



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



**PERIOD ENDING: DECEMBER 31, 2020**

Investment Performance Review for

**Western States Office and Professional Employees' International Union Pension Plan**

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Investment Landscape

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Review

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**PERSPECTIVES  
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SUCCESS**

1<sup>ST</sup> QUARTER 2021  
Investment Landscape

# Recent Verus research

Visit: <https://www.verusinvestments.com/insights/>

## Topics of interest

### IS PAINLESS DIVERSIFICATION DEAD?

Interest rates have collapsed in developed economies in past years, and more recently at home in the United States, which has greatly dampened investors' performance outlook for diversified portfolios. These events have led many investors to question the traditional role of fixed income. In this Topic of Interest white paper, we outline some issues that investors must come to terms with, and we begin to unpick ways of thinking about diversification and preservation of capital in the new market environment.

### INTEGRATING ESG INTO ACTIVE PORTFOLIOS

In this paper, we address how environmental, social, and governance (ESG) considerations are integrated into our manager research process. We address Verus' approach to ESG issues when advising clients and link that to what ESG due diligence looks like in researching investment managers. Next, we consider the spectrum of ESG integration as defined by the primary objective of the product. Finally, we address the challenges that ESG considerations pose for hedge fund managers and private equity general partners.

### QUANTIFYING ESG IN PORTFOLIO CONSTRUCTION

Environmental, social, and governance (ESG) investing is a wide-ranging field that encompasses many different approaches. Investors are integrating ESG into the creation of their policies, investment beliefs, strategic asset allocations, manager selection decisions, and much more. ESG ratings and scores allow investors to understand and compare the ESG profile of companies and managers. ESG screens can serve as an effective tool for investors to identify exposures that may conflict with their institutional values.

### AGREEING ON ESG

This paper sheds light on the difficulty institutional investors face as they embark on their journey toward implementing a thoughtful ESG policy that fits their specific organization and is designed to help them cut through the clutter by providing a detailed, practical "soup-to-nuts" methodology to determine the best policy for their organization.

## Annual research

### 2021 CAPITAL MARKET ASSUMPTIONS

Learn about the 2020 market movements and how these shifts have affected our long-term outlook.

## Sound thinking

### FINDING COMFORT IN AN UNCOMFORTABLE WORLD

An outline of various topics that an investor might want to add to their agenda for the coming year.

## Up and coming event

### EMERGING & DIVERSE MANAGERS DILIGENCE DAYS

For the third consecutive year, Verus is inviting qualified managers to participate in one-on-one meetings with its senior staff during its 3rd Emerging and Diverse Manager Diligence Days.

- March 16-18
- March 22
- March 24
- March 26

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# 4<sup>th</sup> quarter summary

## THE ECONOMIC CLIMATE

- Real GDP grew at a -2.8% rate year-over-year in the third quarter (+33.4% quarterly annualized rate) as the U.S. economy recovered much of the economic activity lost in the second quarter. **p. 11**
- Joe Biden was elected President of the United States. The market seemed to interpret a Biden win as a mild positive for risk assets, on the expectation of larger economic stimulus. Democrats also took both seats in the Georgia run-off election, completing the party's "Blue Wave". **p. 7**
- Several new, more-infectious strains of COVID-19 emerged and spread around the world, though experts remain confident in the efficacy of the currently-approved arsenal of vaccines. **p. 7**

## PORTFOLIO IMPACTS

- Emerging market equities (+19.7%) outperformed U.S. (+12.1%) and international developed equities (+16.0%) once again in Q4. Latin American equities showed significant outperformance (+34.8%), after years of lagging behind other emerging markets. **p. 32**
- The U.S. 10-year TIPS breakeven inflation rate headed notably higher over the quarter, from 1.6% in September to 2.0% in December. Although U.S. inflation is lower than pre-pandemic levels, market pricing for inflation is the highest since 2018. **p. 12**

## THE INVESTMENT CLIMATE

- Congress passed an omnibus spending bill, including \$900 billion earmarked for COVID-19 relief. Key features of the package included a re-up of the Paycheck Protection Program, \$600 stimulus checks for most individuals, and \$300 per week in additional unemployment benefits over a 10-week period. **p. 11**
- According to FactSet, S&P 500 Q4 earnings are expected to be down -8.8%. This estimate improved from the -12.7% drop expected on September 30th. For full year 2020, analysts are expecting a -13.3% earnings decline. **p. 26**

