need to restructure, but whose creation value is materially lower than the issuer's intrinsic value.

Angelo, Gordon & Co. – CSF (Annex) Dislocation

Angelo Gordon completed syndication of its AG Credit Solutions Fund ("CSF") in December of 2019. CSF was designed to capture opportunities in a late-cycle credit market and the initial stages of a market dislocation. Angelo Gordon designed and documented CSF to allow the placement of an annex fund in times of dislocation and credit deterioration. Given the price movements in the credit markets in March of 2020, driven by the lack of liquidity, financing needs of investment grade and non-investment grade borrowers, and anticipated impacts (restructurings, rescue financings, liquidations, etc.), Angelo Gordon came to market with the \$1.8 billion AG CSF Annex Dislocation Fund ("ADF"). ADF's investment aim is to target senior securities of world-class businesses with irreplaceable assets and strong cash flow profiles which, because of market stress, can be purchased at a material discount to what they believe is a company's long-term intrinsic value. ADF will address corporate credit-based opportunities created in three main areas: 1) trading-based price dislocations that reduce creation multiples (price through the debt that must be repaid before value accrues to other stakeholders) while generating high current income; 2) opportunities in issuers tied to industries directly impacted by COVID-19 where the market's perception of the impact differs from the actual impact; and 3) corporate debt issuers that will be materially impacted by the pandemic and will need to restructure, but whose creation value is materially lower than the issuer's intrinsic value.

Baillie Gifford – ACWI ex US Focus Equities

ACWI ex US Focus is a fundamental growth strategy. Research is organized primarily by regional teams, with each member of the ACWI ex US Focus Portfolio Construction Group representing a regional team. Four global sector groups also contribute research. Baillie Gifford conducts approximately 2000 company meetings annually both in Edinburgh and onsite. Companies are evaluated on their growth opportunity relative to the average company, their ability to execute on that opportunity, and the degree to which probability of future success is already valued by the market. Baillie Gifford's basic philosophy is that share prices ultimately follow earnings. They believe that the stock market has a recurring tendency to under-appreciate the value of long-term compound growth. The process seeks to add value through use of proprietary fundamental research to identify companies exhibiting some combination of sustained above average growth, and attractive financial characteristics. The portfolio generally holds 60-90 stocks, with country and sector weights +/-10% relative to the index and stock weights +/- 5% relative to the index.

Beach Point Capital Management, L.P. - Beach Point Select Fund

Beach Point Select Fund is a commingled fund vehicle within the firm's Opportunistic Credit strategy. This fund focuses on off-the-run, complex, and less-liquid securities. It is a best ideas portfolio of distressed debt, special situations, private/direct loans, catalyst-driven high yield bonds and bank loans, and credit-informed equities with a North American and European focus. The Select Fund differs from other funds and accounts in the Opportunistic Credit strategy by pursuing a more concentrated portfolio and emphasizing a higher percentage of less-liquid/private investments. Beach Point invests up and down the entire capital structure and it constructs portfolios with a bottom-up, research-driven approach that also takes into account top-down macro considerations. Its investment process includes idea generation, detailed credit analysis, relative value decision making and investment selection, portfolio construction and on-going monitoring. The ultimate goal of its investment process is to produce a well-diversified investment portfolio with limited downside risk and substantial upside potential.

BlackRock – MSCI ACWI ex US IMI Index

The ACWI ex US IMI Index Fund seeks to replicate the return of the MSCI ACWI ex US IMI Index. This index represents the developed equity markets outside of North America, including small cap equity. BlackRock monitors their funds daily to ensure that additions and deletions to the indexes, mergers and acquisitions, restructurings and other capitalization changes are made to the fund in such a way as to minimize tracking error and transactions costs.

BlackRock – Russell 1000 Index

The Russell 1000 Index Fund tracks large U.S. companies and achieve broad diversification with low costs by fully replicating the Russell 1000 Index. BlackRock monitors their funds daily to ensure that additions and deletions to the indexes, mergers and acquisitions, restructurings and other capitalization changes are made to the fund in such a way as to minimize tracking error and transactions costs.

BlackRock (formerly Tennenbaum Capital Partners) - Direct Lending Funds VIII and IX

TCP Direct Lending Fund VIII is a private investment fund managed by Tennenbaum Capital Partners ("TCP"). The Fund is designed to continue TCP's successful strategy of investing in privately-originated, performing senior secured debt primarily in North America-based companies with target enterprise values between \$100 million and \$1.5 billion. The Fund will include positions in 1st lien, 2nd lien and unitranche debt, with a preference for floating-rate debt, which TCP believes provides better flexibility to adapt to market conditions. TCP's direct lending strategy has generated attractive investment opportunities across market cycles, as evidenced by the Firm's prior direct lending track record. Fund VIII targets an unlevered annual yield of approximately 9-12%, with its return primarily driven by current income. SamCERA committed \$35 million to DLF VIII in June 2016 in its unlevered fund sleeve and \$35 million to the DLF IX in June 2019.

Brigade – Opportunistic Credit

Opportunistic Credit is a fundamental, bottom-up strategy focused on high yield corporate bonds and bank loans with tactical allocations to structured securities, convertibles, and other sectors of the bond markets as they become attractive on a relative value basis. While performing credits represent the majority, Brigade will invest up to 35% of the portfolio in distressed securities and restructuring situations if these types of opportunities are attractive on a risk-adjusted basis and the timing is right with respect to the credit cycle. The portfolio is comprised of mostly North American issuers, but they are not restricted geographically and expect to have a moderate allocation to Europe over time. Although the portfolio is generally long-only, Brigade has the ability to implement a limited amount of tactical macro hedges.

CFM - Systematic Global Macro

Capital Fund Management (CFM) Systematic Global Macro (SCM) is a directional strategy that takes long and short positions in liquid future and forwards across 130+ markets and across equities, bonds, currencies, and commodities. It is a new strategy that draws on model signals from existing strategies at the firm – Discus (diversified CTA), CFM ISTrends (trend following) and CFM ISTrend Equity Capped (defensive trend following) - and SamCERA is a seed investor with an attractive fee. SGM’s objective is to provide absolute returns that are uncorrelated with traditional asset classes over a long time horizon with an annualized volatility target between 8% and 12%. SGM uses a diverse set of trading strategies that are based on factors (momentum, value, carry, macro and sentiment) across asset classes. These technical and fundamental factors operate at different time scales and can have varying degrees of influence on performance depending on market and economic conditions. An additional global macro defensive overlay is combined with these outputs in constructing the final portfolio. CFM uses a form of portfolio construction known as agnostic risk parity to ensure that the SGM portfolio is diversified on an out-of-sample basis. The goal of SGM is to generate consistent returns while limiting drawdowns.

DE Shaw – DE Shaw US Broad Market Core Alpha Extension Fund

The D. E. Shaw group believes that there exist some market inefficiencies that may be identified through quantitative analysis, advanced technology, and the insight of practitioners. Identifying these inefficiencies involves a process of hypothesis formulation, testing, and validation. Importantly, to avoid data-mining, the hypothesis formulation precedes the analysis of the historical data. D.E. Shaw’s Structured Equity strategies rely largely on quantitative and computational investment techniques developed by the D. E. Shaw over the last two decades in the course of research conducted for purposes of managing the firm’s hedge funds. D.E. Shaw’s investment process involves a suite of quantitative models, each designed to capitalize on a distinct and uncorrelated set of market inefficiencies. Some of these models are technical in nature and involve price and volume inputs. Other models rely on fundamental data, such as figures gleaned from corporate balance sheets or income statements. Still others, again quantitative, anticipate or react to a particular corporate event or set of events. These models typically operate with forecast horizons of a few weeks to many months. The ability to trade on shorter-term signals distinguishes D.E. Shaw from many of its long only and 130/30 peers. Portfolio construction involves the use of a proprietary optimizer which runs dynamically throughout the trading day. The portfolio is broadly diversified with several hundred long and short positions. Over- and under-weighting of sectors and industries relative to the benchmark will be quite modest, with the intention that most of the alpha be generated by security selection. The US Broad Market Core Alpha Extension Fund is a 130/30 strategy which maintains a beta that is approximately neutral to the Russell 1000 Index.

DoubleLine – Securitized Income

The DoubleLine Securitized Income strategy is an actively managed, liquid, long only, intermediate-term fixed income product. The primary objective of the strategy is to seek and maximize current income and total return by utilizing a combination of Agency MBS and structured credit. The DoubleLine Structured Products team aims to offer clients investment grade exposure to both interest rate duration and credit spread to provide a more attractive total return profile compared to the benchmark. Securitized Income seeks to maximize income and total return by investing across the structured products universe, focusing on agency mortgage-backed securities (MBS) and investment grade securitized credit. DoubleLine takes a barbelled approach to investing in the securitized market, and they will separate rates from credit and will adjust the allocations to both at the based on the economic cycle and opportunities. Duration positioning is achieved through Agency MBS, Agency CMBS, and treasuries while credit exposure is attained through all areas of structured credit.

Fidelity (FIAM) – Broad Market Duration Commingled Pool

Pyramis' Broad Market Duration (BMD) investment strategy seeks to achieve absolute and risk-adjusted returns in excess of the BC U.S. Aggregate Index, focusing its investments in US Treasuries, agencies, investment grade corporate bonds, mortgage-backed and asset-backed securities. The BMD commingled pool can also hold small, opportunistic positions in out-of-benchmark securities, such as inflation-linked bonds. The investable universe includes all US dollar denominated, investment grade debt securities. The BMD investment approach emphasizes issuer and sector valuation and individual security selection. Through the integration of fundamental and quantitative research and trading, the BMD strategy is implemented in a team environment. Risk management technology is utilized to explicitly quantify benchmark exposures on a daily basis, and Pyramis uses the same analytical framework to assess both index and portfolio risk. Tracking error should range between 40 and 60 basis points per annum over the benchmark, and stringent portfolio construction risk control rules are strictly adhered to.

Franklin Templeton Investments – Global Fixed Income

Franklin Templeton manages the global bond mandate in an unconstrained fashion using a top-down, fundamental framework. In the short term and on a country-by-country basis there are often inefficiencies in global bond and currency markets, however, over the longer term the market will generally price to fundamentals. Thus, FT focuses on fundamental research to identify long-term opportunities and uses short-term market inefficiencies to build positions in such investments. The investment and portfolio construction process begin with the determination of the Fund's or institutional client's investment objectives, resulting in a set of risk-return parameters and exposure limits within which the portfolio is managed. Next the firm's global economic outlook for the industrialized countries is developed, with a focus on interest rate and exchange rate forecasts. The portfolio's interest rate outlook is a function of global general equilibrium macroeconomic analysis as well as country-specific research. Macroeconomic conditions in the G-3 economies are analyzed first, primarily with respect to how current and projected growth and inflation dynamics are expected to influence monetary policy. This analysis is then extended out to the rest of the industrialized countries (G-13) as well as emerging markets, which results in broad targets for cash, duration, currencies and the developed/emerging market mix. Using the firm's interest rate and exchange rate outlook, probability-weighted horizon returns for bonds of various countries are then calculated. This analysis is used to establish specific country weights and duration targets based on risk-adjusted expected total return measured in the portfolio's base currency. Analysis of emerging markets includes sovereign credit analysis along with greater emphasis on capital flows, inter-market dynamics and trends in the level of risk aversion in the market.

Graham – Quant Macro Fund

Graham Quant Macro ("GQM") is a directional, long and short strategy that utilizes fundamental and price-based indicators to establish return forecasts across global interest rates, foreign exchange, stock indices and commodities. The strategy incorporates a variety of submodels that generate macro fundamental forecasts, assess yield and earnings differentials, compare current valuations relative to historic fair value, and analyze directional price trends across markets. Quantitative risk management and portfolio construction techniques are used to diversify risk across the portfolio and enhance risk-adjusted returns. Historically, the average holding period has been approximately eight to ten weeks, although the sub-models will make daily adjustments to positions. The strategy is designed to have low correlation to traditional markets and other alternative strategies and has the potential to provide significant portfolio diversification benefits.

Harrison Street Core Property

Based in Chicago, Harrison Street's exclusive focus since inception in 2005 has been investing in non-core property sectors of the real estate market. The Harrison Street Core Fund is an open-end fund that invests primarily in stabilized education, healthcare, and self-storage real estate assets in the United States using modest leverage with an emphasis on generating current income. The focus on these alternative property types is intended to concentrate on areas of the real estate market that are less GDP sensitive with demand drivers that are more demographic driven such as aging populations, education growth and healthcare delivery. Each of these areas tend to be less tied to the business cycle, have fragmented ownership and more operationally intensive. The fund acts as a diversifier within real estate portfolios with sector exposures that are not a typical focus of other core ODCE funds.

INVESCO Realty Advisors – INVESCO Core Equity, LLC

SamCERA is a founding member of INVESCO's open-end Core Equity real estate fund and rolled its separate account properties into the fund. INVESCO Core Equity, LLC (the "Fund") is a perpetual life, open-end vehicle which invests in a diversified portfolio of institutional quality office, retail, industrial and multifamily residential real estate assets. The Fund buys core properties that are located within the United States, typically requiring an investment of \$10 million or more. The portfolio cannot be more than 30% leveraged.

INVESCO Realty Advisors – INVESCO US Val IV

Invesco has provided SamCERA with Core Real Estate exposure since 2004 through the Invesco Core Equity Fund. The Invesco real estate team manages around \$62B in assets with investments and offices around the globe. Invesco Value Fund IV looks to acquire fundamentally sound but broken "core" assets that can be repositioned into institutional-quality, income producing properties. Investments are limited to direct equity interests in office, multi-family, retail and industrial properties across the US. The Fund is expected to be geographically concentrated in U.S. gateway cities and top 25 Metropolitan Statistical Areas (MSA's). Invesco Value Fund IV provides a complement to the more conservative Invesco Core Fund and offers the potential of enhanced returns to the SamCERA Real Estate portfolio.

INVESCO Realty Advisors – INVESCO US Val V

Invesco has provided SamCERA with Core Real Estate exposure since 2004 through the Invesco Core Equity Fund and through the Invesco US Value IV Fund since December 2015. The Invesco real estate team manages around \$62B in assets with investments and offices around the globe. Invesco Value Fund V will be similar to the Value Add IV and look to acquire fundamentally sound but broken "core" assets that can be repositioned into institutional-quality, income producing properties. Investments will be limited to direct equity interests in office, multi-family, retail and industrial properties across the US. The Fund is expected to be geographically concentrated in U.S. gateway cities and top 25 Metropolitan Statistical Areas (MSA's).

Mondrian Investment Partners – International Equity

Mondrian is a value-oriented, defensive manager whose investment philosophy is based on the principle that investments must be evaluated for their fundamental long-term value. The firm's philosophy involves three stated investment objectives: 1) provide a rate of return meaningfully greater than the client's domestic rate of inflation, 2) structure client portfolios that preserve capital during protracted international market declines, and 3) provide portfolio performance that is less volatile than benchmark indices and other international managers. Mondrian applies typical value screening criteria to a universe of 1,500 stocks, from which 500 are selected for more detailed work. Through fundamental research, and the deliberations of the Investment Committee, the universe is further reduced to a list of 150 stocks. The investment team conducts detailed fundamental analysis on the remaining stocks, a process which includes applying the firm's dividend discount model consistently across all markets and industries. Mondrian also uses a purchasing power parity model to give an accurate currency comparison of the value of the stocks under consideration. The firm will only consider buying stocks in countries with good investor protection practices and relatively simple repatriation procedures. A computer-based optimization program is employed in the portfolio construction process. Mondrian's portfolio holds 80-125 issues.

NISA – Core Bond

NISA applies a risk-controlled approach to all of its fixed income portfolios. This approach does not permit large bets or positions that generate significant tracking error versus the benchmark. Instead, NISA invests in a large number of small, diversified, active positions which seek tight tracking error to the chosen benchmark. Benchmark weight is a significant consideration when constructing and managing portfolios. The investment strategy is comprised of strategic (top-down) and tactical (bottom-up) decisions. Strategic decisions include sector selection and yield curve positioning while tactical decisions include industry and security selection and trading activity. Review of both strategic and tactical decisions is continual. The amount of portfolio risk budget devoted to one aspect versus the other will change as market conditions warrant. In general, strategic decisions change relatively infrequently, while tactical decisions, especially security selection, will change fairly often as market conditions provide opportunities. Over a typical market cycle, the bottom-up is expected to contribute to 70% of value-added while top-down is roughly 30%.

PanAgora Asset Management – Defensive U.S. Equity Low Volatility

PanAgora's Defensive Equity strategy seeks to harness the 'low-volatility premium' through a systematic, factor-based investment approach focused on achieving market-like returns with less risk. This is accomplished by leveraging PanAgora's proprietary Risk Parity portfolio construction methodology, which seeks to efficiently capture the equity premium associated with low volatility, while taking minimal unintended risks. Since the firm's inception, PanAgora has been using quantitative techniques to integrate fundamental insights with large amounts of dynamic market data. They score individual securities on a factor basis and also on a diversification basis, in the context of a broadly diversified portfolio. The portfolio construction process optimizes the portfolio around the intended factor exposure (volatility) while maintaining equal risk contribution across sectors (ex., overweight utilities and consumer staples, underweight financials and technology). Shorter term volatility and longer term correlation analysis is combined in the approach. The result for the US Defensive Equity strategy is a portfolio expected to have lower volatility (beta around 0.65-0.75), and similar returns relative to the capitalization-weighted benchmark over a full market cycle. PanAgora expects the strategy to participate in approximately 75% of up markets and 55% in down markets.

Parametric Overlay – Cash Overlay and Currency Hedge

Parametric's cash overlay program is an efficient way for SamCERA to maintain its target asset allocation in a systematic fashion through cash securitization at the fund and manager level, transition/reallocation support and asset class rebalancing back to target within defined bands. The cash overlay program is invested synthetically using liquid futures with cash balances reviewed daily. A combination of large and small cap futures implementation is the proxy for private equity. SamCERA's investment guidelines initially allowed only for cash overlay. Rebalancing was added to the SamCERA program in January 2014. Cash overlay and rebalancing is expected to add 10-20 bps to the portfolio over time. An additional currency overlay hedge placed on half of the notional value of developed international equities. The addition of currency hedging started in September 2018 and was fully implemented on 10/1/2019. The purpose of the currency is first and foremost to lower portfolio risk and secondarily to add incremental performance.

PIMCO Diversified

PIMCO's Diversified Income (DI) Fund is a multi-sector strategy that invests across a broad spectrum of global credit market sectors, including investment grade and high yield corporate debt, as well as emerging markets. The allocation among these will vary based on PIMCO's assessment of global trends and relative valuations. This active and dynamic approach allows for increased responsiveness in asset allocation to changing economic and market conditions while remaining anchored by PIMCO's investment process and longer-term orientation. The ability to invest globally helps to improve diversification and may allow investors to benefit from differences in business cycles across regions and credit quality trends across credit sectors. PIMCO's DI investment strategy seeks to provide high yield-like returns with lower volatility against a blended index (1/3 Bloomberg Barclays Global Agg Credit ex-EM; 1/3 BofA Merrill Lynch BB-B rated Developed Markets High Yield; 1/3 JPMorgan EMBI Global). The fund allows for a duration band of 3-8 years. The team focuses its investments into these groups: credit strategies (investment grade, high yield, emerging markets and non-core credits including MBS, municipals and other govt-related sectors); duration strategies (U.S. and non-U.S. duration) and currencies (tactical non-USD exposure).

PIMCO – MAARS

PIMCO MAARS is an alternative risk premia strategy that looks for risks associated with: (1) Supply and Demand Constraints, (2) Behavioral Biases, and (3) Asymmetric Risks (event risk). As reflected in the design of the MAARS strategies, PIMCO believes that alternative risk premia strategies are best implemented using a systematic approach that minimizes the discretionary inputs in day-to-day portfolio management. MAARS places a greater emphasis and weighting on global interest rates, currencies and commodities and a lesser emphasis on equities than many of its Alt Beta peers. Relative to Alt Beta peers, the strategy's rates and currency (FX) models are particularly robust, reflective of PIMCO's core competency and long history managing these asset classes using derivative instruments.

PIMCO Private Income Fund

PIMCO Private Income Fund (PIF) uses an opportunistic and flexible approach to global private credit. PIF provides a total return oriented global credit exposure utilizing both top-down sector relative value and bottom up security selection. The strategy invests across private residential, commercial, corporate and specialty finance markets. PIMCO's Private Income Fund (PIF) is targeting 8-12% net returns with income providing most of the fund's returns. The Private Income Investment Committee (IC) identifies market themes and direction for their relative value framework, and sector specialists provide recommendations to the PM team within that construct. PIF has the ability to invest throughout the capitalization structure. The fund can use a moderate amount of leverage to enhance portfolio returns (1.5 times with a hard cap of 2 times).

PGIM RE Debt

PGIM Real Estate US Debt Fund (PREDS) focuses on a loan origination strategy with a mix of 20% senior long duration loans on stable assets, 60% senior short/medium duration loans on stable and transitional assets, and 20% mezzanine mid/long duration debt. SamCERA was a founding investor in the PREDS strategy which invests in US commercial real estate debt in an open-ended vehicle with a return target of 7-8% (gross) coming from stable current income. The fund makes investments in first lien mortgages and mezzanine debt. First lien mortgages can be floating rate or fixed rate, but only floating rate loans will use leverage. Subordinate investments (mezzanine debt and preferred equity) will be limited by design. The fund can source and invest in secondary loans through a variety of Prudential real estate professionals, but the primary focus will be on direct origination through the real estate finance team.

Quantitative Management Associates – QMA Small-Cap Core

Quantitative Management Associates (QMA) utilizes a bottom-up quantitative framework in order provide a diversified exposure to core U.S. small-cap stocks, while attempting to produce consistent outperformance versus the benchmark with moderate tracking error levels. QMA uses an adaptive, systematic investment process to exploit opportunities created by mispriced securities to consistently add value over long time periods. Bottom-up stock selection drives exposure to key sources of alpha (valuation, growth, and quality). The QMA stock selection model adapts to changes in company growth rates and market environments by putting more emphasis on valuation for slowly growing companies, and more emphasis on future growth projections for companies with higher projected growth rates.

State Street Global Advisors (SSgA) Custom Real Asset

SSgA Custom Real Asset portfolio uses a portfolio of liquid real assets to proxy private real assets. The portfolio is comprised of equal weightings of the Bloomberg Roll Select Commodity Index, S&P Global Mid-Large Cap Natural Resources Index, S&P Global Infrastructure Index, and Bloomberg Barclays TIPS Index. SSgA provides beta exposure through these underlying liquid components which can be customized to changing client needs (ex., TIPS was added in May 2020 with the other three parts of the portfolio reduced pro-rata). The portfolio is used to fund upcoming private real asset mandates.

Stockbridge Value IV

Stockbridge Value IV will implement a value-added strategy that will seek to own assets that are undervalued, underutilized, and/or not operating to their full potential. The manager will add value with their internal asset management team through active strategies including additional capital investment, leasing, recapitalization, renovation and/or development. The fund will target three to five year holding periods for investments, with disposition taking place after the completion of the value-add strategy. The fund will target 15 to 25 mid-sized investments, diversified by geography and property type. The strategy will target 21 markets in the United States in which the firm has boots on the ground coverage with dedicated acquisitions professionals and asset managers responsible for knowing each market extensively with a vast network of relationships.

Western Asset Management – Total Return Unconstrained (TRU)

Western Asset's Total Return Unconstrained strategy (TRU) seeks to provide bond-like risk and return over the long term but does not have a benchmark. This allows for asset allocation based on value rather than using the construction of a benchmark as baseline positioning. The investment approach is active with very broad latitude on duration (-3 to +8 years) and on asset allocation across all of the eligible sectors in a core plus mandate. The portfolio must have at least 50% of its holdings in investment-grade securities. The flexibility offered by this strategy allows for defensive positioning in rising rate environments and opportunistic deployment of capital when value opportunities arise. It also allows the portfolio managers to emphasize (or deemphasize) either credit or rates when one or the other appears to offer greater (or lesser) value. um non-US exposure.

White Oak - White Oak Yield Spectrum Fund

The White Oak Yield Spectrum Fund's objective is to earn substantial current income by originating, extending, and/or investing in a diversified portfolio of primarily senior secured corporate credit and debt instruments consisting of term loans, asset-based loans and equipment leases and loans issued by small to middle-market companies located primarily in the United States and Canada. It focuses on providing self-originated deals for predominantly non-sponsored, privately-held borrowers.

White Oak - White Oak Yield Spectrum Fund V

The White Oak Yield Spectrum Fund's objective is to earn substantial current income by originating, extending, and/or investing in a diversified portfolio of primarily senior secured corporate credit and debt instruments consisting of term loans, asset-based loans and equipment leases and loans issued by small to middle-market companies located primarily in the United States and Canada. It focuses on providing self-originated deals for predominantly non-sponsored, privately-held borrowers.

Policy Index and Benchmark History

Period Ending: December 31, 2021

Total Plan Policy Index	As of													
	2/1/21	1/1/21	7/1/20	4/1/20	10/1/19	7/1/19	4/1/19	1/1/19	10/1/18	4/1/18	10/1/17	2/1/17	1/1/17	
10 Year Treasury +2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
60/40 MSCI World/Bloomberg Global Aggregate (RP)	0.0%	0.0%	0.0%	4.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
60/40 Russell 3000/Bloomberg US Aggregate (RP)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
91 Day T-Bills	1.0%	1.0%	1.0%	1.0%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg Aggregate	18.0%	21.0%	21.0%	18.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	12.0%	10.0%	10.0%
Bloomberg BA Intermediate HY	10.0%	10.0%	10.0%	8.0%	8.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	6.0%	6.0%	6.0%
Bloomberg BBB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg Credit BAA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg Multiverse	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.0%	3.0%	3.0%
Bloomberg TIPS	0.0%	0.0%	0.0%	0.0%	1.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Bloomberg Commodity	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Citigroup non-US WGBI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
CPI + 5% (RA)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Blended Public Real Asset	4.0%	4.0%	4.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	0.0%	0.0%	0.0%	0.0%
Blended Private Real Asset	4.0%	3.0%	3.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	8.0%	7.0%	5.0%	5.0%
Libor +4% (HF)	0.0%	0.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	5.0%
SOFR +4% (HF)	7.0%	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex US IMI 100% Hedged (Net)	9.5%	9.0%	9.0%	9.0%	9.0%	7.6%	5.7%	3.8%	1.9%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US IMI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	19.0%	19.0%	19.0%
MSCI ACWI ex-US IMI (Net)	9.5%	9.0%	9.0%	9.0%	9.0%	11.4%	13.3%	15.2%	17.1%	19.0%	19.0%	0.0%	0.0%	0.0%
MSCI EAFE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
NCREIF ODCE	9.0%	10.0%	10.0%	9.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	7.0%	7.0%	7.0%
NCREIF Property	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 1000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 1000 Value	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 2000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 3000	22.0%	21.0%	21.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	21.0%	21.0%	23.0%	28.0%	28.0%
Russell 3000 +3% (PE)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	7.0%	7.0%	7.0%
Russell 3000 +3% 1Q Lag (PE)	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	7.0%	0.0%	0.0%	0.0%	0.0%
S&P 500	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Policy Index and Benchmark History

Period Ending: December 31, 2021

Total Plan Policy Index	As of:													
	10/1/16	9/1/16	1/1/16	7/1/14	1/1/14	2/1/13	1/1/11	10/1/10	1/1/09	5/1/07	6/1/00	3/1/99	9/1/98	7/1/96
10 Year Treasury +2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.0%	10.0%	10.0%
60/40 MSCI World/Bloomberg Global Aggregate (RP)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
60/40 Russell 3000/Bloomberg US Aggregate (RP)	8.0%	8.0%	8.0%	8.0%	8.0%	6.0%	6.0%	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
91 Day T-Bills	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg Aggregate	10.0%	10.0%	10.0%	10.0%	9.3%	11.0%	11.0%	12.9%	27.0%	27.0%	29.0%	25.0%	21.0%	21.0%
Bloomberg BA Intermediate HY	6.0%	5.0%	5.0%	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg BBB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg Credit BAA	0.0%	0.0%	0.0%	0.0%	0.0%	3.5%	3.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg Multiverse	3.0%	3.0%	3.0%	3.0%	3.8%	4.4%	4.4%	4.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg TIPS	2.0%	2.0%	2.0%	2.0%	2.0%	3.1%	3.3%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg Commodity	0.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Citigroup non-US WGBI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	9.0%	9.0%
CPI + 5% (RA)	0.0%	2.0%	2.0%	2.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Blended Public Real Asset	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Blended Private Real Asset	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Libor +4% (HF)	5.0%	5.0%	5.0%	4.0%	4.0%	3.0%	3.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
SOFR +4% (HF)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US	0.0%	0.0%	0.0%	0.0%	0.0%	18.0%	18.0%	18.0%	21.0%	21.0%	15.0%	0.0%	0.0%	0.0%
MSCI ACWI ex US IMI 100% Hedged (Net)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US IMI	19.0%	20.0%	20.0%	20.0%	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US IMI (Net)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI EAFE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	20.0%	20.0%
NCREIF ODCE	7.0%	7.0%	7.0%	6.0%	6.0%	5.0%	5.0%	5.0%	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%
NCREIF Property	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.0%	6.0%	0.0%	0.0%	0.0%
Russell 1000	0.0%	0.0%	24.0%	24.0%	24.0%	28.0%	28.0%	28.0%	37.0%	37.0%	40.0%	22.0%	20.0%	20.0%
Russell 1000 Value	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	5.0%	0.0%
Russell 2000	0.0%	0.0%	4.0%	6.0%	6.0%	7.0%	7.0%	7.0%	9.0%	9.0%	10.0%	15.0%	15.0%	15.0%
Russell 3000	28.0%	28.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 3000 +3% (PE)	7.0%	7.0%	7.0%	7.0%	7.0%	8.0%	8.0%	8.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 3000 +3% 1Q Lag (PE)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
S&P 500	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Policy Index and Benchmark History

Period Ending: December 31, 2021

Public Equity Benchmark	As of:																		
	2/1/21	7/1/20	10/1/19	7/1/19	4/1/19	1/1/19	10/1/18	10/1/17	2/1/17	10/1/16	9/1/16	1/1/16	1/1/14	10/1/10	5/1/07	6/1/00	3/1/99	9/1/98	1/1/96
MSCI ACWI ex-US	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	34.0%	31.3%	23.1%	0.0%	0.0%	0.0%
MSCI ACWI ex US IMI 100% Hedged (Net)	23.2%	23.1%	22.5%	18.5%	13.9%	9.3%	4.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US IMI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	47.5%	45.2%	40.4%	41.7%	41.7%	40.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex US IMI (Net)	23.2%	23.1%	22.5%	27.8%	32.4%	37.0%	41.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI EAFE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	32.3%	33.3%	33.3%
Russell 1000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	48.0%	52.8%	55.2%	61.5%	35.5%	33.3%	33.3%
Russell 1000 Value	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.0%	8.4%	0.0%
Russell 2000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.3%	12.0%	13.2%	13.5%	15.4%	24.2%	25.0%	25.0%
Russell 3000	53.7%	53.9%	55.0%	53.7%	53.7%	53.7%	53.7%	52.5%	54.8%	59.6%	58.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
S&P 500	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.4%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

US Equity Benchmark	As of:						
	9/1/16	1/1/16	6/1/00	3/1/99	9/1/98	7/1/96	1/1/95
Russell 1000	0.0%	85.7%	80.0%	52.0%	50.0%	50.0%	69.0%
Russell 1000 Value	0.0%	0.0%	0.0%	12.0%	12.5%	0.0%	0.0%
Russell 2000	0.0%	14.3%	20.0%	36.0%	37.5%	37.5%	14.0%
Russell 3000	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
S & P 500	0.0%	0.0%	0.0%	0.0%	0.0%	12.5%	17.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

International Equity Benchmark	As of:								
	10/1/19	7/1/19	4/1/19	1/1/19	10/1/18	10/1/17	1/1/14	6/1/00	1/1/96
MSCI ACWI ex US	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
MSCI ACWI ex US IMI 100% Hedged (Net)	50.0%	40.0%	30.0%	20.0%	10.0%	0.0%	0.0%	100.0%	0.0%
MSCI ACWI ex US IMI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%
MSCI ACWI ex US IMI (Net)	50.0%	60.0%	70.0%	80.0%	90.0%	100.0%	0.0%	0.0%	0.0%
MSCI EAFE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Fixed Income Benchmark	As of:															
	2/1/21	7/1/20	4/1/20	10/1/19	10/1/17	2/1/17	10/1/16	4/1/16	7/1/14	1/1/14	2/1/13	1/1/11	10/1/10	6/1/00	3/1/99	7/1/96
Bloomberg Aggregate	64.3%	67.7%	69.2%	63.6%	66.7%	57.1%	52.6%	55.5%	50.0%	46.3%	50.0%	50.0%	58.6%	100.0%	83.3%	70.0%
Bloomberg BA Intermediate HY	35.7%	32.3%	30.8%	36.4%	33.3%	28.6%	31.6%	27.8%	25.0%	25.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg BBB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.3%	0.0%	0.0%	0.0%
Bloomberg Credit BAA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.0%	15.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg Multiverse	0.0%	0.0%	0.0%	0.0%	0.0%	14.3%	15.8%	16.7%	15.0%	18.8%	20.0%	20.0%	20.5%	0.0%	0.0%	0.0%
Bloomberg TIPS	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.0%	10.0%	14.0%	15.0%	13.6%	0.0%	0.0%	0.0%
Citigroup non-US WGBI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.7%	30.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Opportunistic Credit Benchmark	As of:	
	1/1/14	12/1/09
Bloomberg BA Intermediate HY	100.0%	0.0%
Bloomberg Credit BAA	0.0%	100.0%
	100.0%	100.0%

Alternatives Benchmark	As of:								
	2/1/21	1/1/21	10/1/18	4/1/18	2/1/17	4/1/16	1/1/16	1/1/14	1/1/11
60/40 Russell 3000/Bloomberg US Aggregate (RP)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	30.0%
Bloomberg Commodity	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	17.7%	18.8%	15.0%
CPI + 5% (RA)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11.8%	12.5%	0.0%
Libor +4% (HF)	0.0%	0.0%	50.0%	46.2%	46.2%	41.7%	29.4%	25.0%	15.0%
SOFR +4% (HF)	53.8%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 3000 +3% (PE)	0.0%	0.0%	0.0%	0.0%	53.8%	58.3%	41.2%	43.8%	40.0%
Russell 3000 +3% 1Q Lag (PE)	46.2%	50.0%	50.0%	53.8%	0.0%	0.0%	0.0%	0.0%	0.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Policy Index and Benchmark History

Period Ending: December 31, 2021

Private Equity Benchmark

As of:	4/1/18	10/1/10
Russell 3000 +3% 1Q Lag	100.0%	0.0%
Russell 3000 +3%	0.0%	100.0%
	100.0%	100.0%

Hedge Fund Benchmark

As of:	1/1/21	10/1/10
Libor +4%	0.00%	100.00%
SOFR +4%	100.0%	0.0%
	100.0%	100.0%

Inflation Hedge

As of:	2/1/21	7/1/20	4/1/20	10/1/19	4/1/18	2/1/17	10/1/16	4/1/16
Bloomberg TIPS	0.00%	0.00%	0.00%	5.88%	11.1%	12.5%	14.3%	14.3%
Bloomberg Commodity	0.00%	0.00%	0.00%	0.00%	0.0%	0.0%	0.0%	21.4%
CPI + 5% (RA)	0.00%	0.00%	0.00%	0.00%	0.0%	0.0%	0.0%	14.3%
Blended Public Real Asset	23.53%	23.53%	35.29%	35.29%	33.3%	0.0%	0.0%	0.0%
Blended Private Real Asset	23.53%	17.65%	11.77%	11.77%	11.1%	43.8%	35.7%	0.0%
NCREIF ODCE	52.94%	58.82%	52.94%	47.06%	44.4%	43.8%	50.0%	50.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Public Real Asset Benchmark

As of:	5/1/20	10/1/16	1/1/14
Bloomberg Roll Select Commodity	25.0%	34.0%	0.0%
S&P Global Large-MidCap Commodity and Resources	25.0%	33.0%	0.0%
S&P Global Infrastructure	25.0%	33.0%	0.0%
CPI + 5%	0.0%	0.0%	100.0%
Bloomberg TIPS	25.0%	0.0%	0.0%
	100.0%	100.0%	100.0%

Private Real Asset Benchmark

As of:	1/1/21	4/1/18	10/1/16	1/1/14
Bloomberg Roll Select Commodity	0.00%	0.00%	34.00%	0.0%
S&P Global Large-MidCap Commodity and Resources	0.00%	0.00%	33.00%	0.0%
S&P Global Infrastructure	0.00%	0.00%	33.00%	0.0%
50/50 S&P Global Infra & Lrg-MidCap Com & Resources +2% 1QL	0.00%	100.00%	0.00%	0.0%
75/25 S&P Global Infra & Lrg-MidCap Com & Resources +2% 1QL	100.00%	0.00%	0.00%	0.0%
CPI + 5%	0.00%	0.00%	0.00%	100.0%
	100.0%	100.0%	100.0%	100.0%

Private RA Secondary Benchmark

As of:	9/1/14
Cambridge Associates Private Natural Resources 1 Qtr Lag	50.0%
Cambridge Associates Private Infrastructure 1 Qtr Lag	50.0%
	100.0%

Real Estate Benchmark

As of:	1/1/09	6/1/00	7/1/96
10 Year Treasury +2%	0.0%	0.0%	100.0%
NCREIF ODCE	100.0%	0.0%	0.0%
NCREIF Property	0.0%	100.0%	0.0%
	100.0%	100.0%	100.0%

Policy Index and Benchmark History

Period Ending: December 31, 2021

Baillie Gifford Benchmark	As of:	
	1/1/14	5/1/12
MSCI ACWI ex-US	100.0%	0.0%
MSCI EAFE	0.0%	100.0%
	100.0%	100.0%

Baillie Gifford Secondary Benchmark	As of:	
	1/1/14	5/1/12
MSCI ACWI ex-US Growth	100.0%	0.0%
MSCI EAFE Growth	0.0%	100.0%
	100.0%	100.0%

Brigade Secondary Benchmark	As of:	
	8/1/10	
Bloomberg High Yield	50.0%	
Credit Suisse Leveraged Loans	50.0%	
	100.0%	

PIMCO Diversified	As of:	
	9/1/17	
JPMorgan EMBI Global	33.333%	
BofAMLBB-BRatedDvlpdMktsHYHdgdUSD	33.333%	
Global Agg Credit Ex EM USD hedged	33.334%	
	100.0%	

SSgA Custom Real Asset	As of:	
	5/1/20	11/1/16
Bloomberg Roll Select Commodity	25.00%	33.33%
S&P Global Large-MidCap Commodity and Resources	25.00%	33.33%
S&P Global Infrastructure	25.00%	33.34%
Bloomberg TIPS	25.00%	0.00%
	100.0%	100.0%

Acadian Asset Management

First \$50 million:	0.27% per annum
Next \$50 million:	0.225% per annum
Thereafter:	0.18% per annum

Baillie Gifford

First \$25 million:	0.60% per annum
Next \$75 million:	0.50% per annum
Next \$300 million:	0.40% per annum
Thereafter:	0.30% per annum

BlackRock-Russell 1000 Index Fund

On All Assets:	0.01% per annum
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BlackRock-MSCI ACWI ex US IMI Index Fund

On All Assets:	0.045% per annum
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DoubleLine

On All Assets:	0.30% per annum
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NISA

First \$500 million:	0.15% per annum
Next \$1 billion:	0.125% per annum
Next \$1 billion:	0.105% per annum
Next \$1.5 billion:	0.085% per annum
Thereafter:	0.065% per annum

Franklin Templeton Investment

First \$50 million:	0.40% per annum
Next \$50 million:	0.30% per annum
Thereafter:	0.25% per annum

FIAM Bond

First \$50 million:	0.25% per annum
Next \$50 million:	0.20% per annum
Next \$100 million:	0.125% per annum
Thereafter:	0.10% per annum

PanAgora Asset Management

First \$50 million:	0.25% per annum
Next \$50 million:	0.15% per annum
Thereafter:	0.10% per annum

Parametric Overlay

First \$50 million:	0.12% per annum
Next \$100 million:	0.10% per annum
Thereafter:	0.05% per annum
Plus monthly reporting fee of \$1500	

Parametric Currency Overlay

First \$250 million:	0.05% per annum
Thereafter:	0.03% per annum

PIMCO Diversified

On All Assets:	0.75% per annum
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QMA

First \$100 million:	0.55% per annum
Next \$100 million:	0.53% per annum
Thereafter:	0.49% per annum

Western Asset Management

On All Assets:	0.25% per annum
Performance Fee:	20.00%

Mondrian Investment Partners

Assets Below \$190 million

First \$20 million:	1.00% per annum
Thereafter:	0.33% per annum

Assets Above \$190 million

First \$50 million:	1.00% per annum
Next \$150 million:	0.19% per annum
Thereafter:	0.33% per annum

Manager Compliance (Net)

Period Ending: December 31, 2021

Name	Primary Benchmark	Rule 1	Rule 2	Rule 3
Acadian US MGD V	Russell 1000	--	--	--
DE Shaw	Russell 1000	R	✓	R
PanAgora Defuseq	Russell 1000	--	--	--
QMA US Small Cap	Russell 2000	R	R	R
Baillie Gifford	MSCI ACWI ex US	✓	R	✓
Mondrian	MSCI ACWI ex USA Value Gross	R	R	✓
DoubleLine	Bloomberg US Aggregate TR	--	--	--
FIAM Bond	Bloomberg US Aggregate TR	✓	✓	✓
NISA Core Bond	Bloomberg US Aggregate TR	--	--	--
Western TRU	3-Month Libor Total Return USD	✓	R	R
AG CSF Annex Dislocation Fund	Bloomberg BA Intermediate HY	--	--	--
Angelo Gordon Opportunistic	Bloomberg US Aggregate TR	✓	--	✓
Angelo Gordon Credit Solutions	Bloomberg BA Intermediate HY	--	--	--
Beach Point Select	Bloomberg BA Intermediate HY	✓	✓	✓
Brigade Capital	Bloomberg BA Intermediate HY	✓	✓	R
PIMCO Diversified	Blended PIMCO Diversified Index	--	--	--
Franklin Templeton	Bloomberg Multiverse TR	--	--	--
Blackrock DL Feeder IX-U	Cliffwater Direct Lending Index	--	--	--
PIMCO Private Income	Bloomberg BA Intermediate HY	--	--	--
TCP Direct Lending VIII	Cliffwater Direct Lending Index	R	✓	✓
White Oak Yield	Cliffwater Direct Lending Index	--	--	--
White Oak YSF V	Cliffwater Direct Lending Index	--	--	--
Aberdeen Standard GARS	Absolute Return Custom Index	R	R	R
Acadian MAAR Fund LLC	Absolute Return Custom Index	--	--	--
CFM Systematic Global Macro	Absolute Return Custom Index	--	--	--
Graham Quant Macro	Absolute Return Custom Index	--	--	--
PIMCO MAARS Fund LP	Absolute Return Custom Index	--	--	--

Rule 1 - Manager has underperformed the benchmark index for the five year period.

Rule 2 - Manager has underperformed the 50th percentile in the appropriate style universe for the five year period.

Rule 3 - Excess 5 Year Sharpe Ratio vs. Benchmark is positive

Manager Compliance (Gross)

Period Ending: December 31, 2021

Name	Primary Benchmark	Rule 1	Rule 2	Rule 3
Acadian US MGD V	Russell 1000	--	--	--
DE Shaw	Russell 1000	R	✓	R
PanAgora Defuseq	Russell 1000	--	--	--
QMA US Small Cap	Russell 2000	R	R	R
Baillie Gifford	MSCI ACWI ex US	✓	✓	✓
Mondrian	MSCI ACWI ex USA Value Gross	✓	R	✓
DoubleLine	Bloomberg US Aggregate TR	--	--	--
FIAM Bond	Bloomberg US Aggregate TR	✓	✓	✓
NISA Core Bond	Bloomberg US Aggregate TR	--	--	--
Western TRU	3-Month Libor Total Return USD	✓	✓	R
AG CSF Annex Dislocation Fund	Bloomberg BA Intermediate HY	--	--	--
Angelo Gordon Opportunistic	Bloomberg US Aggregate TR	✓	--	✓
Angelo Gordon Credit Solutions	Bloomberg BA Intermediate HY	--	--	--
Beach Point Select	Bloomberg BA Intermediate HY	✓	✓	✓
Brigade Capital	Bloomberg BA Intermediate HY	✓	✓	R
PIMCO Diversified	Blended PIMCO Diversified Index	--	--	--
Franklin Templeton	Bloomberg Multiverse TR	--	--	--
Blackrock DL Feeder IX-U	Cliffwater Direct Lending Index	--	--	--
PIMCO Private Income	Bloomberg BA Intermediate HY	--	--	--
TCP Direct Lending VIII	Cliffwater Direct Lending Index	R	✓	✓
White Oak Yield	Cliffwater Direct Lending Index	--	--	--
White Oak YSF V	Cliffwater Direct Lending Index	--	--	--
Aberdeen Standard GARS	Absolute Return Custom Index	R	R	R
Acadian MAAR Fund LLC	Absolute Return Custom Index	--	--	--
CFM Systematic Global Macro	Absolute Return Custom Index	--	--	--
Graham Quant Macro	Absolute Return Custom Index	--	--	--
PIMCO MAARS Fund LP	Absolute Return Custom Index	--	--	--

Rule 1 - Manager has underperformed the benchmark index for the five year period.

Rule 2 - Manager has underperformed the 50th percentile in the appropriate style universe for the five year period.

Rule 3 - Excess 5 Year Sharpe Ratio vs. Benchmark is positive



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**

1ST QUARTER 2022
Investment Landscape

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Topics of interest

THE ROLE OF INCOME IN PORTFOLIOS

Many aspects of investing are fundamentally rooted in the idea that total investment return includes both investment income and investment price appreciation (growth). Nearly every asset class can be decomposed into these two characteristics—some assets being composed mostly of income and some assets being composed mostly of price appreciation. As interest rates have fallen around the world, the importance of income, and the role it plays in portfolios, has seen a dramatic increase. In this Topic of Interest, we revisit these two fundamental characteristics to provide investors with a lens with which to view decision-making in the current market environment.