## ASSET ALLOCATION ISSUES

- U.S. equities delivered +12.1% during the quarter, ending the year at an all-time-high. The S&P 500 was one of the strongest equity markets in 2020, up +18.4% despite an earnings recession and considerable uncertainty. **p. 28**
- Weakness in the U.S. dollar remained a theme in Q4, and the Bloomberg Dollar Spot Index fell to a two and a half year low. Analysts attributed some of the weakness in the US dollar to lower relative real yields in the U.S. **p. 37**
- Within the U.S. market, a sizable rotation occurred in Q4 as certain sectors that had been beaten-down during the pandemic performed strongly. Rising energy prices boosted the Energy sector, while higher interest rates improved the outlook for Financials. **p. 28**

A more neutral risk positioning may be warranted in the current environment

There seems to be a high degree of uncertainty regarding the future market path

# What drove the market in Q4?

**“The Mass Distribution of Covid-19 Vaccines Is Under Way. ‘Everything Has to Come Together.’”**

## COVID-19 U.S. HOSPITALIZATION RATE

7/25	8/29	9/26	10/31	11/28	12/26
7.6%	4.4%	4.1%	8.7%	16.6%	10.4%

Article Source: Wall Street Journal, December 13<sup>th</sup>, 2020

**“Congress agrees to \$900 billion Covid stimulus deal after months of failed negotiations”**

## U.S. TOTAL PUBLIC DEBT OUTSTANDING (TRILLIONS)

Jul	Aug	Sep	Oct	Nov	Dec
\$26.5	\$26.7	\$26.9	\$27.1	\$27.4	\$27.7

Article Source: CNBC, December 20<sup>th</sup>, 2020

**“Powell says stock prices are not necessarily high considering the low level of interest rates”**

## TEN-YEAR U.S. REAL YIELD (NOMINAL YIELD MINUS BREAKEVEN INFLATION)

Jul	Aug	Sep	Oct	Nov	Dec
-1.03%	-1.10%	-0.95%	-0.83%	-0.95%	-1.07%

Article Source: CNBC, December 16<sup>th</sup>, 2020

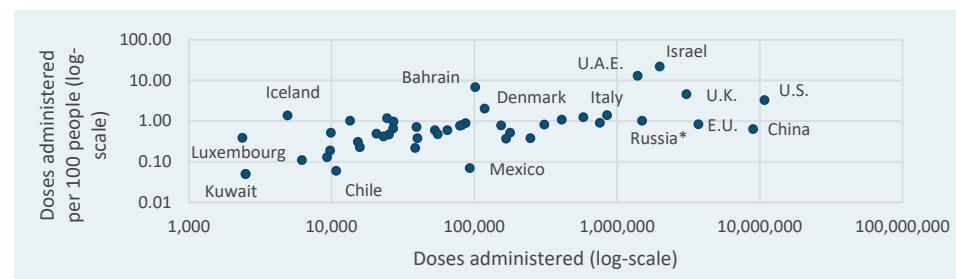
**“Dollar’s Slump Propels Global Peers Toward Multi-Year Peaks”**