INTEGRATING ACTIVE RETURN INTO ASSET ALLOCATION MODELING

Long-term asset class forecasts, or capital market assumptions, typically focus on the future performance of broad markets. However, most investors employ some combination of passive and active management in their portfolios. And active management is most often pursued with the expectation that returns will be different than that of the broad market (specifically, that “active return” will be achieved above and beyond the market return). If capital market assumptions are typically comprised of market forecasts, but investors tend to build portfolios with the expectation of market return plus active return, how might investors estimate the expected behavior of active management (active return) in their asset allocation work? In this Topic of Interest we look at this question from multiple angles.

Annual research

2022 CAPITAL MARKET ASSUMPTIONS

Some important developments occurred in the last year. During our 2022 Capital Market Assumptions webinar, we discussed:

- Market movements of 2021 and how these shifts have improved our long-term outlook,
- The impact of rising inflation and interest rates on asset class expectations,
- And our newly released forecasts for specific hedge fund styles, and forecasts for various strategies/approaches with the private credit universe.

Verus business update

2021

- We celebrated our 35th anniversary. Wurts Johnson & Company (founding name) was established in January 1986.
- Eight employees passed their CFA exams, including two who passed Level III, earning their charters. Verus now has a total of 32 CFA charterholders.
- Jeff MacLean, CEO, was awarded the 2021 Knowledge Broker Award by CIO Magazine in September.
- Verus expanded the ownership group to 30 employees. 95% of senior consultants are shareholders.
- We continued to grow our Pittsburgh footprint by adding three professionals for a total of five and moved to a new space on Liberty Avenue. Verus established our “east coast” office in Pittsburgh, PA in May 2020.
- Our national client footprint expanded to 23 states, with our recent additions of clients in Massachusetts, Illinois, and Texas.
- Our assets under advisement has reached over \$664 billion, as a result of strong markets and success in retaining several new clients. Our OCIO business saw continued growth as well, surpassing \$5 billion in assets.
- We completed a third-party verification process that supports our claim of GIPS* compliance and have implemented the verified GIPS and policies and procedure for our OCIO performance composites. We have 17 unique composites. Our E&F and Taft-Hartley composites now have >5-year track records.
- The IIDC grew to 24 consulting firms with over \$32 trillion in assets under advisement. Verus founded the Institutional Investing Diversity Cooperative in December 2020, leading a call to action in the consulting industry for disclosure of asset manager diversity data at the investment team level.

2022

- Managing Director | Senior Consultant, Margaret Jadallah plans to retire towards the end of the year.



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4th quarter summary

THE ECONOMIC CLIMATE

- Real GDP grew at a 4.9% rate year-over-year in the third quarter (+2.3% quarterly annualized rate). A slowdown in consumer spending contributed to a lower rate of growth. This was due to a combination of factors, including new COVID-19 restrictions, a delay in the reopening of businesses across the country, and general fear of virus spread which has led to less spending on services. **p. 9**
- The U.S. labor market improved further, as unemployment fell from 4.8% to 3.9%. The labor force participation rate has also improved, though very gradually, rising from 61.6% to 61.9%. **p. 14**

PORTFOLIO IMPACTS

- Credit spreads have reached extremely tight levels. High yield bonds traded at a credit spread of 283 bps at year-end. However, these spread levels may be justified by record-low bond default activity. Just 0.4% of U.S. high yield bonds defaulted in 2021, on a par-weighted basis. **p. 24**
- U.S. core CPI increased 5.5% year-over-year in December. Headline inflation, which includes all goods, reached 7.0%. Large price increases have occurred across many goods and services, though approximately half of the rise in inflation continues to be driven by energy prices and automobiles. **p. 13**

THE INVESTMENT CLIMATE

- In December it was announced that Senator Joe Manchin had communicated a hard “No” regarding his support for the Build Back Better bill. For months, Democrats have sought a solution to the disparate needs and spending interests of their party. **p. 12**
- Extremely fast spread of the Omicron variant worldwide does not seem to have had an outsized impact on the markets. While this new wave has in fact led to shutdowns in certain economies, much of the world has remained open, perhaps in acknowledgment that the health effects of Omicron are believed to be milder in nature. **p. 10**

ASSET ALLOCATION ISSUES

- Equity markets delivered strong returns in Q4, up +6.7% and ending the year up 18.5% (MSCI ACWI). U.S. equities delivered 11.0% during the quarter, while international equities delivered 2.7% and emerging market equities saw a slight loss of -1.3%, on an unhedged currency basis. **p. 27**
- Size and Value factor performance was negative once again during Q4. Large capitalization stocks significantly outperformed small capitalization stocks and Growth beat Value. Tighter monetary conditions and a pullback in some growth stocks has renewed talks of a possible Value rotation. **p. 29**

Risk assets continue to perform strongly, despite rapid global spread of the Omicron variant

What drove the market in Q4?

“World is put on high alert over the Omicron coronavirus variant”

NUMBER OF NEW DETECTED COVID-19 INFECTIONS WORLDWIDE (MILLIONS)

Jul	Aug	Sep	Oct	Nov	Dec
15.6	19.9	16.0	13.0	15.7	25.4

Article Source: CNN, as of November 28th, 2021

“Transitory’ is out for describing inflation at the Fed... what will take its place?”

HEADLINE CONSUMER PRICE INFLATION (YEAR-OVER-YEAR)

Jul	Aug	Sep	Oct	Nov	Dec
5.4%	5.3%	5.4%	6.2%	6.8%	7.0%

Article Source: MarketWatch, December 15th, 2021

“Unphased by Omicron, Fed policymakers show greater consensus for faster taper”

FEDERAL RESERVE BALANCE SHEET SIZE (TRILLIONS)

Jul	Aug	Sep	Oct	Nov	Dec
\$8.2T	\$8.3T	\$8.4T	\$8.6T	\$8.7T	\$8.8T

Article Source: Reuters, December 2nd, 2021

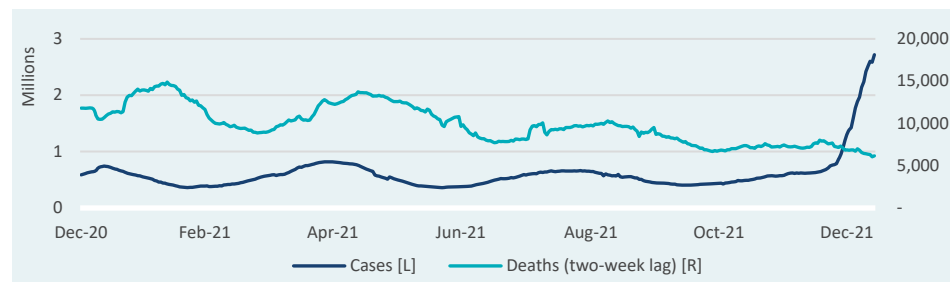
“Dow, S&P 500 end at all-time records as U.S. stocks extend winning streak amid strong company earnings”

S&P 500 INDEX – NUMBER OF CUMULATIVE YEAR-TO-DATE RECORD CLOSES

Jul	Aug	Sep	Oct	Nov	Dec
41	53	54	59	66	70

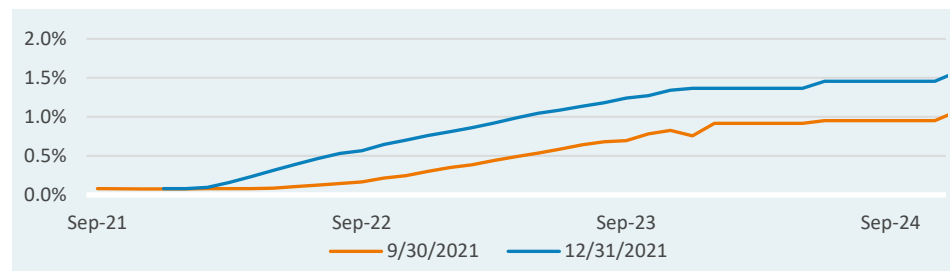
Article Source: October 26th, 2021

GLOBAL CASE GROWTH VS. LAGGED DEATHS (7-DAY TRAILING AVERAGE)



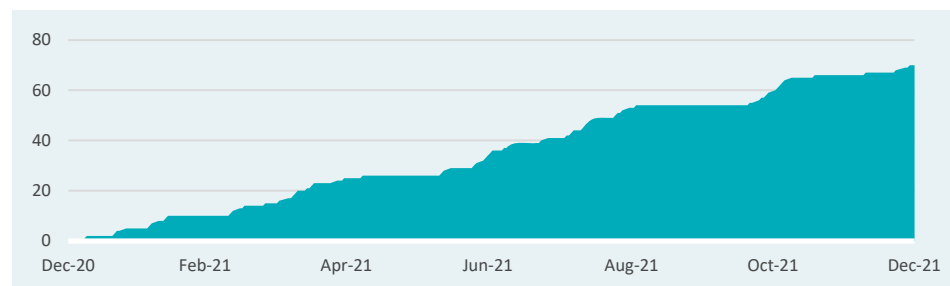
Source: Bloomberg, as of 12/31/21

IMPLIED EFFECTIVE FED FUNDS RATE



Source: Bloomberg, as of 12/31/21

S&P 500 INDEX – CUMULATIVE NUMBER OF RECORD CLOSES IN 2021



Source: Standard & Poor's, Bloomberg, as of 12/31/21

Economic environment

U.S. economics summary

- Real GDP grew at a 4.9% rate year-over-year in the third quarter (+2.3% quarterly annualized rate). A slowdown in consumer spending contributed to a lower pace of growth. This was due to a combination of factors, including new COVID-19 restrictions, a delay in the reopening of businesses, and general fear of virus spread which has led to less spending on services. As GDP growth is stated in *inflation-adjusted* terms, higher inflation has also contributed to slower economic growth.
- U.S. core CPI, which excludes food and energy prices, increased 5.5% year-over-year in December. Headline inflation, which includes all goods, reached 7.0%. Large price increases have occurred across many goods and services, though approximately half of the rise in inflation continues to be driven by energy prices and automobiles.
- The U.S. unemployment fell further, from 4.8% to 3.9% during Q4. The labor force participation rate has improved, though very gradually, rising from 61.6% to 61.9%.
- After months of political brinksmanship, it appears the Build Back Better plan has stalled, as Senator Joe Manchin had communicated a hard “No” on his support for the Build Back Better bill. Democrats continue to seek a solution to the disparate needs and spending interests of their party.
- U.S. home prices increased +19.1% over the past year ending October. However, price growth may be cooling off, as the inventory of homes has expanded materially and mortgage interest rates have begun to rise.
- Consumer sentiment was mixed during the quarter. Depressed survey levels suggest we are no longer in the euphoric spending environment of mid to late 2021.

	Most Recent	12 Months Prior
Real GDP (YoY)	4.9% 9/30/21	(2.9%) 9/30/20
Inflation (CPI YoY, Core)	5.5% 12/31/21	1.6% 12/31/20
Expected Inflation (5yr-5yr forward)	2.3% 12/31/21	2.0% 12/31/20
Fed Funds Target Range	0% – 0.25% 12/31/21	0% – 0.25% 12/31/20
10-Year Rate	1.51% 12/31/21	0.91% 12/31/20
U-3 Unemployment	3.9% 12/31/21	6.7% 12/31/20
U-6 Unemployment	7.3% 12/31/21	11.7% 12/31/20

GDP growth

Real GDP grew at a 4.9% rate year-over-year in the third quarter (+2.3% quarterly annualized rate). During the quarter, a slowdown in consumer spending resulted in a lower pace of growth. This was partly a factor of new COVID-19 restrictions and a delay in the reopening of businesses across the country. Fear of contracting the virus likely led to less spending on services. Government assistance to businesses and households also continued to fall, creating a drag on growth. On the other hand, a strong rebuilding of inventories by businesses had a large positive impact on economic growth.

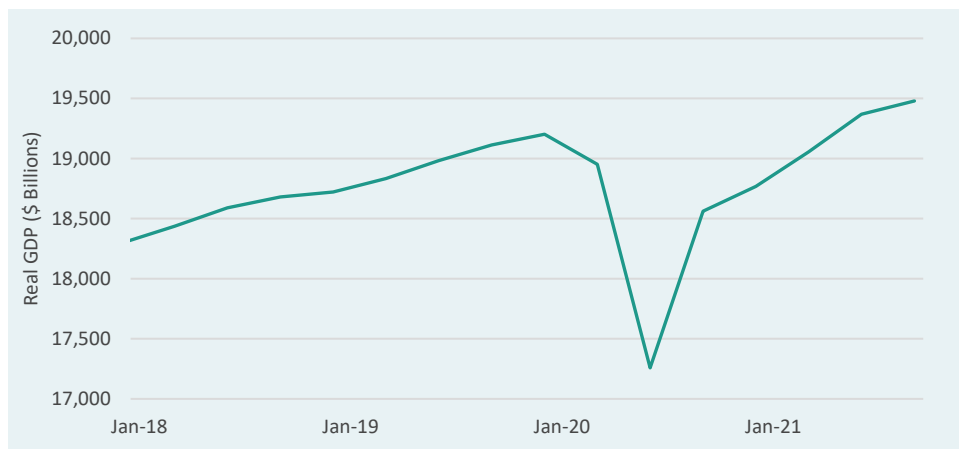
Although Q3 showed a weaker rate of growth, expectations more broadly are for further strong economic expansion—

materially above pre-pandemic rates. The Atlanta Fed GDPNow estimate, as of January 14th, suggests a GDP growth rate of 6.8% in the fourth quarter (seasonally-adjusted quarterly annualized rate).

U.S. GDP growth is traditionally quoted in *inflation-adjusted* terms. This means that higher inflation has contributed to slower GDP growth, as shown below. It will be important to watch the rate of inflation and the impact of higher inflation on GDP figures. Multiple past U.S. recessions were caused at least partially by rising inflation rather than solely by slowing growth (see 1970s, 1980s).

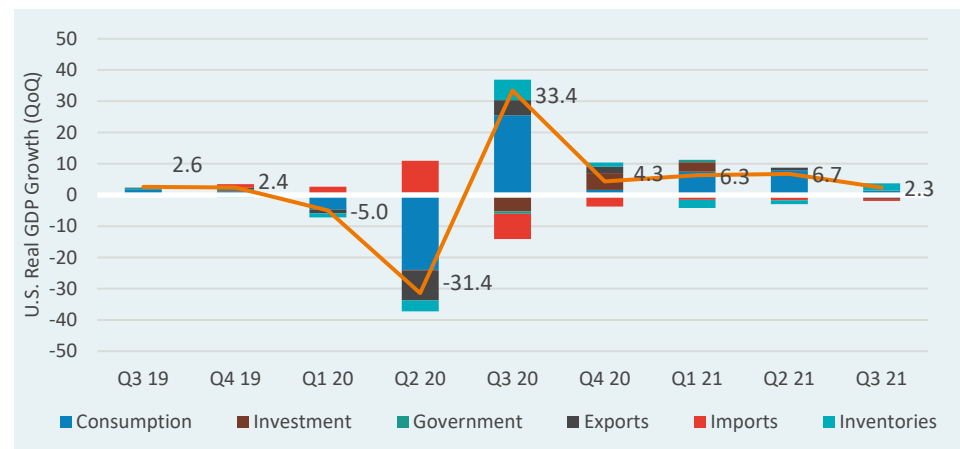
Although Q3 was relatively weak, economists expect continued above-average GDP growth

U.S. REAL GROSS DOMESTIC PRODUCT



Source: FRED, as of 9/30/21

U.S. REAL GDP COMPONENTS (QOQ)



Source: FRED, as of 9/30/21

Omicron variant

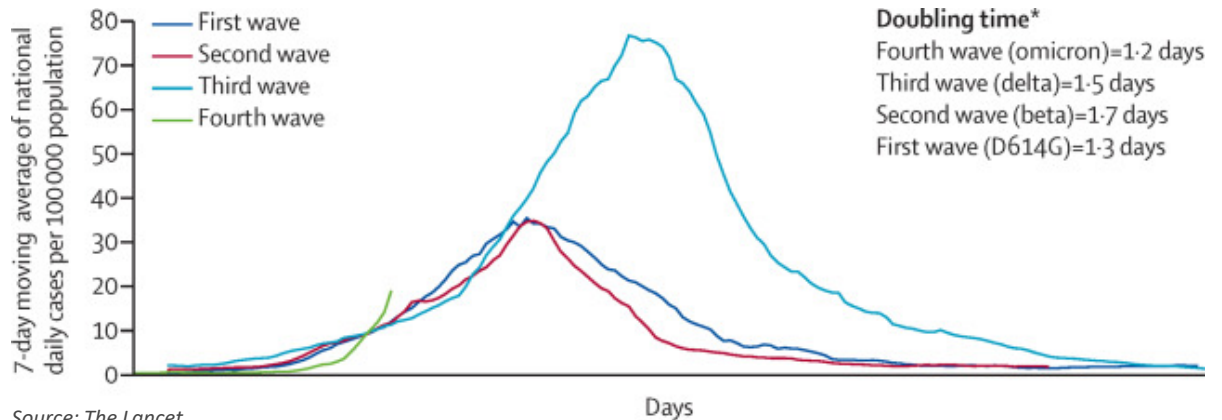
COVID-19 variant B.1.1.529 (Omicron) was discovered in Botswana on November 11th and has since spread exponentially around the globe, replacing the delta variant as the dominant global strain.

Based on available studies and data, the Omicron variant is much more infectious than prior variants, but its symptoms are less severe. In the Gauteng province within South Africa, the doubling time of cases proved to be faster than each of the previous three waves at 1.2 days

While case growth has accelerated more quickly than in previous waves in South Africa, hospitalizations and deaths have not paced the increase in cases, leaving some to predict that symptoms may be less severe.

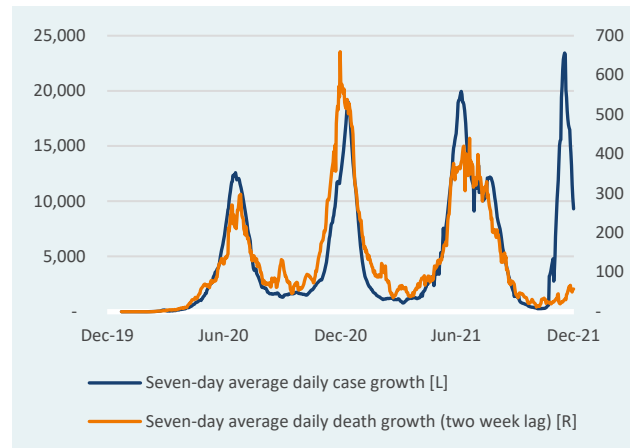
Some have argued that it is a good thing that a highly infectious but not severe strain is spreading around the world, because it will provide some level of neutralizing antibodies to the people it infects, shortening the path to herd immunity. A more pessimistic view would be that “letting it rip” would allow more time for the virus to mutate to a more deadly strain.

COVID WAVE CASE DOUBLING TIME – GAUTENG PROVINCE, SOUTH AFRICA



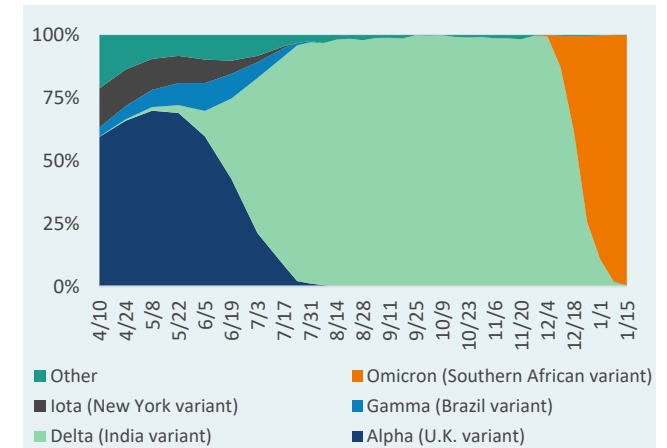
Source: The Lancet

SOUTH AFRICAN CASES AND DEATHS



Source: Bloomberg, as of 12/31/21

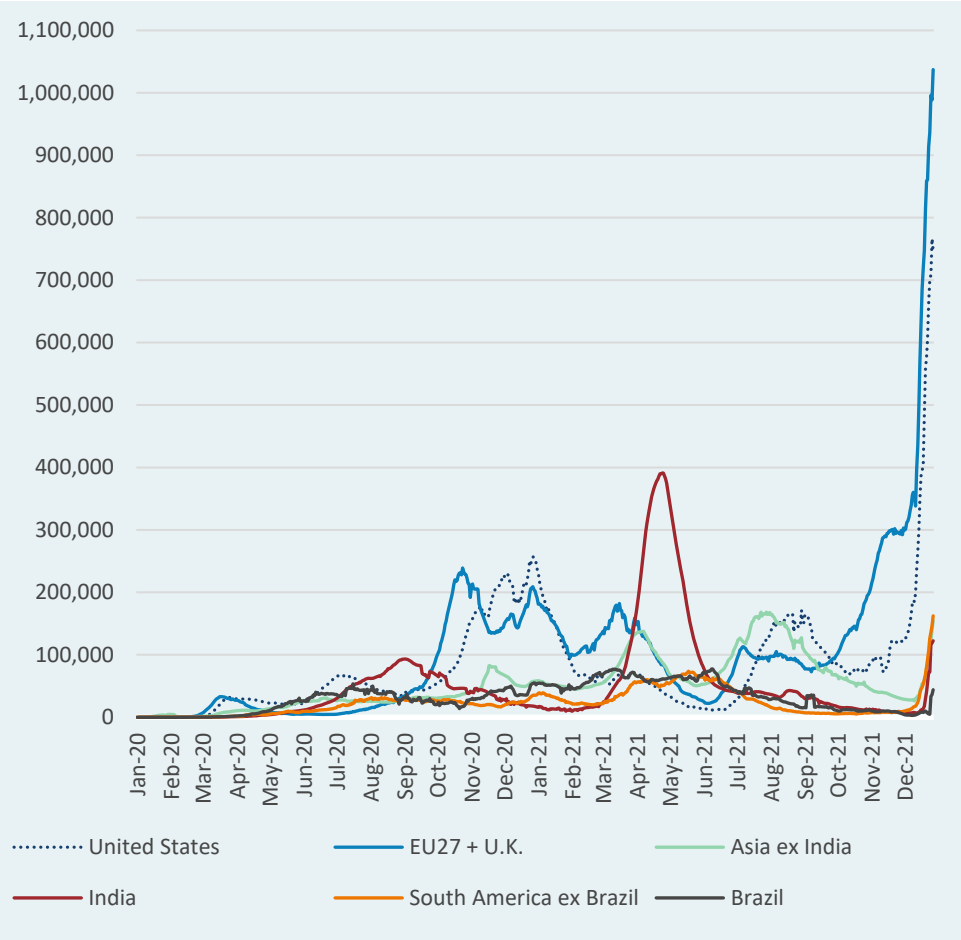
STRAIN DOMINANCE IN THE UNITED STATES



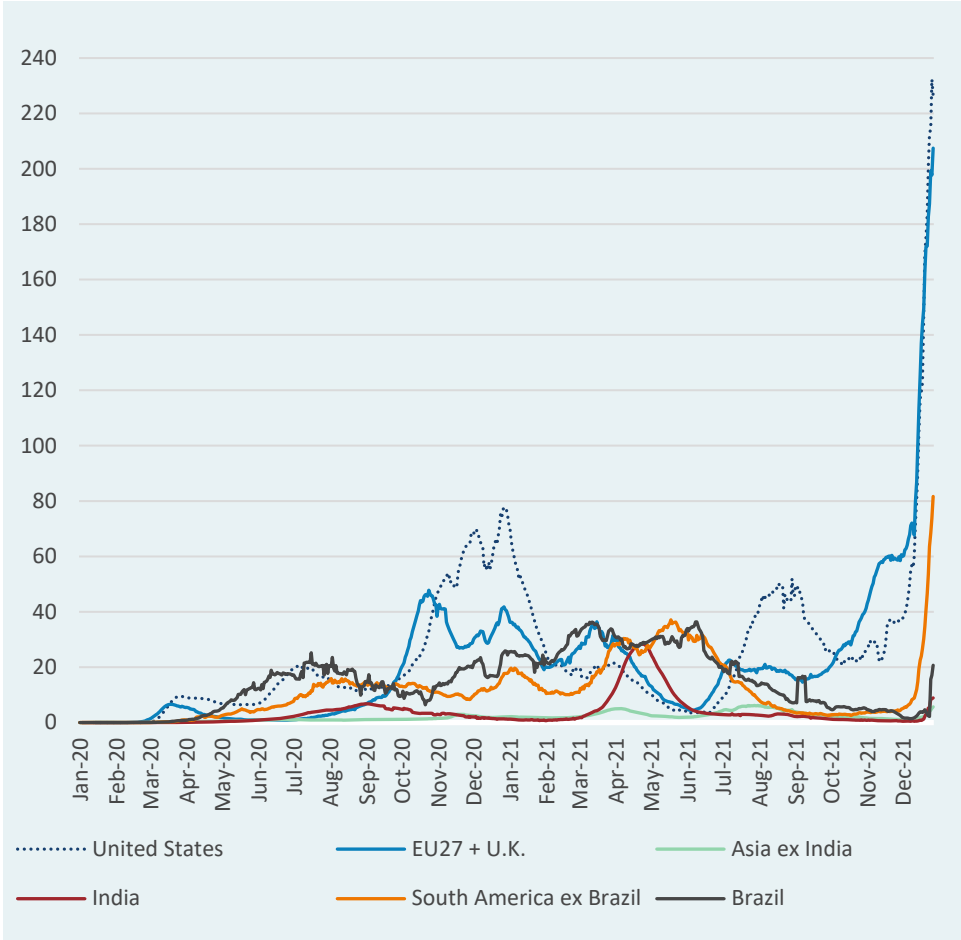
Source: CDC, as of 1/15/22

COVID-19 case growth monitors

DAILY AVERAGE CASE GROWTH (SEVEN-DAY TRAILING)



DAILY AVERAGE CASE GROWTH (SEVEN-DAY TRAILING) – PER 100,000



Source: Bloomberg, as of 1/11/22

“Build Back Better” update

After months of political brinksmanship, it appears the BBB plan has stalled

- For months, Democrats have sought a solution to the disparate needs and spending interests of their party. This ranged from the more aggressive spending demands of Bernie Sanders, who hoped for a total of nearly \$6 trillion in new spending, to Senator Joe Manchin who had expressed throughout the year a willingness to support a maximum of \$1.5 trillion in new spending. In December it was announced that Senator Joe Manchin communicated a hard “No” regarding his support for the bill.
- The party appears to have taken a calculated risk in continuing to push for spending in excess of the \$1.5 trillion limit that Joe Manchin had indicated, as well as refusing to negotiate on other items where disagreement existed, such as tax credits and climate change legislation. Despite DNC claims that the Build Back Better would not raise the national deficit, Manchin also expressed skepticism around sunset clauses and other assumptions within the bill that he believed hid the true magnitude of spending and its likely impact on the U.S. deficit.
- Some remain hopeful for a revival of negotiations and perhaps an agreement on many or most of the items within the bill. However, in January Senator Manchin indicated that he will not support the bill altogether—a reversal from the sentiments expressed during earlier negotiations.

Inflation

U.S. core CPI, which excludes food & energy prices, increased 5.5% year-over-year in December. Headline inflation, which includes all goods, reached 7.0%. Large price increases have occurred across many goods and services, though approximately half of the rise in inflation continues to be driven by energy prices and automobiles. Inflation has proven more “sticky”, which suggests that higher prices may be less transitory than previously believed.

The price of shelter continue to be a notable driver of U.S. inflation, as shelter costs have risen 4.1% over the past year. Although the rate of price growth in this area has been fairly modest, the cost of shelter makes up nearly one third of the overall CPI basket (32.4% as of November). As we have mentioned

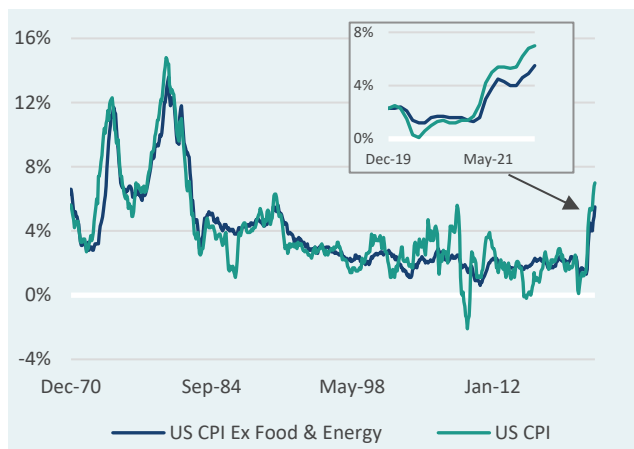
previously, the way in which housing costs are captured in official statistics is nuanced, and increases in home prices do not necessarily flow through directly to official inflation numbers. Instead, today’s higher shelter costs may take quarters or even years to show up in government statistics.

We maintain our view that inflation will most likely begin falling towards previous levels later in 2022, though this could be a slower process. The variables that will likely impact this outcome include: whether energy and automobile prices plateau, the speed at which supply chain problems are resolved, and the willingness of businesses to raise wages in line with rates of inflation (quickly rising wages could further pressure prices upward).

Inflation has proven more “sticky”

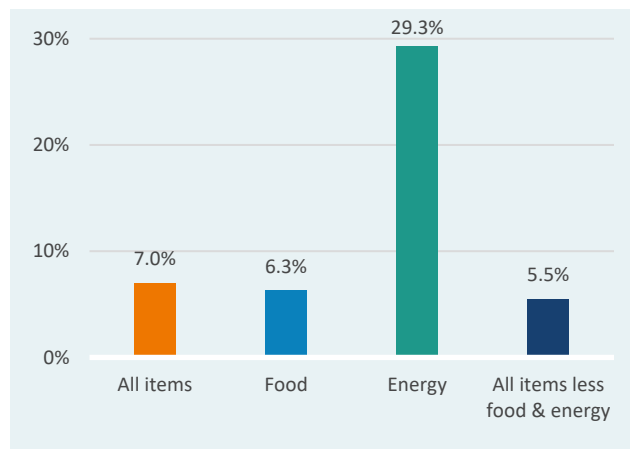
Higher prices may be less transitory than previously believed

U.S. CPI (YOY)



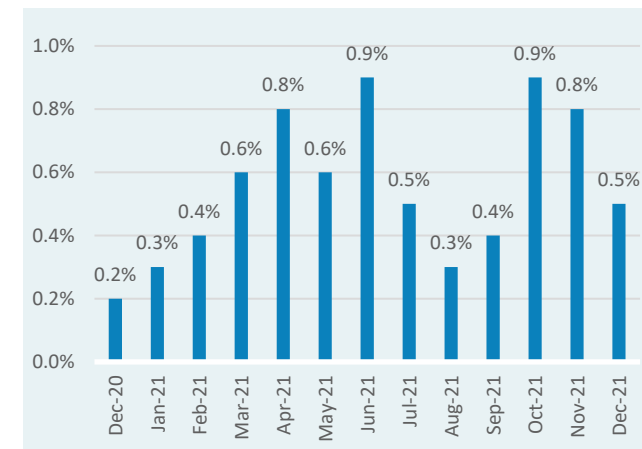
Source: BLS, as of 12/31/21

U.S. CPI (YOY)



Source: BLS, as of 12/31/21

MONTHLY PRICE MOVEMENT



Source: BLS, as of 12/31/21

Labor market

The U.S. unemployment rate fell further, from 4.8% to 3.9% during Q4. The labor force participation rate has improved, though very gradually, rising from 61.6% to 61.9%. The U.S. labor shortage has reached historic proportions. Job openings far exceed the supply of workers. As of November, 10.5 million job openings were posted, while only 6.8 million Americans were seeking work.

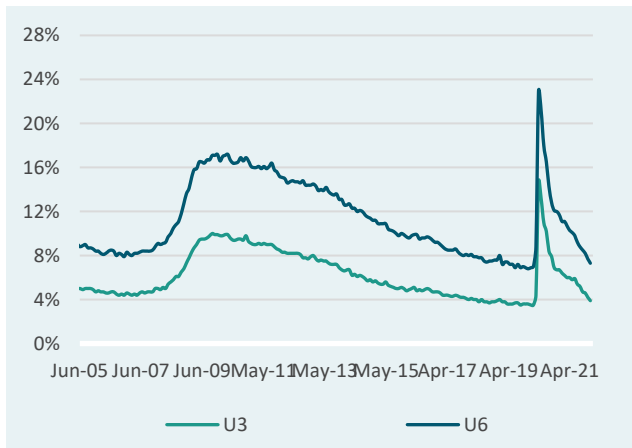
In 2021, using U.S. government employment and retirement data, we reached a conclusion that the sudden and historically large quantity of workers leaving the labor force was mostly caused by early retirements. At the time, multiple theories had

been proposed, such as COVID-19 fear (workers were not seeking employment due to a fear of human interaction) or that this was due to government aid and stimulus (workers flush with cash were finding it temporarily unnecessary to hold a job). Over recent quarters it does appear that our thesis has held. The U.S. labor force participation rate remains stuck, as two million abnormally early retirements imply that the available workforce is now permanently smaller. This reduction in workforce likely reduces the productive capacity of the U.S. economy and aggregate household income, though it may have an incremental lifting effect on the wages of existing workers.

A portion of the U.S. labor force remains neither employed nor seeking work

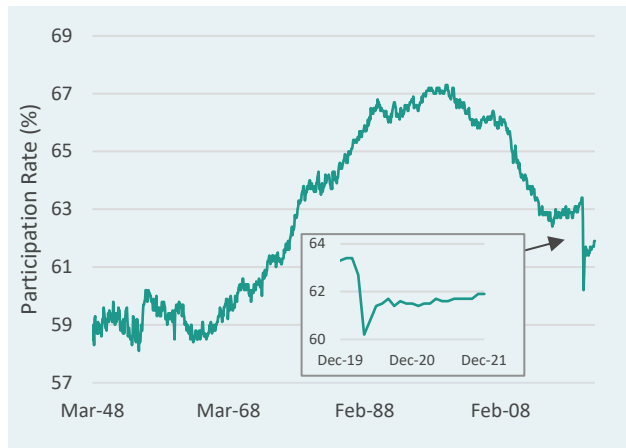
Much of this loss appears to be due to early retirements

U.S. UNEMPLOYMENT



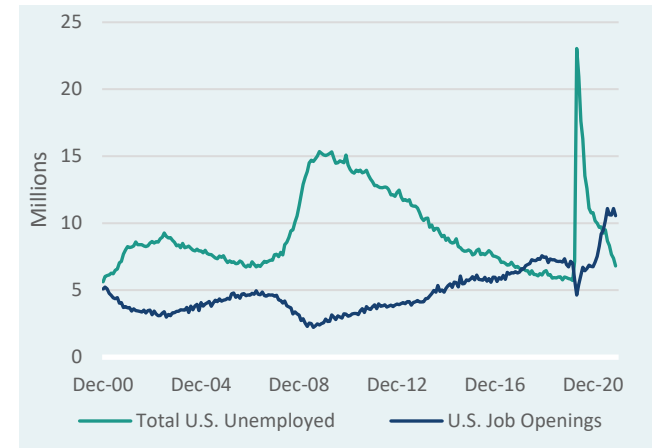
Source: FRED, as of 12/31/21

LABOR PARTICIPATION RATE



Source: FRED, as of 12/31/21

UNEMPLOYED VS # JOBS AVAILABLE



Source: FRED, as of 11/30/21

Labor costs & shortages

“We could see mid-single-digit inflation in retails, as **rising raw material pricing, labor and transportation costs are all impacting us and our suppliers**. We have no way to say how long this will last, but our industry has been disciplined about pricing for decades, and we expect that to continue.” -AutoZone (Dec. 7)



“Moving on to inflation, again, it's pretty much the same story that we told during each of the last two quarters. **There have been and are a variety of inflationary pressures that we and others are seeing from labor cost to freight cost, to higher demand, to container shortages and port delays, to increased demand on certain product categories**, much of what you see and read out there. Various shortages on everything from chips to oils and chemicals supplied by facilities hit by the Gulf storms a while back. Higher commodities prices.” -Costco (Dec. 9)



“To further impact our second-quarter results, I will highlight several key drivers. **The difficult labor market once again had the largest effect on our bottom line, representing an estimated \$470 million in additional year-over-year costs**. As I did last quarter, I'll separate the effect of the labor market into two components: **higher rates and network inefficiencies resulting from labor shortages**.” -FedEx (Dec. 16)



“To add to the challenge, **industry-wide shortages in the labor market are impacting every part of the supply chain, adding significant costs that are above and beyond inflation**. We're seeing record levels of **disruptions across our raw material suppliers, internal and external production facilities, our own distribution centers, our customers' warehouses and the logistics networks required to connect each of these elements of the supply chain**. These disruptions are resulting in service challenges and elevated costs across the industry.” -General Mills (Dec. 21)



“**Lost production days and unplanned downtimes** were primarily due to **labor shortages** across our manufacturing network, including **COVID-related absenteeism**.” -Lamb Weston (Jan. 6)



Source: FactSet, as of 1/13/22

The consumer

U.S. real retail sales remain strong, up 10.6% year-over-year. It is worth noting that this was the growth rate *after* adjusting for inflation. American households continue to spend at a rapid pace, though this could be set to slow down as government spending and other easy money policies are likely in the rearview mirror.

Auto sales volumes fell dramatically in the second half of 2021. Multiple variables are having an impact, as microchip shortages crimp new car production, many households already purchased a vehicle recently (assisted by stimulus checks), and very high auto prices have disincentivized purchases more generally.

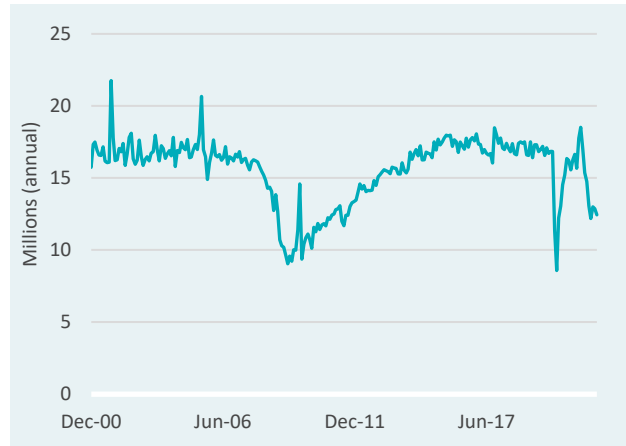
A rather surprising economic result of the pandemic has been the jump in household savings rates, paying down of debt, and broadly improved financial situation of domestic households. As we have discussed in recent quarters, the inability of Americans to take vacations during much of the past two years, as well as reduced spending on services such as dining out, meant greater saving and less spending. However, it is incredibly important to point out that economic metrics such as the ones discussed here inherently involve an *averaging* of all household situations. The recent recession has had particularly destructive effects on specific sectors of the economy, and many have yet to recover.

REAL RETAIL SALES GROWTH (MONTHLY)



Source: FRED, as of 11/30/21

AUTO SALES



Source: Federal Reserve, as of 12/31/21

U.S. HOUSEHOLD DEBT BURDEN



Source: FRED, as of 9/30/21 – household debt service payments as a percent of disposable personal income

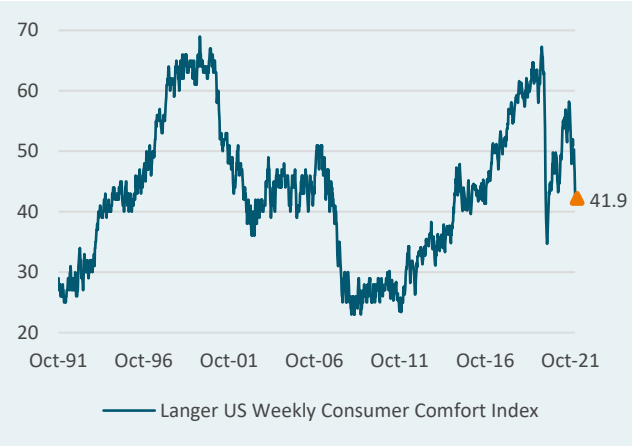
Sentiment

Consumer sentiment was mixed during the quarter. The University of Michigan survey indicated relatively depressed but stable sentiment. Announced increases to Social Security payments (+5.9% YoY) due to inflation and a rise in wages among younger workers lifted sentiment slightly. On the other hand, the Langer U.S. Weekly Consumer Comfort Index suggested a sharp falloff in sentiment. Rising inflation, the spreading Omicron variant, and the steepest one week drop in “buying conditions” in 36 years translated to much poorer sentiment to start 2022. Both surveys seem to communicate an end to the euphoric spending spree that occurred in mid to late 2021.

The NFIB Small Business Optimism index was rangebound during the quarter but remained near the long-term average level. As outlined by the survey, 59% of small businesses have increased prices, which was the highest reading since 1979. The December survey suggests that business conditions are not encouraging to small business owners, as new government mandates and tax increases have been discussed in the legislature. Furthermore, high inflation and supply chain issues continue to create challenges.

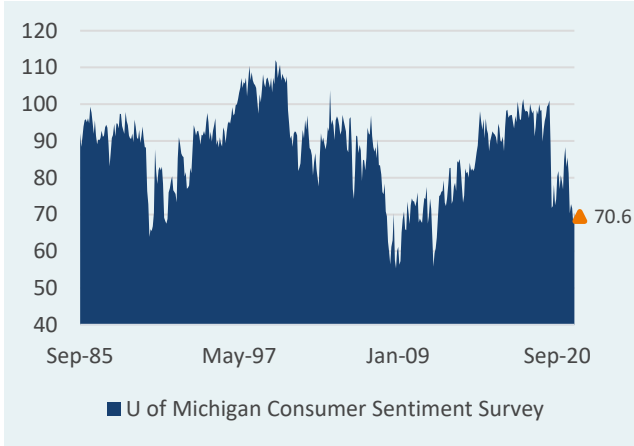
Sentiment remains depressed, as concerns exist around inflation, Omicron, and economic restrictions

CONSUMER COMFORT



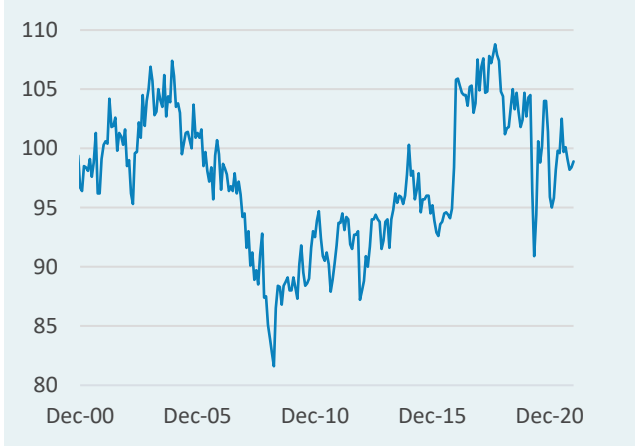
Source: Bloomberg, as of 1/9/22

CONSUMER SENTIMENT



Source: University of Michigan, as of 12/31/21

SMALL BUSINESS OPTIMISM



Source: NFIB, as of 12/31/21

Housing

U.S. home prices increased +19.1% over the past year, ending October. However, price growth may be cooling off, as the inventory of homes has expanded materially and mortgage interest rates have begun to rise. The dramatic surge in real estate values throughout the pandemic resulted in considerable wealth gains for those who owned homes, but has also created real financial issues for many who rent as housing costs have risen faster than incomes.

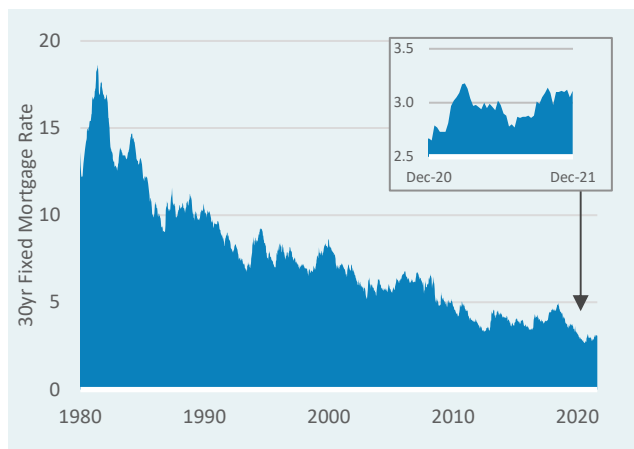
Much higher living costs may lead to further social unrest and political discussions on topics such as the relaxation of

zoning restrictions and rent control. The growing homeless crisis in many U.S. areas further compounds the need, both real and perceived, for bringing the costs of housing under control.

U.S. mortgage rates have risen off the all-time-low (2.65%) achieved earlier in 2021. During the first week of January, the 30-year average fixed rate mortgage reached 3.22%. Given high home prices, small increases in interest rates will have a larger impact on affordability. Higher borrowing costs would act as a headwind to further home price appreciation.

A dramatic jump in shelter costs may be adding pressure to household budgets

30YR FIXED MORTGAGE RATE (AVERAGE)



Source: U.S. Census Bureau, as of 12/31/21

SUPPLY OF HOMES



Source: FRED, as of 11/30/21

CASE-SHILLER HOME PRICE INDEX



Source: FRED, as of 10/31/21

International economics summary

— COVID-19 variant B.1.1.529 (Omicron) was discovered in Botswana on November 11th and has since spread exponentially around the globe, replacing the delta variant as the dominant global strain. Based on available studies and data, the Omicron variant is much more infectious than prior variants, but its symptoms are less severe. Many countries have taken a cautious approach and have reinstated social distancing controls.

— Several countries including China and New Zealand have implemented zero-COVID approaches with the goal of completely eradicating the virus within their borders. These policies may present upside risks for inflation looking ahead, as they are likely to result in more uncertainty and therefore potentially sustain or even worsen current supply chain problems.

— Prices paid by global producers of

goods and services have surged over the last year. Chinese producer price growth (+10.3% in December) hit its highest level in 26 years, and German producer prices (+19.2% in November) grew very quickly as supply chain disruptions squeezed prices for timber and raw metal materials.

— Eurozone GDP grew +3.7% year-over-year in Q3, lagging U.S. growth over the same period (+4.9%). Economic growth was more robust in Italy (+3.8%) and a bit weaker in Germany (+2.5%).

— China's real estate crisis seems to be spreading. In early December, Evergrande, one of the largest property developers in China, defaulted on its debt. An increasing number of Chinese property developers have been strained. Given that real estate development makes up nearly one third of China's economy, a crisis in this sector could have serious ramifications.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	4.9% 9/30/21	7.0% 12/31/21	3.9% 12/31/21
Eurozone	3.9% 9/30/21	5.0% 12/31/21	7.2% 11/30/21
Japan	1.2% 9/30/21	0.8% 12/31/21	2.7% 11/30/21
BRICS Nations	5.2% 9/30/21	3.3% 12/31/21	5.4% 6/30/21
Brazil	4.0% 9/30/21	10.1% 12/31/21	12.1% 10/31/21
Russia	4.3% 9/30/21	8.4% 12/31/21	4.3% 11/30/21
India	8.4% 9/30/21	5.6% 12/31/21	7.9% 12/31/21
China	4.0% 12/31/21	1.5% 12/31/21	5.1% 12/31/21

NOTE: India lacks reliable government unemployment data. Unemployment rate shown above is estimated from the Centre for Monitoring Indian Economy. The Chinese unemployment rate represents the monthly surveyed urban unemployment rate in China.

International economics

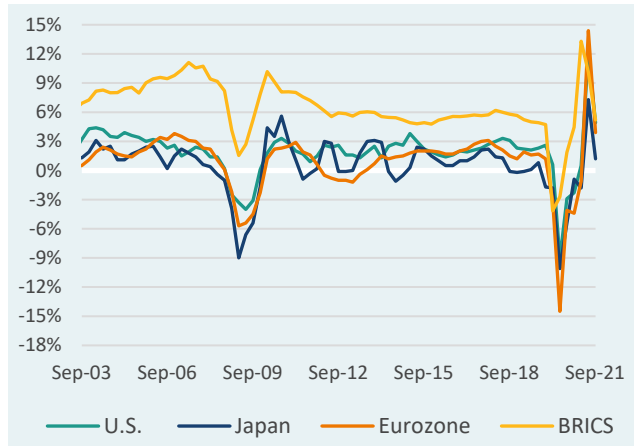
The rate of economic growth across most economies has moved back towards average levels, as the global recession and recovery fades from the rearview mirror. In October, the International Monetary Fund cut their 2021 advanced economy growth projections (from 5.6% to 5.2%), citing supply chain disruptions which have dampened the outlook for these economies. Worsening pandemic dynamics were flagged as a greater risk for emerging and developing economies, though 2021 growth expectations were revised up 0.1% to 6.4%.

Inflation moved higher in many areas, and the United States continues to cope with one of the highest rates of inflation among other major developed economies. Several countries

including China and New Zealand have implemented zero-COVID approaches with the goal of completely eradicating the virus within their borders. These policies may present upside risks for inflation looking ahead, as they are likely to result in more uncertainty and therefore potentially sustain or even worsen current supply chain problems. Inflation trends and the reaction of central banks to these trends will have important implications for markets.

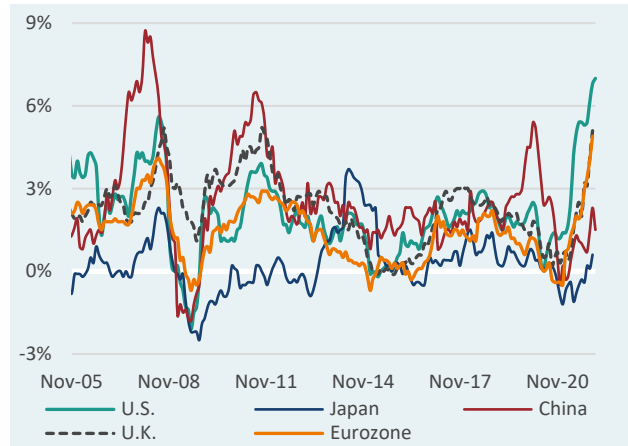
Unemployment has generally improved to pre-pandemic levels, as government restrictions are relaxed, people regain comfort in moving out and about, and economies trend back towards normalcy.

REAL GDP GROWTH (YOY)



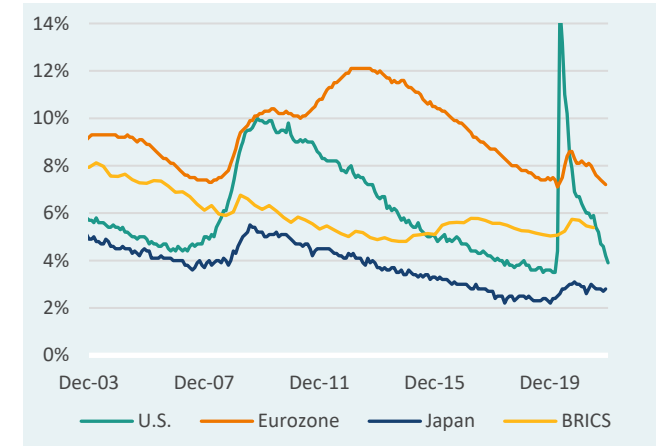
Source: Bloomberg, as of 9/30/21

INFLATION (CPI YOY)



Source: Bloomberg, as of 12/31/21 – or most recent release

UNEMPLOYMENT



Source: Bloomberg, as of 12/31/21 – or most recent release

Fixed income rates & credit

Fixed income environment

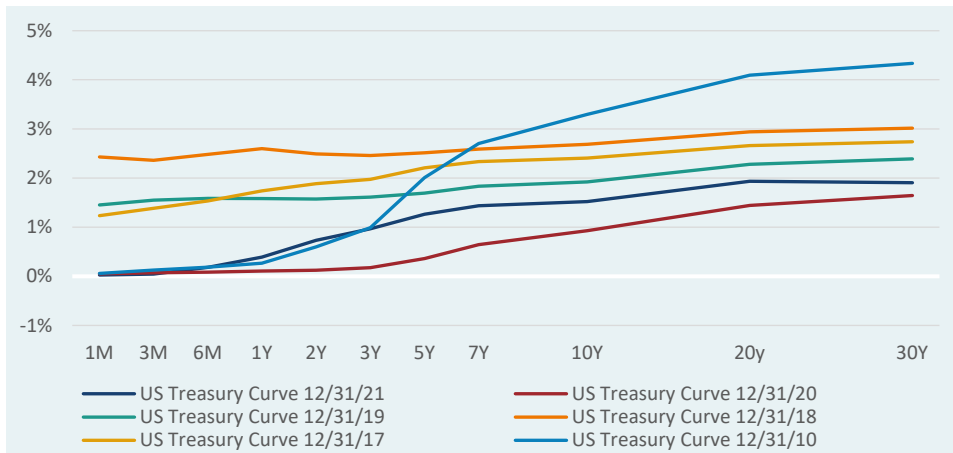
- The 10-year U.S. Treasury yield was relatively rangebound during the quarter, remaining at a yield of 1.5%. Thus far, U.S. interest rates have not noticeably reacted to an inflation rate of 7.0%. Market pricing seems to indicate that investors generally expect inflation to be transitory—perhaps falling towards normal levels by the end of this year.
- One of the largest stories over the quarter was the Fed’s pivot on inflation, the retirement of the word “transitory” to describe inflation, and a more aggressive policy path expected by investors. The conversation around the balance sheet shifted from concluding the taper in June to concluding in March, and perhaps selling assets as soon as June. The conversation around interest rates shifted from potentially hiking around June to the market fully pricing in a hike by March and maybe two by May. The Fed is now clearly more concerned with inflation relative to unemployment.
- Although credit spreads are tight, bond defaults have dropped to incredibly low levels. The one-year high-yield bond default rate reached 0.4% in December, one of the lowest rates on record.
- New issue activity across credit markets has been historically high. In the fourth quarter, \$285 billion of investment grade credit was issued. Over the full year, gross issuance totaled \$1.4 trillion, which was second only to the \$1.8 trillion issued in 2020.
- In early December, Evergrande, one of the largest property developers in China, defaulted on its debt. At the start of 2022, property developer Shimao also defaulted on its debt. These bonds had been classified as investment grade until recently. Credit spreads of Chinese debt have expanding enormously, from near 750 bps in June to 2,175 bps in November.

	QTD Total Return	1 Year Total Return
Core Fixed Income (Bloomberg U.S. Aggregate)	0.0%	(1.5%)
Core Plus Fixed Income (Bloomberg U.S. Universal)	0.0%	(1.1%)
U.S. Treasuries (Bloomberg U.S. Treasury)	0.2%	(2.3%)
U.S. High Yield (Bloomberg U.S. Corporate HY)	0.7%	5.3%
Bank Loans (S&P/LSTA Leveraged Loan)	0.7%	5.2%
Emerging Market Debt Local (JPM GBI-EM Global Diversified)	(2.5%)	(8.7%)
Emerging Market Debt Hard (JPM EMBI Global Diversified)	(0.4%)	(1.8%)
Mortgage-Backed Securities (Bloomberg MBS)	(0.4%)	(1.0%)

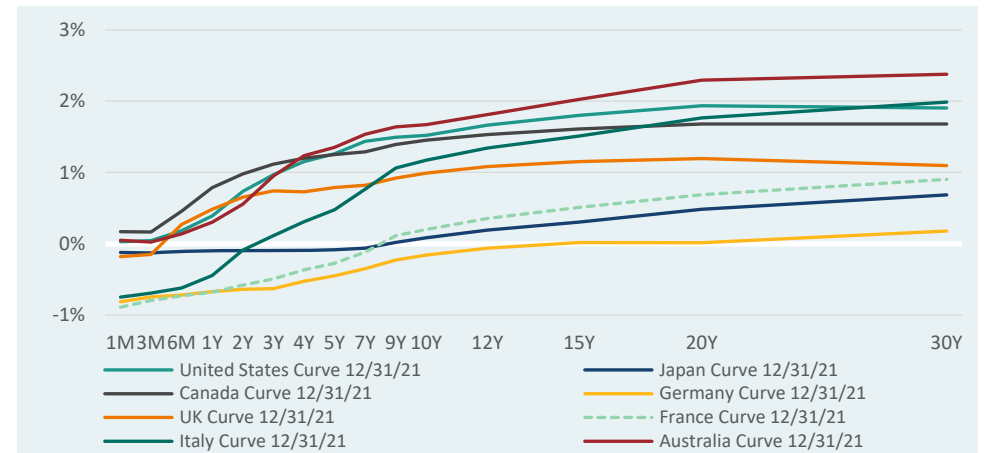
Source: Bloomberg, as of 12/31/21

Yield environment

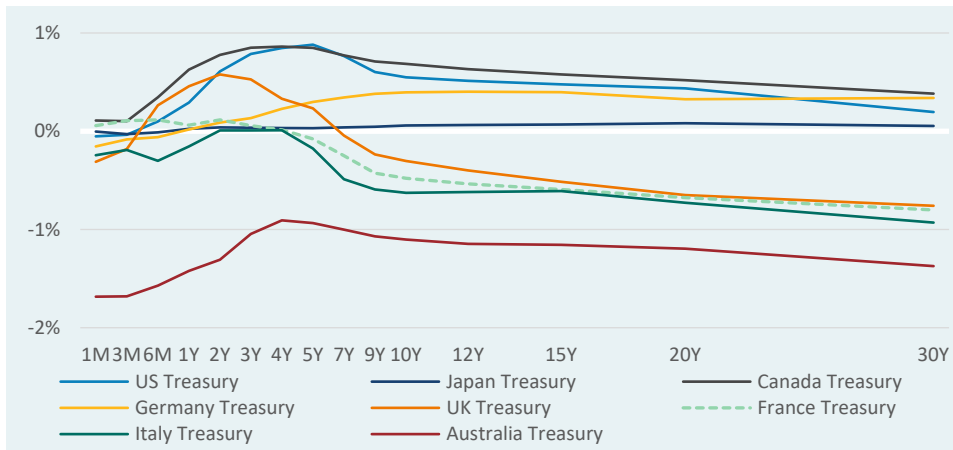
U.S. YIELD CURVE



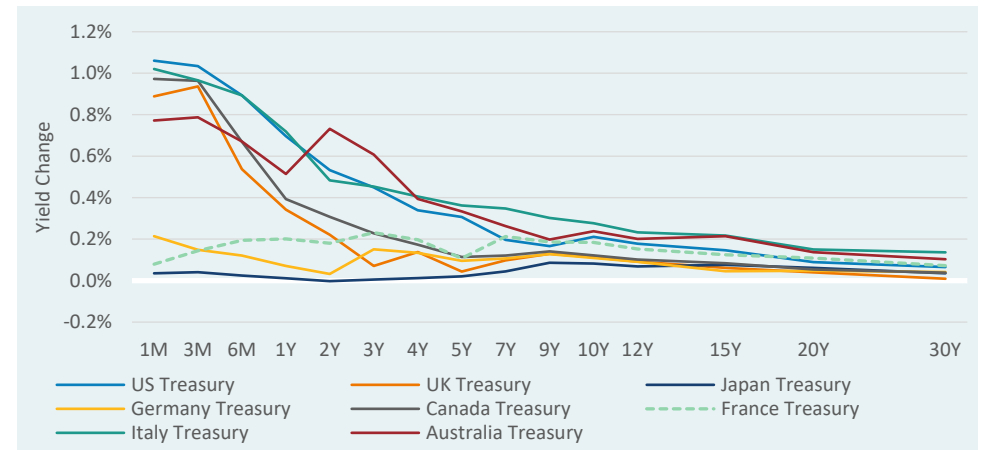
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 12/31/21

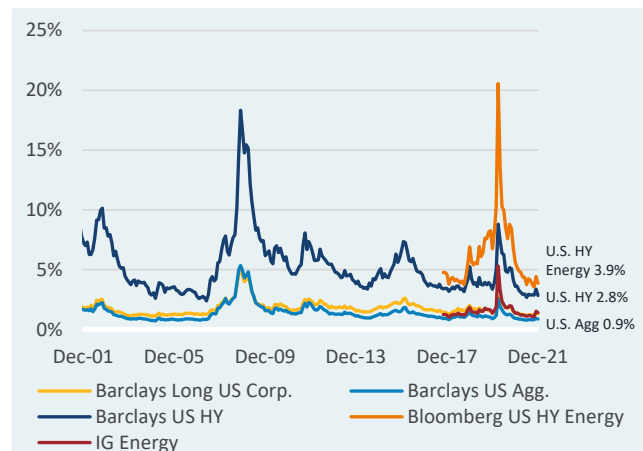
Credit environment

During the fourth quarter, high yield bonds returned 0.7%, matching the performance of loans and outperforming investment grade credit (+0.2%). Over the full year, leveraged loans returned 5.4%, exceeding high yield performance (+5.3%) as well as investment grade credit (-1.2%). Credit spreads tightened modestly over the course of the year with pockets of volatility. This was also the case during Q4 as the Omicron variant circulated across the globe, reducing the appetite for risk. Investment grade spreads widened 8 basis points to 92 bps, which was 4 bps tighter relative to the beginning of the year. High yield corporate spreads finished 2021 at 283 bps, 6 bps tighter for the quarter and 77 bps tighter to end the year.

The search for yield continues within credit markets as option-adjusted

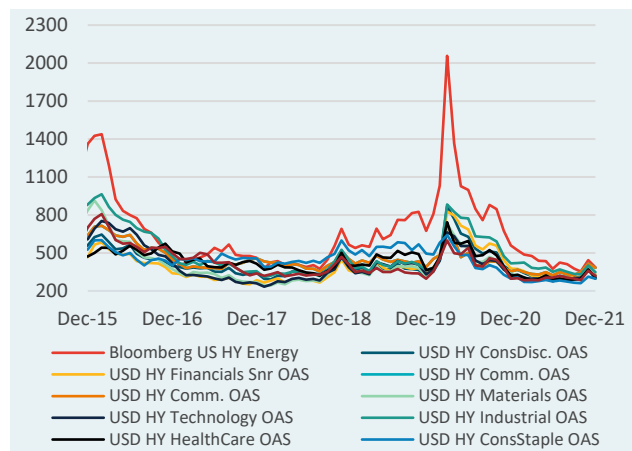
spreads continue to be at or near historic lows and short-term interest rates remain near zero. We have observed that numerous managers are positioning portfolios relatively more defensively with an eye toward capitalizing on potential future volatility, as well as placing greater focus on more niche segments within credit markets. Despite tight spreads, increased rate volatility, and surging inflation, a record amount of funds (\$583 billion) flowed into fixed income funds and ETFs in 2021, exceeding the previous record set in 2019 (\$459 billion). Demand was broad-based, driven by demographics, an abundance of cash on corporate balance sheets, and strong equity market returns which led to increased rebalancing activity. Furthermore, given continued low rates across developed markets, U.S. fixed income remains an attractive market for foreign investors to pick up yield.

SPREADS



Source: Barclays, Bloomberg, as of 12/31/21

HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 12/31/21

Market	Credit Spread (OAS)	
	12/31/21	12/31/20
Long U.S. Corp	1.3%	1.4%
U.S. Inv Grade Corp	0.9%	1.0%
U.S. High Yield	2.8%	3.6%
U.S. Bank Loans*	4.3%	4.6%

Source: Barclays, Credit Suisse, Bloomberg, as of 12/31/21

*Discount margin (4-year life)

Default & issuance

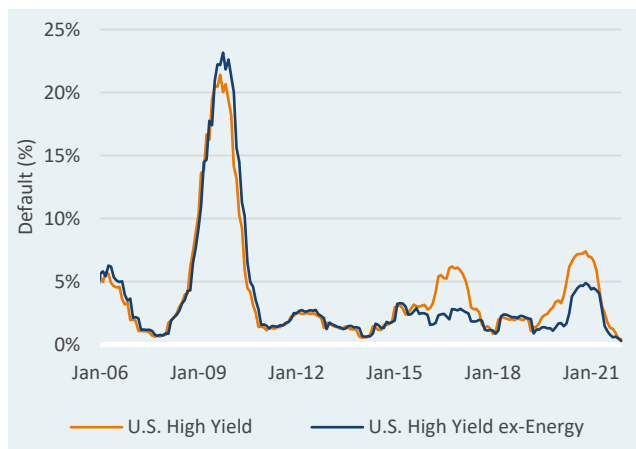
Contrasting the pandemic-driven surge of credit defaults in 2020, which resulted in the second highest annual dollar volume of defaulted bonds and loans on record, default activity in 2021 was very modest. Overall, 14 companies defaulted on loans and bonds during the year on debt totaling \$9.8 billion. The year-over-year improvement was largely fueled by robust economic growth, improving credit fundamentals, and greater access to capital markets, as record bond and loan refinancing activity totaling roughly \$1 trillion since 2020 has improved corporate liquidity.

The par-weighted U.S. high yield default rate ended the year at a historic low of 0.4%, down 82 bps for the quarter and down 656 bps for the year. The par-weighted loan default rate ended the year at 0.5%, down 23 bps for the quarter and 348 bps for the year. For context, the 25-year average annual

default rate of high yield was 3.1%, while the default rate for loans has averaged 3.0% since 1998.

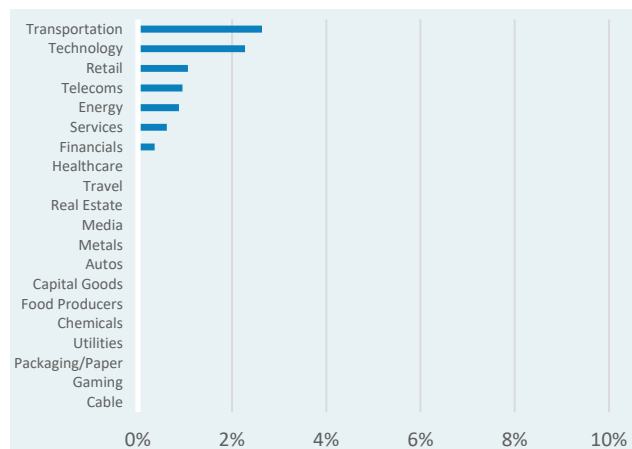
While new issue activity across credit markets fell broadly during the second half of the year, total credit issuance in 2021 was historically high. In the fourth quarter, \$285 billion of investment grade credit was issued. Over the full year, gross issuance totaled \$1.4 trillion, which was second only to the \$1.8 trillion issued in 2020. Similarly, the fourth quarter was the lightest quarter for new issue activity for both high yield bonds and loans with \$87.3 billion and \$114.4 billion, respectively. However, each asset class experienced record issuance over the year with \$557.1 billion in high yield bonds and \$534.4 billion in loans.

HY DEFAULT RATE (ROLLING 1-YEAR)



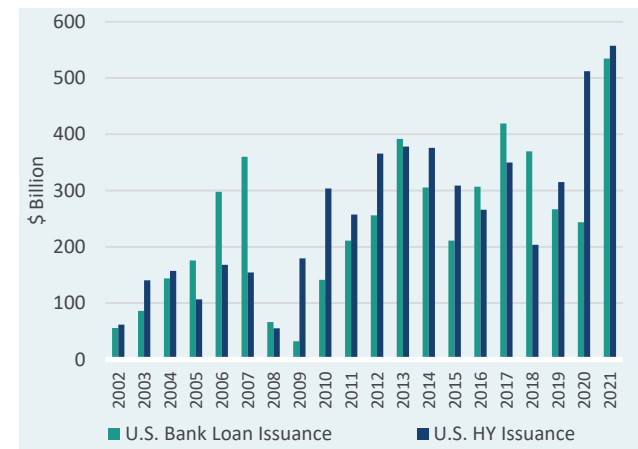
Source: BofA Merrill Lynch, as of 12/31/21

U.S. HY SECTOR DEFAULTS (LAST 12 MONTHS)



Source: BofA Merrill Lynch, as of 12/31/21 – par weighted

U.S. ISSUANCE (\$ BILLIONS)



Source: BofA Merrill Lynch, as of 12/31/21

Equity

Equity environment

- Equity markets delivered strong returns in Q4, up 6.7% and ending the year up 18.5% (MSCI ACWI). U.S. equities delivered 11.0% during the quarter, while international equities delivered 2.7% and emerging market equities saw a slight loss of -1.3%, on an unhedged currency basis.
- Size and Value factor performance was negative once again during Q4. Large capitalization stocks significantly outperformed small capitalization stocks (Russell 1000 +9.8%, Russell 2000 +2.1%) and Growth exceeded Value (Russell 1000 Growth +11.6%, Russell 1000 Value +7.8%). This theme held for full-year 2021.
- Extremely fast spread of the Omicron variant worldwide does not seem to have had an outsized impact on the markets. While this new wave has in fact led to shutdowns in certain countries,

much of the world has remained open, perhaps in acknowledgment that the health effects of Omicron are milder in nature.

- Labor costs and labor supply issues are front-of-mind in corporate boardrooms, and 60% of S&P 500 companies have reported negative impacts to Q4 earnings during quarterly calls so far, as reported by FactSet.
- Weakness in Chinese equities (MSCI China -6.1%) continued to drive the broader underperformance of emerging market equities. Chinese policymakers have signaled a shift in focus from containing excessive leverage in the property sector to promoting growth and stability ahead of next year's parliamentary meeting. Still, the risk of further crackdowns on targeted sectors of the economy remains in place.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
U.S. Large Cap (S&P 500)	11.0%		28.7%	
U.S. Small Cap (Russell 2000)	2.1%		14.8%	
U.S. Equity (Russell 3000)	9.3%		25.7%	
U.S. Large Value (Russell 1000 Value)	7.8%		25.2%	
US Large Growth (Russell 1000 Growth)	11.6%		27.6%	
Global Equity (MSCI ACWI)	6.7%	7.1%	18.5%	20.9%
International Large (MSCI EAFE)	2.7%	4.2%	11.3%	19.4%
Eurozone (Euro Stoxx 50)	4.4%	6.9%	14.6%	24.4%
U.K. (FTSE 100)	5.2%	5.1%	17.3%	18.9%
Japan (NIKKEI 225)	(5.3%)	(2.0%)	(4.7%)	6.7%
Emerging Markets (MSCI Emerging Markets)	(1.3%)	(1.3%)	(2.5%)	(1.3%)

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 12/31/21

Domestic equity

U.S. equities were a top performer in Q4, delivering 11.0% (S&P 500). The S&P 500 Index achieved all-time closing highs on 70 days over the course of the year, which was nearly a record number in and of itself. Performance across sectors was broadly positive during Q4, though those with a greater “value” bias lagged the index (ex: Financials, Energy, Industrials). Per FactSet, the bottom-up price target for the S&P 500 Index by 2022 year-end is around 5300, which implies a price return of roughly 11% for the year.

While supply chain disruptions remain a key concern for chief financial officers in the United States and around the globe, the number one headwind for earnings in Q4 shifted to labor costs and shortages, based on earnings calls transcribed by FactSet. Workers have been quitting their jobs in great numbers

for a wide variety of reasons, pushing many employers to raise wages in order to retain employees, which could erode margins. Of companies that had reported Q4 earnings, 60% reported that rising labor costs had negatively impacted earnings. On a more optimistic note, those companies reported aggregate year-over-year earnings growth of around 28%, suggesting somewhat defensible margins and modest pricing power. Of companies mentioning labor issues, 85% discussed increasing prices or improving price realization on their earnings calls.

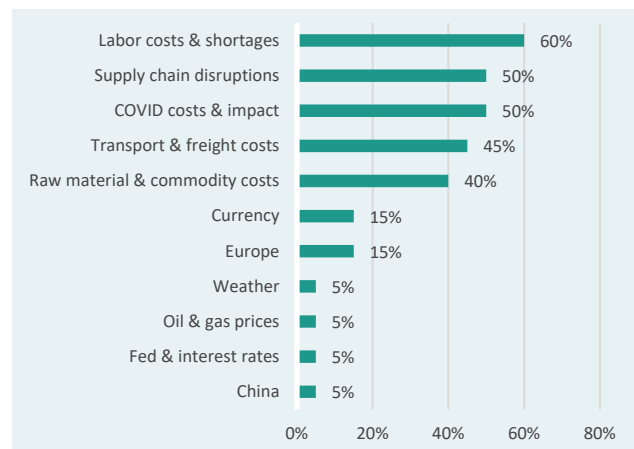
Net profit margins have fallen a percentage point from the record level of 13% achieved in Q2 2021, but remain historically high. If earnings growth in Q4 2021 meets expectations (21.4%), it will mark the fourth consecutive quarter of 20% YoY earnings growth.

S&P 500 INDEX



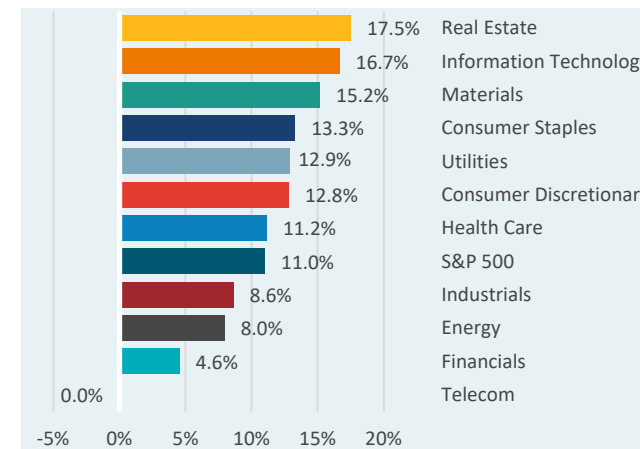
Source: Standard & Poor's, as of 12/31/21

S&P 500 COS. CITING NEGATIVE IMPACT – 4Q21



Source: FactSet, as of 1/13/22

Q4 SECTOR PERFORMANCE



Source: Standard & Poor's, as of 12/31/21

Domestic equity size & style

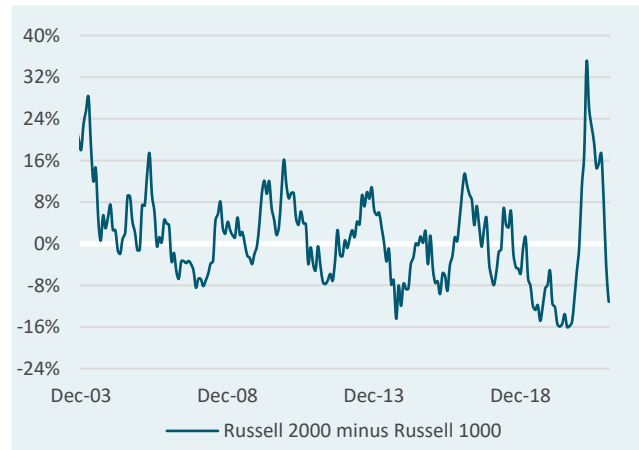
Size and Value factor performance was negative once again during Q4. Large capitalization stocks significantly outperformed small capitalization stocks (Russell 1000 +9.8%, Russell 2000 +2.1%) and Growth exceeded Value (Russell 1000 Growth +11.6%, Russell 1000 Value +7.8%). This theme held for full-year 2021.

Within MSCI's suite of long-only factor indices, Quality (+11.0%) was the top performer in Q4 which generally implies investor appetite for more defensive positioning. The strong performance of the Quality factor was skewed by Nvidia (+42.0%), Apple (+25.7%) and Microsoft (+19.5%).

Towards the end of the year, investor expectations for tighter Fed policy and interest rate hikes increased markedly. If the market is in fact undergoing a transition to tighter monetary conditions, this could have a notable impact on Value and Growth stock performance. The general cheapness of certain Value stocks and richness of certain Growth stocks may accentuate a value rotation, if and when this occurs. As always, we like to keep in mind that factor performance tends to be noisy and difficult to predict, which suggests that style investing should in most cases involve a longer-term focus.

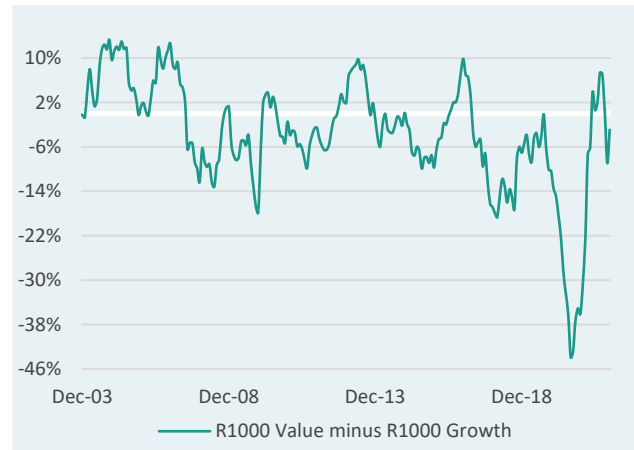
Size and Value underperformed during Q4 2021

SMALL CAP VS LARGE CAP (YOY)



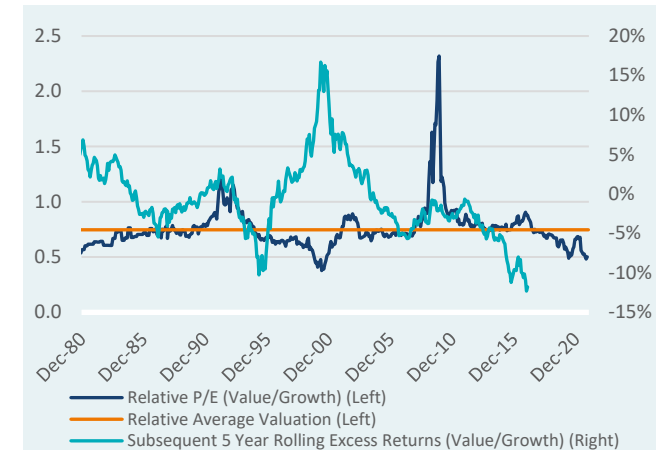
Source: FTSE, as of 12/31/21

VALUE VS GROWTH (YOY)



Source: FTSE, as of 12/31/21

VALUE VS. GROWTH RELATIVE VALUATIONS



Source: Standard & Poor's, as of 12/31/21

International developed equity

International developed equities delivered 2.7% during the quarter. U.S. equities were the top performer (S&P 500 +11.0%) while emerging market equities saw a slight loss (MSCI Emerging Markets -1.3%), on an unhedged currency basis. Currency movement during the quarter resulted in a loss of -1.5% (MSCI EAFE) relative to those investors with a currency hedging program.

Japanese equities (MSCI Japan -4.0%) underperformed most developed markets, reversing strong third quarter returns, though this was mostly caused by currency market movement (Yen -3.1%). The yen fell to its weakest level relative to the dollar since early 2017 in the fourth quarter as

the Bank of Japan's dovish policy increasingly diverged from peers, many of which have signaled the beginning of a normalization process from pandemic stimulus. Rising interest rate differentials, as well as speculation that the new strain of COVID-19 might not be as disruptive as had been feared, has likely contributed to investor flows out of yen positions.

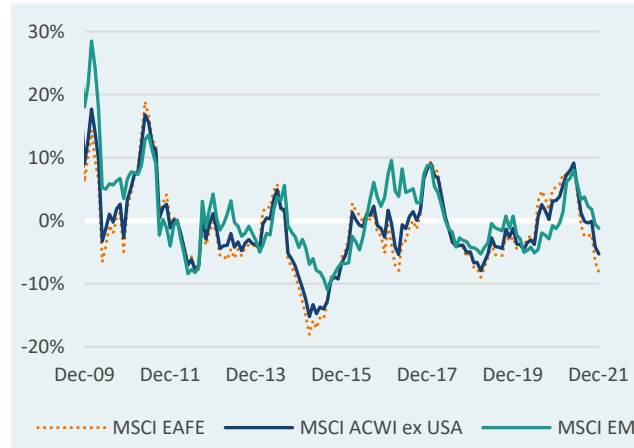
Swiss equities (MSCI Switzerland +12.8%) were the top performer in developed European markets, and unhedged U.S. investors benefitted from a 2.1% appreciation in the Swiss Franc relative to the U.S. dollar.

EFFECT OF CURRENCY (1-YEAR ROLLING)



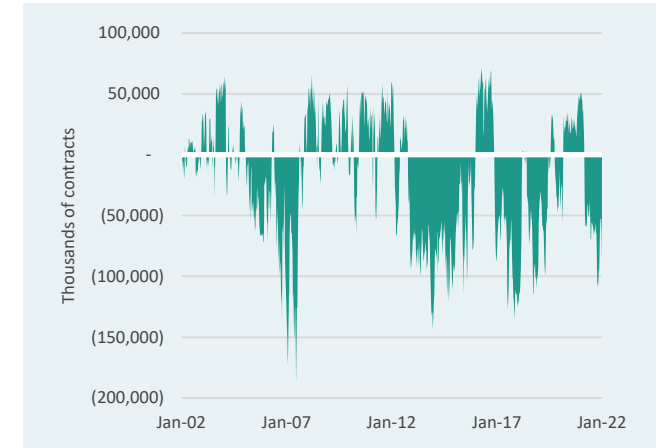
Source: MSCI, as of 12/31/21

INTERNATIONAL DEVELOPED EQUITIES



Source: MSCI, as of 12/31/21

YEN NET FUTURES POSITIONING



Source: CFTC, non-commercial positioning, as of 1/11/22

Emerging market equity

Emerging market equities saw a mild loss (MSCI EM -1.5%) on an unhedged currency basis, underperforming global markets again in the fourth quarter. Latin American and Asian emerging markets performed generally on par during the quarter (MSCI EM Latin America -2.7%, MSCI EM Asia -1.0%).

Weakness in Chinese equities (MSCI China -6.1%) continues to drive broader emerging market underperformance, as China delivered -21.7% return in 2021, while the broader complex was down -2.5% (MSCI China, MSCI Emerging Markets).

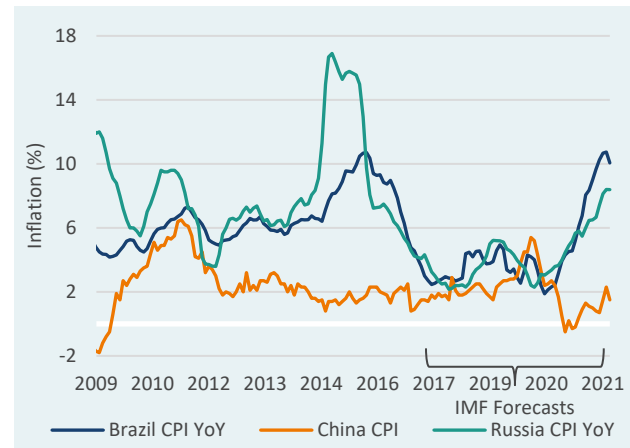
Inflation in Brazil has reached 10.7%, while Russia saw an 8.4% rise in prices and China sits near the longer-term average at 1.5%. Emerging market central banks have continued to raise interest rates. Brazil hiked their rate during the quarter from 6.25% to 9.25% in order to fight rising prices, while Russia hiked its rate from 6.75% to 8.50%. It is worth noting that many of these central banks have very recently implemented a domestic interest rate tightening cycle in order to battle price fluctuations and/or unwanted domestic currency movements. In other words, many emerging central banks deal with these types of issues more often than developed central bankers.

EMERGING MARKET EQUITY



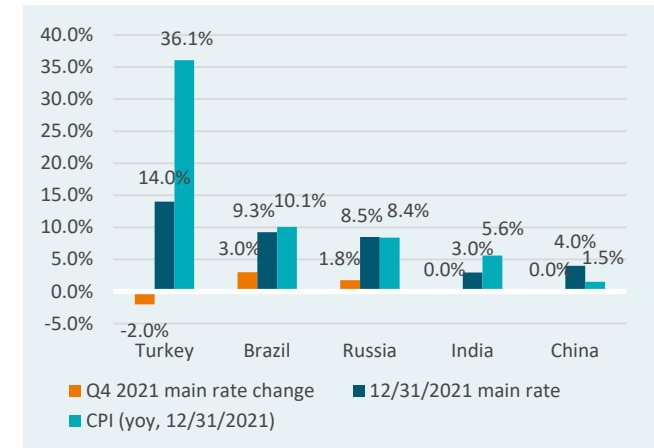
Source: MSCI, as of 12/31/21

INFLATION (YOY)



Source: Bloomberg, as of 12/31/21 or most recent data

CENTRAL BANK RATE CHANGES AND INFLATION



Source: Bloomberg, various, as of 12/31/21

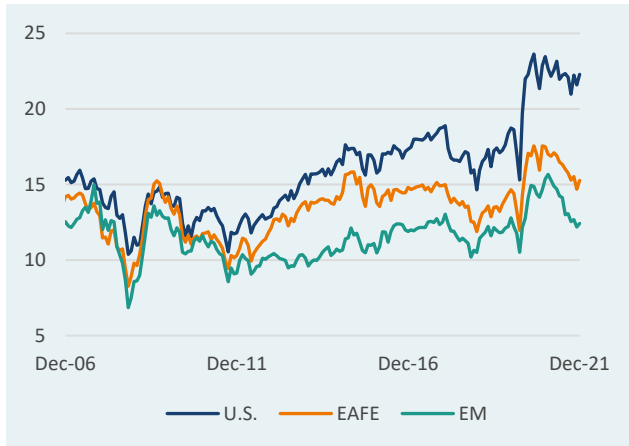
Equity valuations

Forward price/earnings equity multiples have been falling around the world, as earnings expectations rise faster than equity prices. U.S. equities remain the exception in this regard, as U.S. valuations have stayed elevated. The domestic equity market offers one half of the dividend yield of international developed equities (MSCI EAFE), with a forward P/E multiple that is 50% higher. The valuation difference between U.S. and the rest of the world is wider than ever before. This effect is partly due to the rising share of domestic technology stocks, as the technology sector tends to demand loftier valuations than most other sectors, but only partly so. The high prices of U.S. equities may imply more muted returns over the longer-term.

U.S. equity trailing P/E ratio was unmoved during the quarter, while international developed equity valuations fell (19.3 to 17.2) along with emerging market equity valuations (15.8 to 14.0). Relative valuation differences across global markets are apparent in the yield (carry) offered by each market. U.S. equities offer a 3.8% earnings yield, while international developed offer 5.8% and emerging market equities offer 7.1%. In simple terms, for the U.S. market to deliver future performance equivalent to other markets, domestic stocks will either need to deliver outsized profit growth or higher valuations.

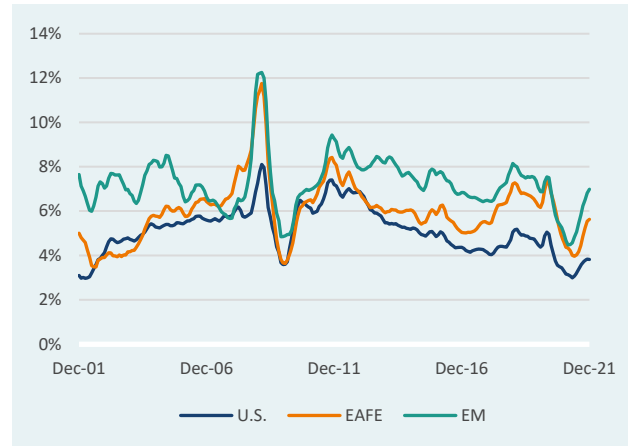
Most equity valuations have moved back towards normal levels, though U.S. prices remain exceptionally rich

FORWARD P/E RATIOS



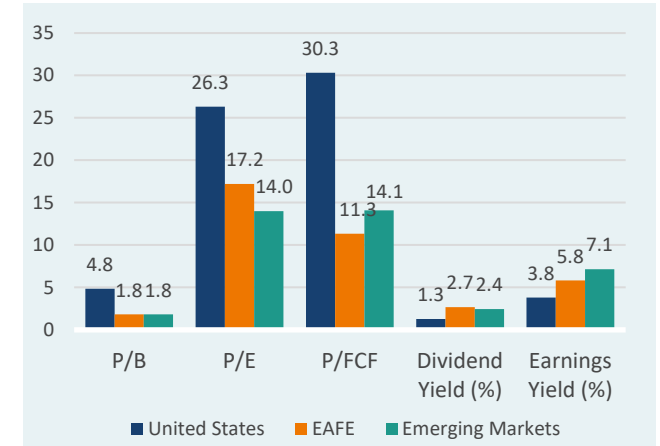
Source: MSCI, 12m forward P/E, as of 12/31/21

CURRENT EARNINGS YIELD (3-MONTH AVERAGE)



Source: Bloomberg, MSCI, as of 12/31/21

VALUATION METRICS (3-MONTH AVERAGE)



Source: Bloomberg, MSCI as of 12/31/21 - trailing P/E

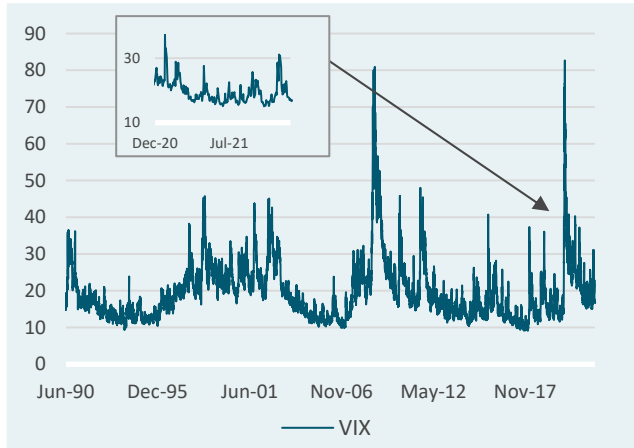
Equity volatility

The Cboe VIX Index stayed near average levels throughout the fourth quarter, with the exception of market choppiness at the end of November which briefly sent the VIX Index above 30. Realized volatility over the past year was muted. U.S. and emerging market equities exhibited 11% volatility during the calendar year, while international developed showed 9.8%. Historically, it has been uncommon for global markets to show similar levels of volatility, as developed markets tend to deliver lower volatility, and emerging markets higher volatility.

Market response to the Omicron variant was minimal, with a few larger market drops followed by quick recoveries. We

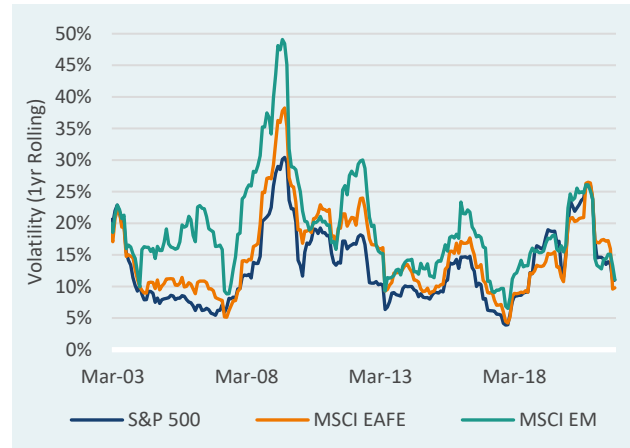
believe that investors have largely moved beyond COVID-19, and that markets have adjusted to the transition away from fiscal stimulus and many of the recent unique government spending programs. As we enter 2022, investors seem to be focused on Federal Reserve plans for tapering and interest rate hikes. It is very possible that this rate hike cycle will look similar to those of the past decade—bouts of volatility as markets either accept or push back against tightening financial conditions, “good news is bad news” as positive economic developments are seen as potentially encouraging tighter Fed policy, and “bad news is good news” as economic weakness is interpreted as an excuse for Federal Reserve easiness and accommodation.

U.S. IMPLIED VOLATILITY (VIX)



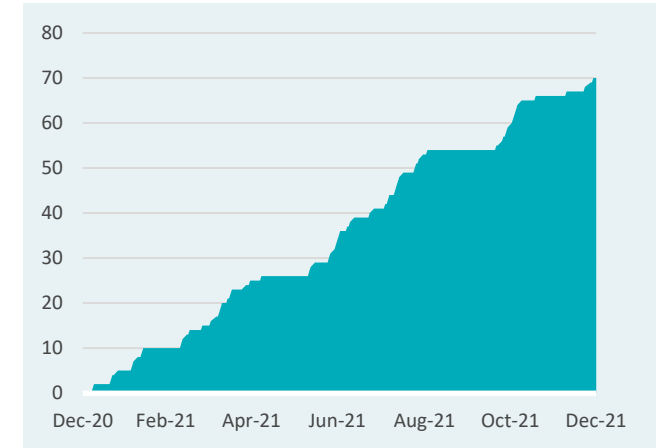
Source: Cboe, as of 12/31/21

REALIZED VOLATILITY



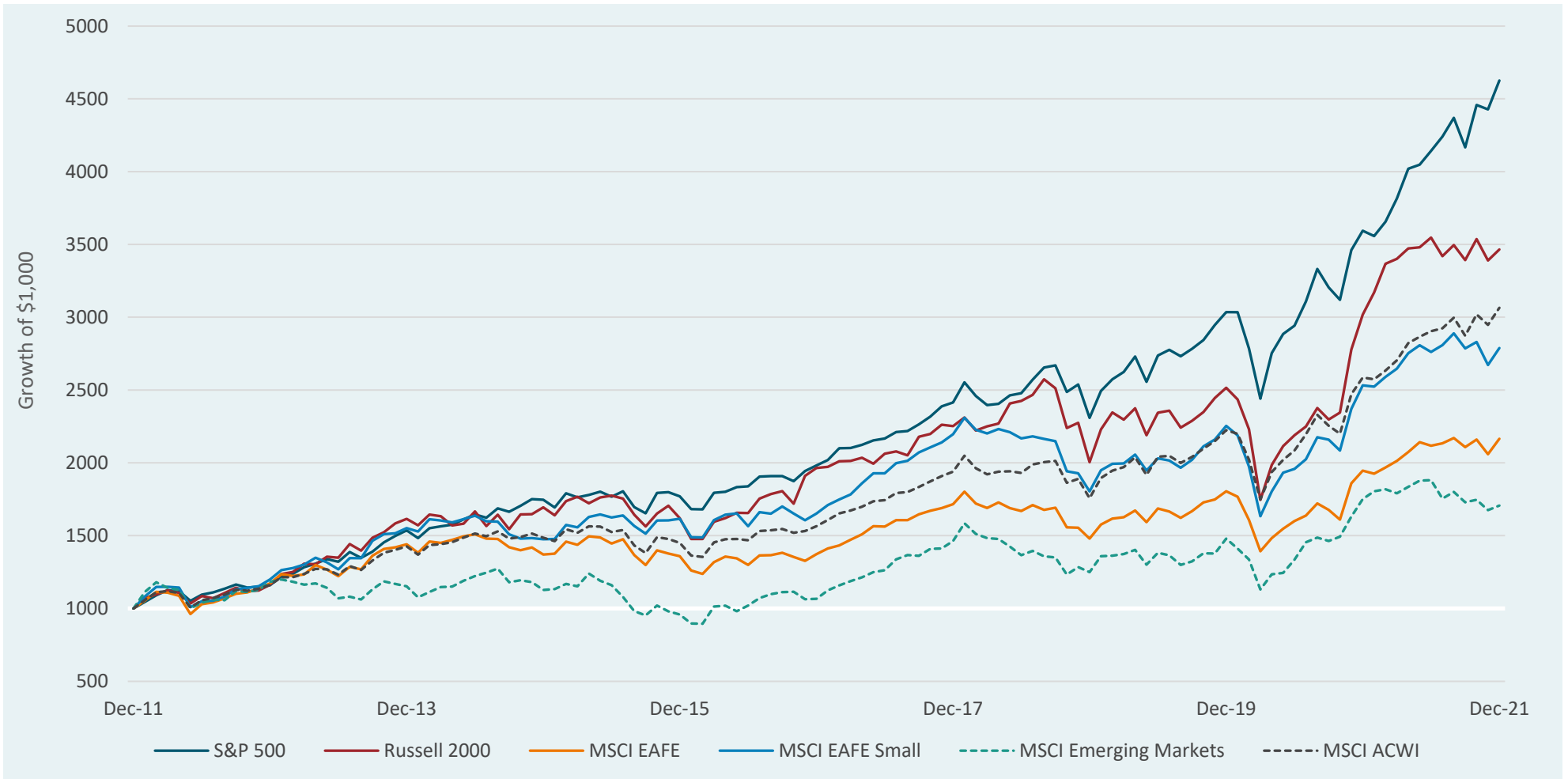
Source: Standard & Poor's, MSCI, as of 12/31/21

S&P 500 INDEX – CUMULATIVE NUMBER OF RECORD CLOSES IN 2021



Source: Standard & Poor's, Bloomberg, as of 12/31/21

Long-term equity performance



Source: Morningstar, as of 12/31/21

Other assets

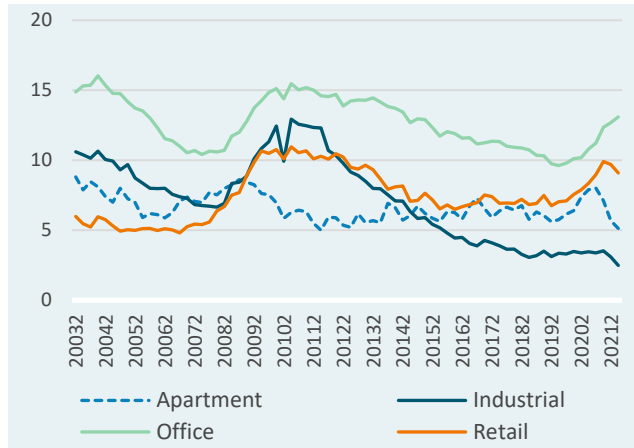
Private real estate fundamentals

Private real estate fundamentals have seen steady improvement in vacancy rates and net operating income (NOI) growth during 2021.

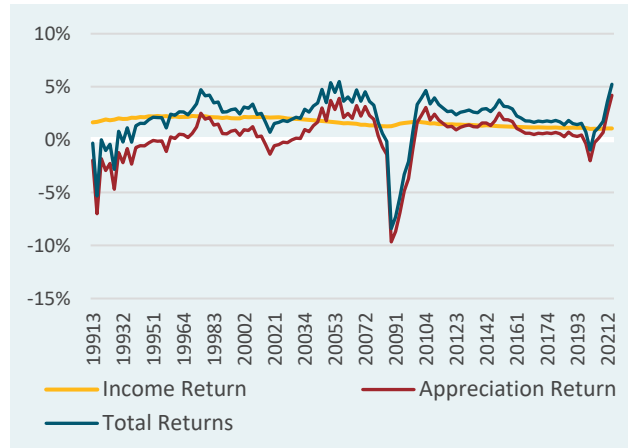
Performance has also been very strong. In Q3 2021, the NCREIF ODCE posted a 6.4% net return, the highest single quarter return in the history of the index, beating the previous high of 6.2% (Q4 1978). Early indications are Q4 2021 will be another strong quarter.

The office sector has been one exception where vacancy rates have continued to climb and NOI growth has been modest (although still positive).

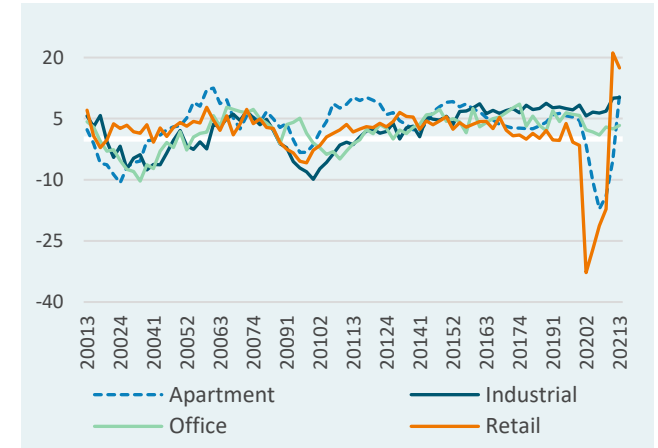
VACANCY BY PROPERTY TYPE



NCREIF PROPERTY INDEX QUARTERLY RETURNS



NOI GROWTH BY PROPERTY TYPE (4-QTR ROLLING)



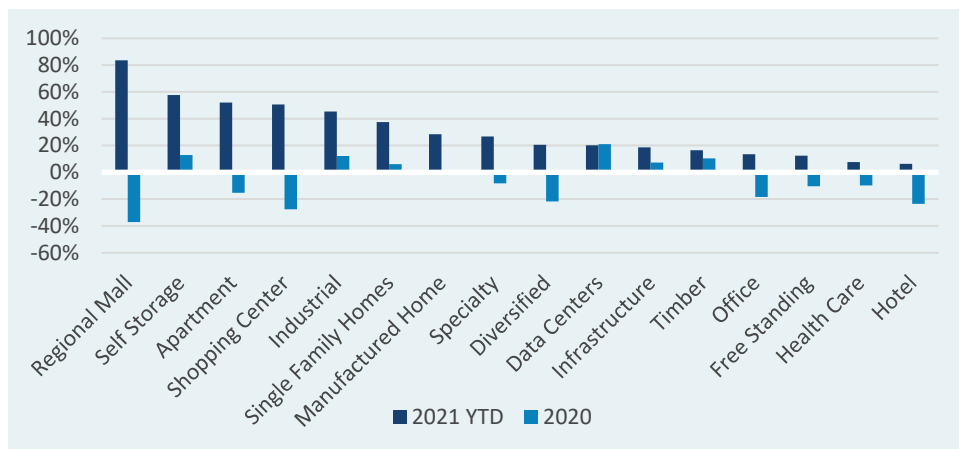
Source: NCREIF, as of 9/30/21

Strong rebound in REITs

REITs rebounded strongly in 2021 posting an overall return of +42.3% for the FTSE NAREIT Equity Index. Several of the strongest sectors of 2021 were those that struggled the most in 2020, such as Regional Malls, Shopping Centers, and Apartments. Sectors with pandemic-driven tailwinds such as Industrial and Data Centers continued to perform well in 2021.

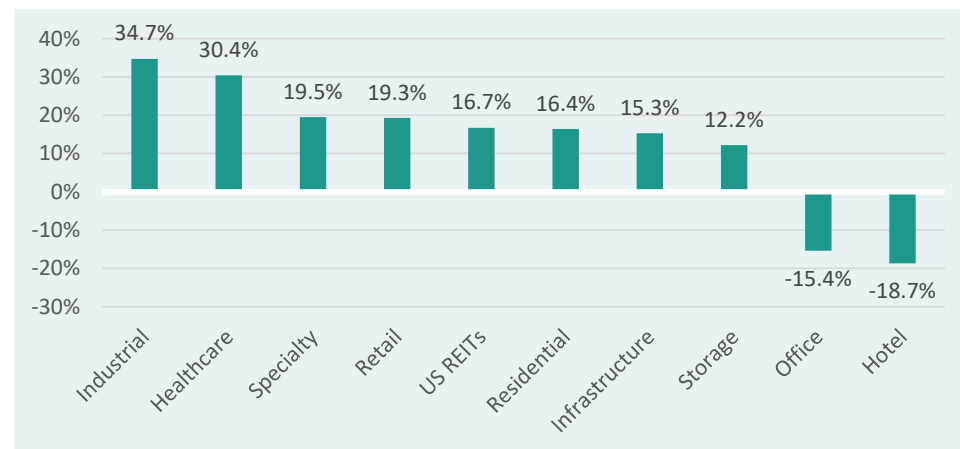
Valuations have become rich across a number of sectors, trading at substantial premiums to their net asset values (NAVs). The U.S. REIT market overall is currently trading at a 16% premium to NAV.

REIT PERFORMANCE BY SUB SECTOR (2021 VS 2020)



Source: Cohen & Steers, as of 11/30/21

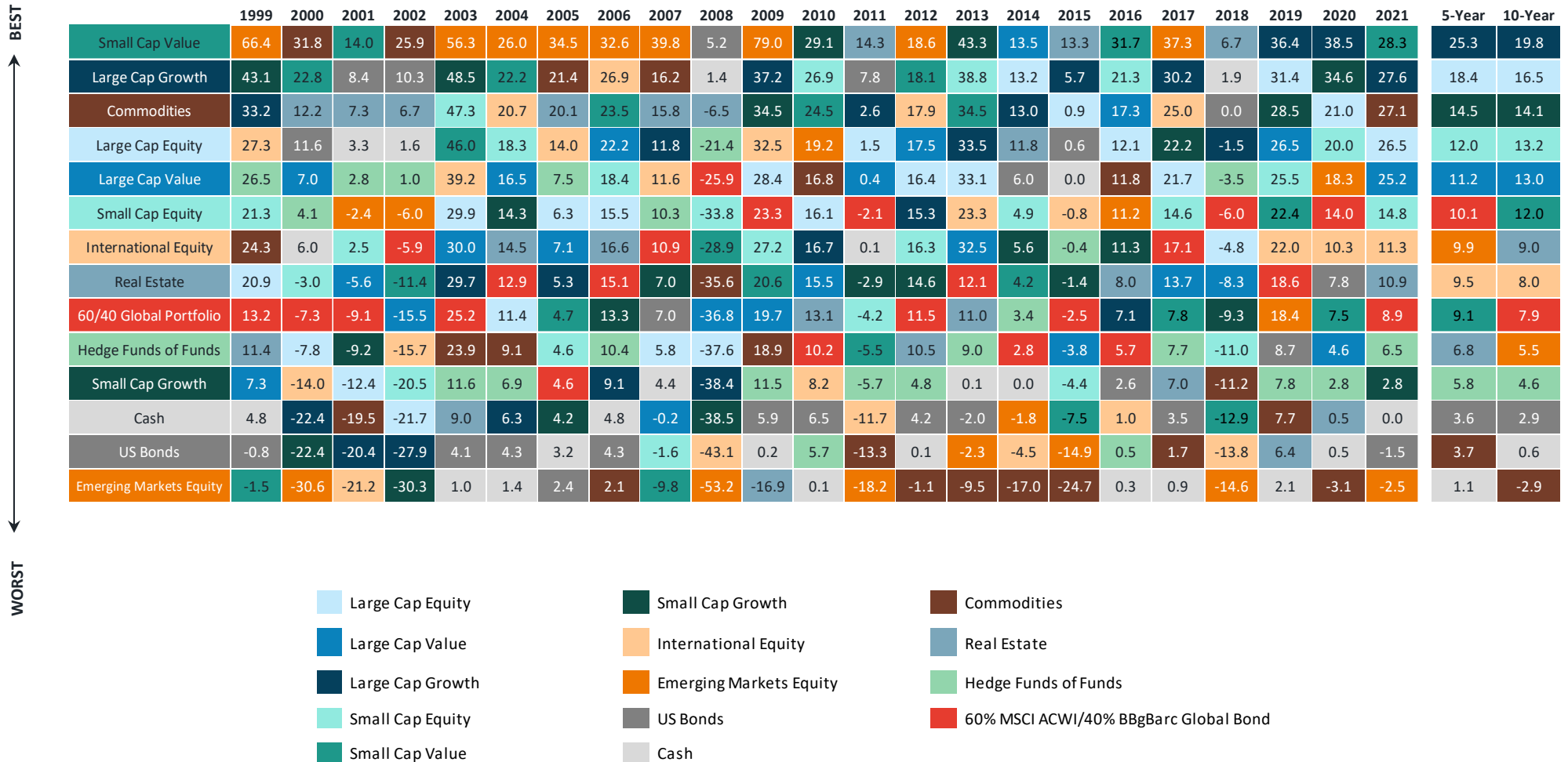
REIT PREMIUM/DISCOUNT TO NAV BY SUB SECTOR



Source: Heitman, as of 12/31/21

Appendix

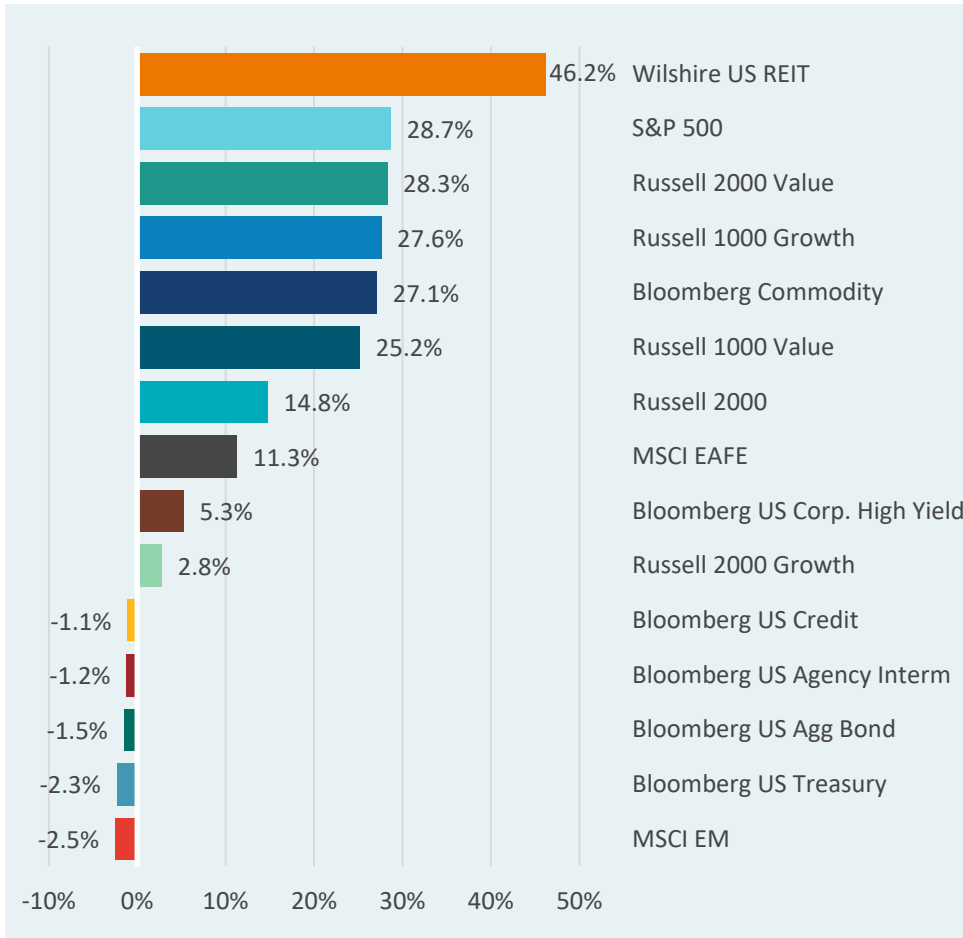
Periodic table of returns



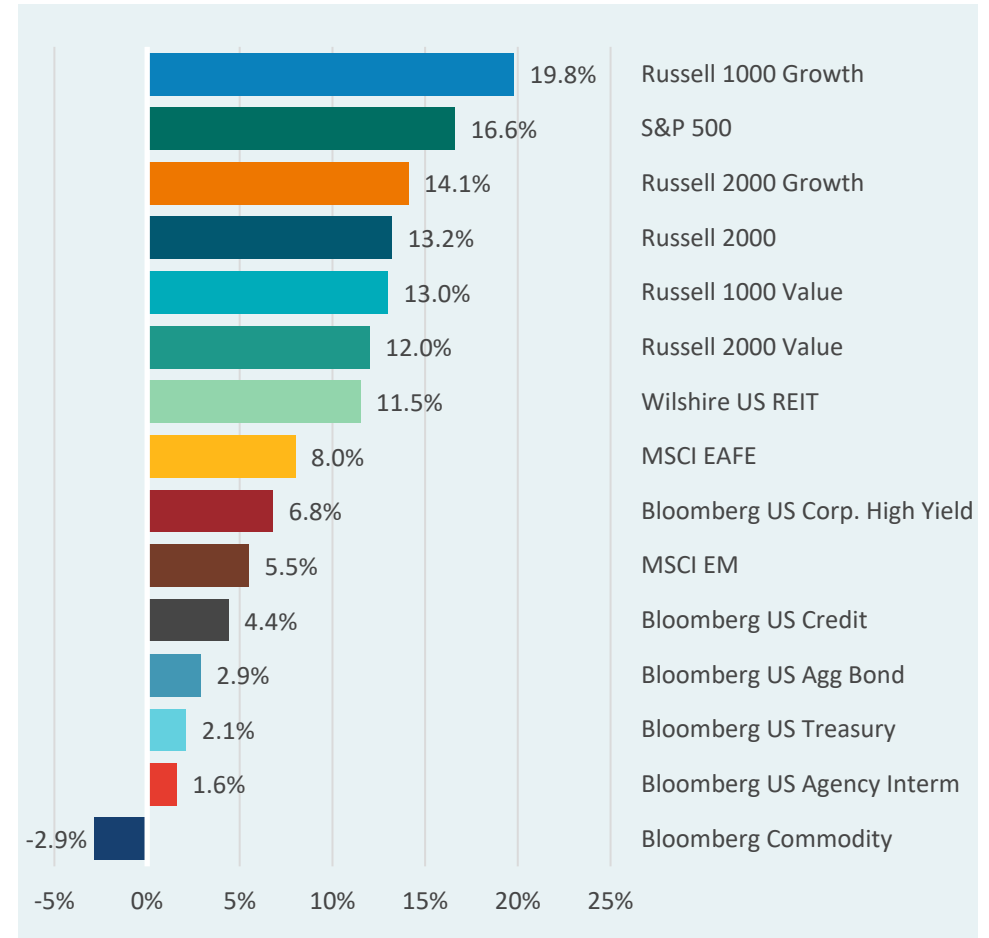
Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, Bloomberg US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, Bloomberg Global Bond. NCREIF Property Index performance data as of 9/30/21.

Major asset class returns

ONE YEAR ENDING DECEMBER



TEN YEARS ENDING DECEMBER



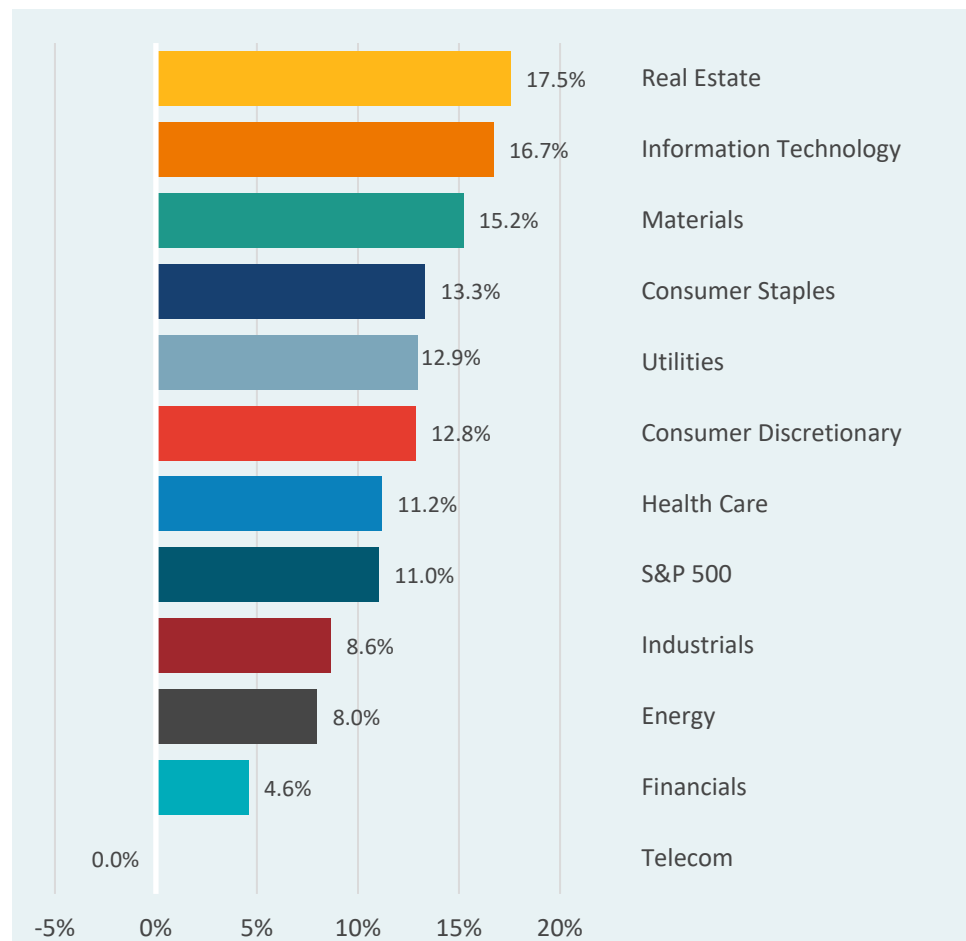
*Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.

Source: Morningstar, as of 12/31/21

Source: Morningstar, as of 12/31/21

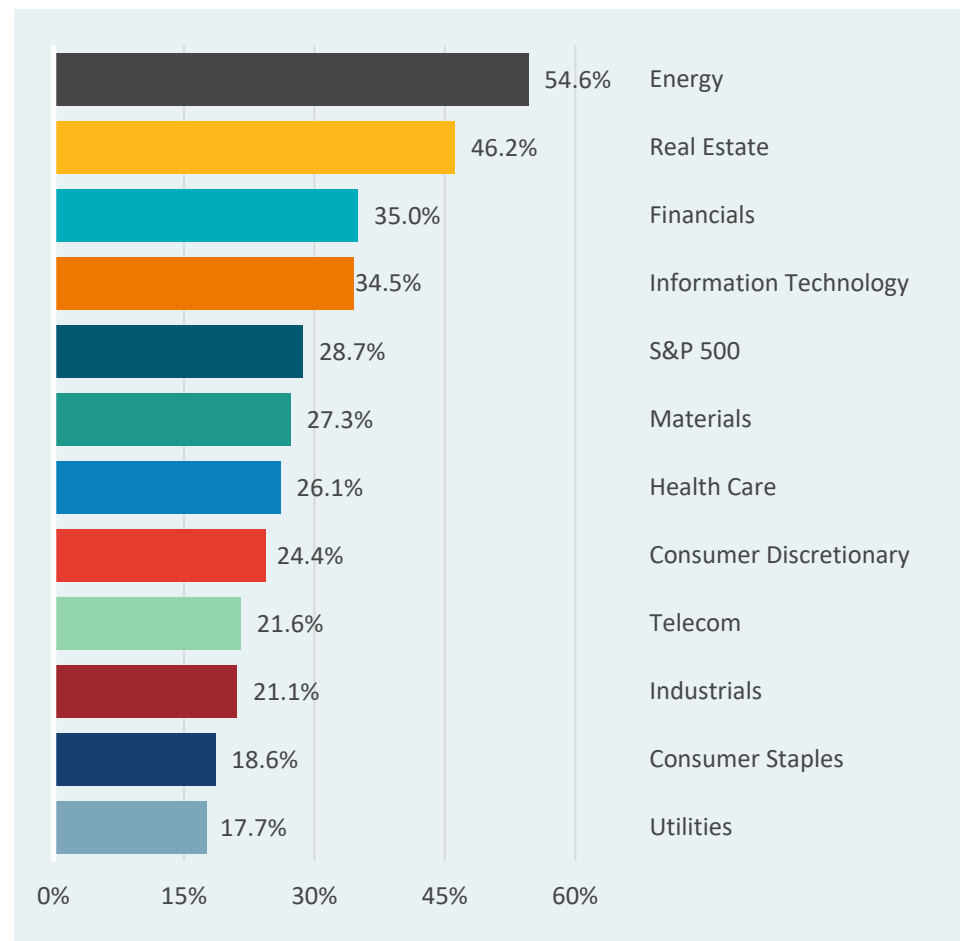
S&P 500 sector returns

Q4 2021



Source: Morningstar, as of 12/31/21

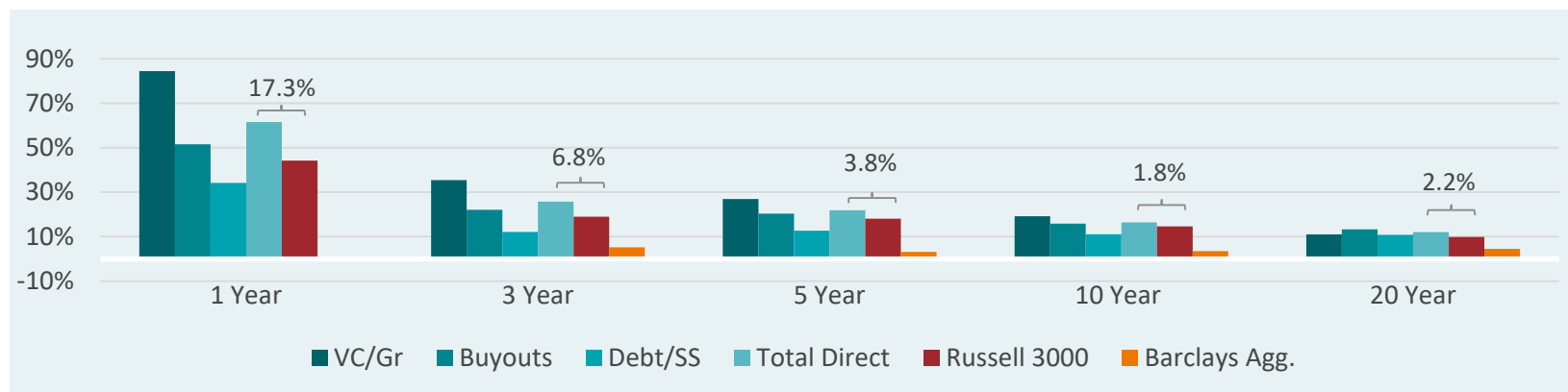
ONE YEAR ENDING DECEMBER



Source: Morningstar, as of 12/31/21

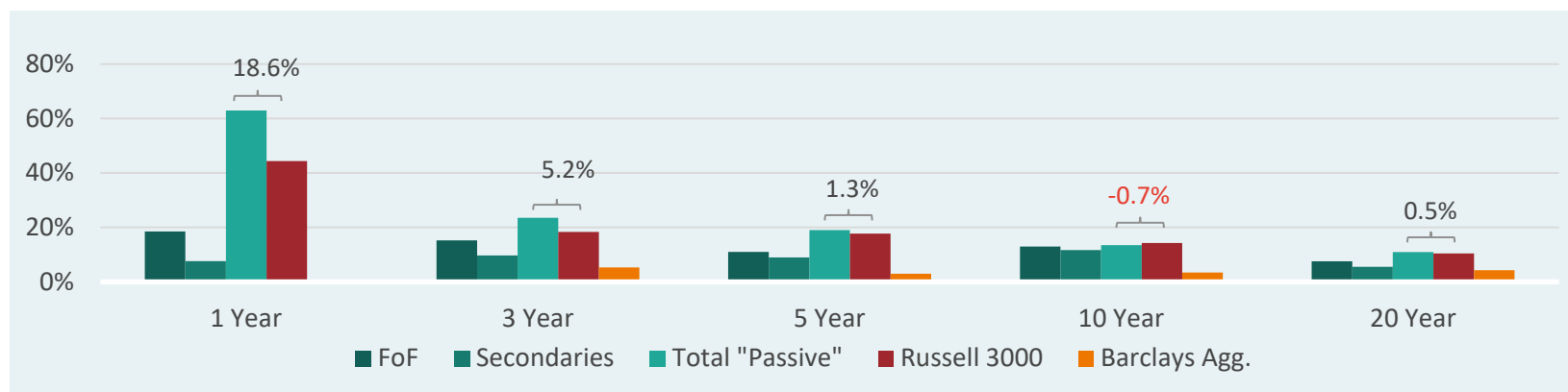
Private equity vs. traditional assets performance

DIRECT PRIVATE EQUITY FUND INVESTMENTS



Direct P.E Fund Investments outperformed comparable public equities across all time periods.

“PASSIVE” STRATEGIES

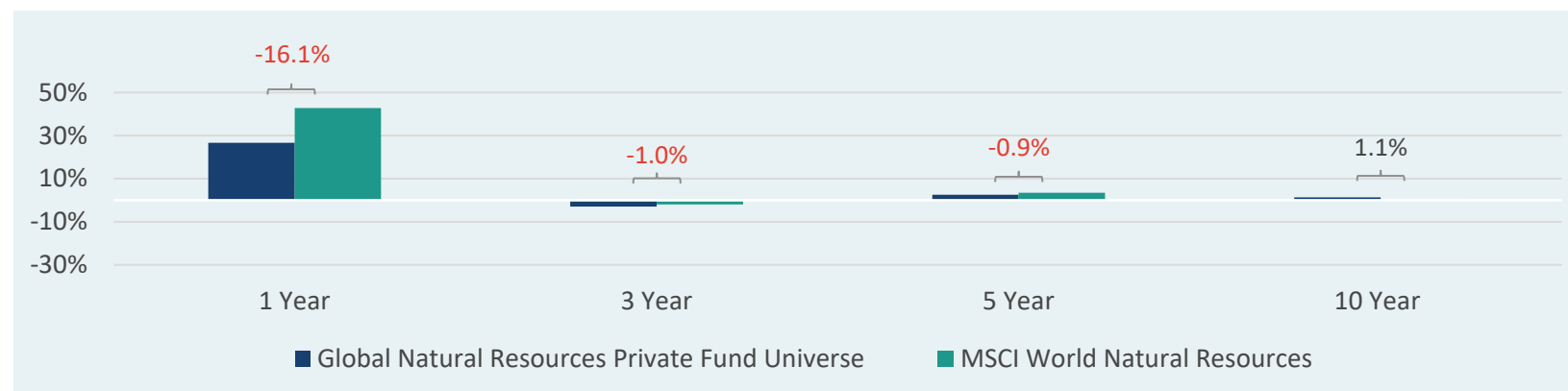


“Passive” strategies outperformed comparable public equities across all time periods, aside from the 10-year basis.

Sources: Refinitiv CJA PME: U.S. Private Equity Funds sub asset classes as of June 30, 2021. Public Market Equivalent returns resulted from “Total Passive” and Total Direct’s identical cash flows invested into and distributed from respective traditional asset comparable.

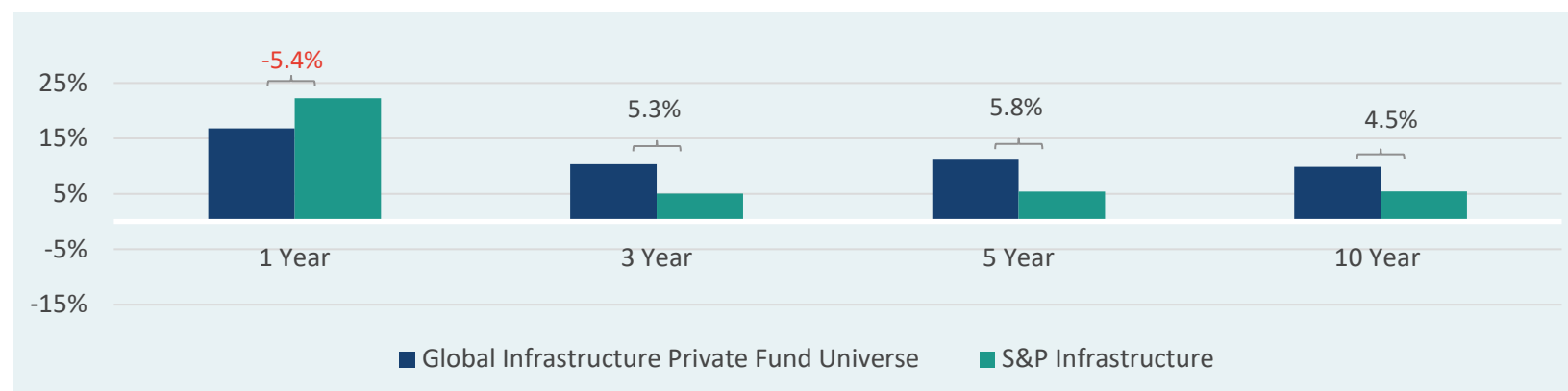
Private vs. liquid real assets performance

GLOBAL NATURAL RESOURCES FUNDS



N.R. funds underperformed the MSCI World Natural Resources benchmark across all time periods, aside from the 10-year basis.

GLOBAL INFRASTRUCTURE FUNDS

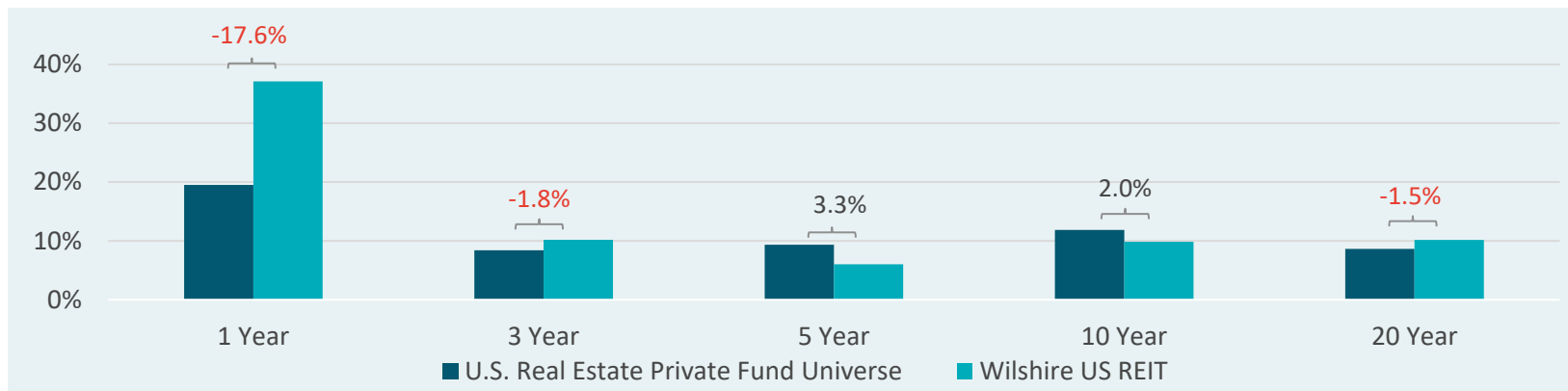


Infra. funds outperformed the S&P Infra. across all periods, aside from the 1-year basis.

Sources: Refinitiv CJA PME: Global Natural Resources (vintage 1999 and later, inception of MSCI World Natural Resources benchmark) and Global Infrastructure (vintage 2002 and later, inception of S&P Infrastructure benchmark) universes as of June 30, 2021. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real assets universes.

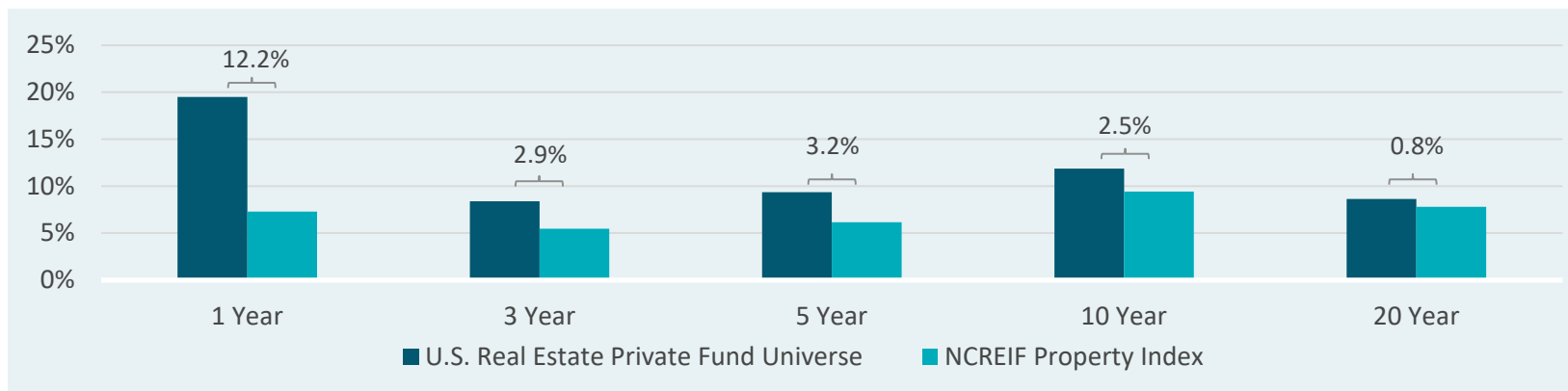
Private vs. liquid and core real estate performance

U.S. PRIVATE REAL ESTATE FUNDS VS. LIQUID UNIVERSE



U.S. Private R.E. funds underperformed the Wilshire U.S. REIT Index across all time periods, aside on a 5-year and 10-year basis.

U.S. PRIVATE REAL ESTATE FUNDS VS. CORE FUNDS



U.S. Private R.E. Funds outperformed the NCREIF Property Index across all time periods.

Sources: Refinitiv CJA PME: Global and U.S. Real Estate universes as of June 30, 2021. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real estate universes.

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	4.5	11.0	28.7	28.7	26.1	18.5	16.6
S&P 500 Equal Weighted	6.2	9.0	29.6	29.6	23.6	15.7	15.6
DJ Industrial Average	5.5	7.9	20.9	20.9	18.5	15.5	14.2
Russell Top 200	4.0	11.0	27.9	27.9	27.3	19.7	17.2
Russell 1000	4.1	9.8	26.5	26.5	26.2	18.4	16.5
Russell 2000	2.2	2.1	14.8	14.8	20.0	12.0	13.2
Russell 3000	3.9	9.3	25.7	25.7	25.8	18.0	16.3
Russell Mid Cap	4.1	6.4	22.6	22.6	23.3	15.1	14.9
Style Index							
Russell 1000 Growth	2.1	11.6	27.6	27.6	34.1	25.3	19.8
Russell 1000 Value	6.3	7.8	25.2	25.2	17.6	11.2	13.0
Russell 2000 Growth	0.4	0.0	2.8	2.8	21.2	14.5	14.1
Russell 2000 Value	4.1	4.4	28.3	28.3	18.0	9.1	12.0

INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
MSCI ACWI	4.0	6.7	18.5	18.5	20.4	14.4	11.9
MSCI ACWI ex US	4.1	1.8	7.8	7.8	13.2	9.6	7.3
MSCI EAFE	5.1	2.7	11.3	11.3	13.5	9.5	8.0
MSCI EM	1.9	(1.3)	(2.5)	(2.5)	10.9	9.9	5.5
MSCI EAFE Small Cap	4.4	0.1	10.1	10.1	15.6	11.0	10.8
Style Index							
MSCI EAFE Growth	4.3	4.1	11.3	11.3	19.0	13.6	10.1
MSCI EAFE Value	6.0	1.2	10.9	10.9	7.8	5.3	5.8
Regional Index							
MSCI UK	7.3	5.6	18.5	18.5	8.7	6.2	5.1
MSCI Japan	1.9	(4.0)	1.7	1.7	11.7	8.5	8.3
MSCI Euro	6.3	3.9	14.9	14.9	14.6	9.7	8.4
MSCI EM Asia	1.5	(1.0)	(5.1)	(5.1)	13.3	11.9	8.1
MSCI EM Latin American	5.9	(2.7)	(8.1)	(8.1)	(2.4)	1.5	(2.2)

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
Bloomberg US TIPS	0.3	2.4	6.0	6.0	8.4	5.3	3.1
Bloomberg US Treasury Bills	0.0	0.0	0.0	0.0	1.0	1.2	0.7
Bloomberg US Agg Bond	(0.3)	0.0	(1.5)	(1.5)	4.8	3.6	2.9
Bloomberg US Universal	(0.1)	(0.0)	(1.1)	(1.1)	5.2	3.8	3.3
Duration							
Bloomberg US Treasury 1-3 Yr	(0.2)	(0.6)	(0.6)	(0.6)	2.0	1.6	1.1
Bloomberg US Treasury Long	(1.4)	3.1	(4.6)	(4.6)	8.8	6.5	4.5
Bloomberg US Treasury	(0.5)	0.2	(2.3)	(2.3)	4.1	3.1	2.1
Issuer							
Bloomberg US MBS	(0.1)	(0.4)	(1.0)	(1.0)	3.0	2.5	2.3
Bloomberg US Corp. High Yield	1.9	0.7	5.3	5.3	8.8	6.3	6.8
Bloomberg US Agency Interm	(0.2)	(0.7)	(1.2)	(1.2)	2.4	2.0	1.6
Bloomberg US Credit	(0.1)	0.2	(1.1)	(1.1)	7.2	5.1	4.4
OTHER							
Index							
Bloomberg Commodity	3.5	(1.6)	27.1	27.1	9.9	3.7	(2.9)
Wilshire US REIT	8.8	17.1	46.2	46.2	19.2	10.9	11.5
CS Leveraged Loans	0.6	0.7	5.4	5.4	5.4	4.3	4.8
S&P Global Infrastructure	6.6	4.6	11.9	11.9	10.2	7.8	7.7
Alerian MLP	3.7	0.9	40.9	40.9	1.0	(3.7)	(0.3)
Regional Index							
JPM EMBI Global Div	1.4	(0.4)	(1.8)	(1.8)	5.9	4.7	5.3
JPM GBI-EM Global Div	1.6	(2.5)	(8.7)	(8.7)	2.1	2.8	0.7
Hedge Funds							
HFRI Composite	1.3	0.6	10.3	10.3	10.9	7.1	5.8
HFRI FOF Composite	0.8	0.7	6.5	6.5	8.6	5.8	4.6
Currency (Spot)							
Euro	1.0	(1.9)	(7.1)	(7.1)	(0.2)	1.5	(1.3)
Pound Sterling	2.4	0.5	(0.9)	(0.9)	2.1	1.9	(1.4)
Yen	(1.4)	(3.1)	(10.3)	(10.3)	(1.6)	0.3	(4.0)

Source: Morningstar, HFRI, as of 12/31/21

Definitions

Bloomberg US Weekly Consumer Comfort Index - tracks the public's economic attitudes each week, providing a high-frequency read on consumer sentiment. The index, based on cell and landline telephone interviews with a random, representative national sample of U.S. adults, tracks Americans' ratings of the national economy, their personal finances and the buying climate on a weekly basis, with views of the economy's direction measured separately each month. (www.lanqerresearch.com)

University of Michigan Consumer Sentiment Index - A survey of consumer attitudes concerning both the present situation as well as expectations regarding economic conditions conducted by the University of Michigan. For the preliminary release approximately three hundred consumers are surveyed while five hundred are interviewed for the final figure. The level of consumer sentiment is related to the strength of consumer spending. (www.Bloomberg.com)

NFIB Small Business Outlook - Small Business Economic Trends (SBET) is a monthly assessment of the U.S. small-business economy and its near-term prospects. Its data are collected through mail surveys to random samples of the National Federal of Independent Business (NFIB) membership. The survey contains three broad question types: recent performance, near-term forecasts, and demographics. The topics addressed include: outlook, sales, earnings, employment, employee compensation, investment, inventories, credit conditions, and single most important problem. (<http://www.nfib-sbet.org/about/>)

NAHB Housing Market Index - the housing market index is a weighted average of separate diffusion indices for three key single-family indices: market conditions for the sale of new homes at the present time, market conditions for the sale of new homes in the next six months, and the traffic of prospective buyers of new homes. The first two series are rated on a scale of Good, Fair, and Poor and the last is rated on a scale of High/Very High, Average, and Low/Very Low. A diffusion index is calculated for each series by applying the formula $(\text{Good-Poor} + 100)/2$ to the present and future sales series and $(\text{High/Very High-Low/Very Low} + 100)/2$ to the traffic series. Each resulting index is then seasonally adjusted and weighted to produce the HMI. Based on this calculation, the HMI can range between 0 and 100.

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Glossary

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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