## BLOOMBERG DOLLAR SPOT INDEX

Jul	Aug	Sep	Oct	Nov	Dec
1179	1161	1177	1172	1145	1120

Article Source: Bloomberg, November 29<sup>th</sup>, 2020

## GLOBAL VACCINATION CAMPAIGN



Source: Bloomberg, as of 1/13/21, or most recent release

## MOST RECENT FISCAL STIMULUS PACKAGE ALLOCATIONS (BILLIONS)



Source: U.S. House of Representatives, as of 12/21/20

## S&P 500 INDEX



Source: Standard & Poor's, Bloomberg, as of 12/31/20

# Economic environment



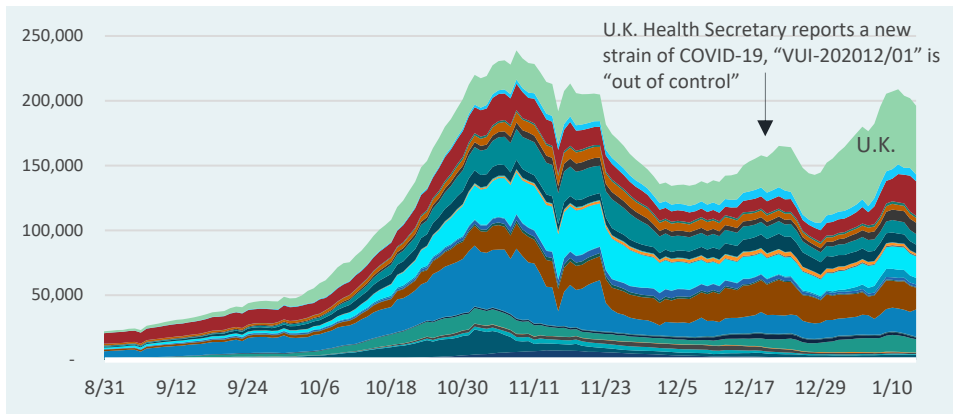
# U.S. economics summary

- Real GDP grew at a -2.8% rate year-over-year in the third quarter (+33.4% quarterly annualized rate) as the U.S. economy recovered much of the economic activity lost in the second quarter.
- The Atlanta Fed’s forecast for fourth quarter growth was 7.4% quarter-over-quarter, as of January 15<sup>th</sup>, suggesting further economy expansion.
- Joe Biden was elected President of the United States in November. Jon Ossoff and Raphael Warnock both won in the Georgia Senate runoff elections in January, which ensured democratic control of both the White House and the Senate with V.P.-elect Kamala Harris as the swing vote. The wins completed the democratic “Blue Wave” many have associated with extensive fiscal support. Slim democratic majorities in both chambers of Congress, however, may constrain Biden’s policy scope.
- After impressive employment gains in Q3, the recovery appeared to be stalling in recent months. Unemployment fell from 7.8% in September to 6.7% in December.
- Consumer sentiment remained stubbornly low, despite broad recoveries in consumer spending, auto sales, and the housing market.
- Home sales activity continued to grow at an extremely fast pace in the fourth quarter, as record-low interest rates and the work-from-home environment fueled demand. Existing home sales were 25.8% higher than one-year prior.
- Several new, more-infectious strains of COVID-19 emerged and spread around the world, though experts remain confident in the efficacy of the currently-approved arsenal of vaccines. The global vaccination campaign began in December, and 44 million doses have been distributed so far.

	Most Recent	12 Months Prior
GDP (YoY)	(2.8%) 9/30/20	2.1% 9/30/19
Inflation (CPI YoY, Core)	1.6% 12/31/20	2.3% 12/31/19
Expected Inflation (5yr-5yr forward)	2.0% 12/31/20	1.8% 12/31/19
Fed Funds Target Range	0% – 0.25% 12/31/20	1.50% – 1.75% 12/31/19
10-Year Rate	0.9% 12/31/20	1.9% 12/31/19
U-3 Unemployment	6.7% 12/31/20	3.5% 12/31/19
U-6 Unemployment	11.7% 12/31/20	6.7% 12/31/19

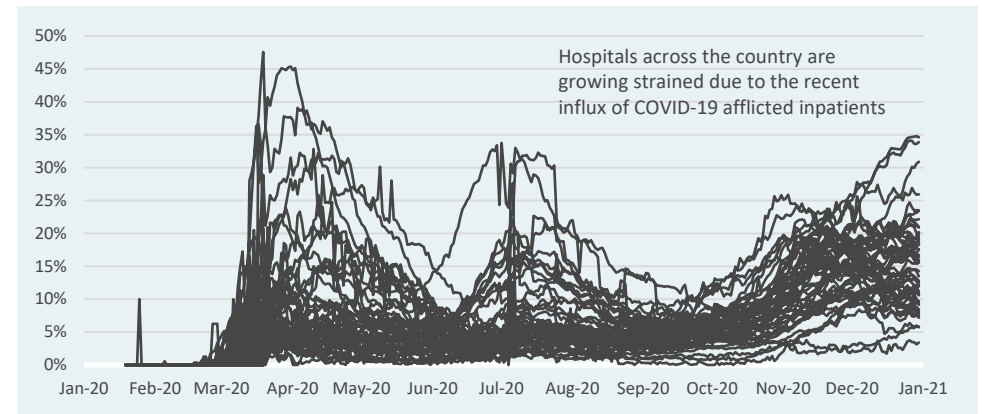
# COVID-19 update

## SEVEN-DAY AVERAGE DAILY CASE GROWTH – EUROPE AND THE U.K.



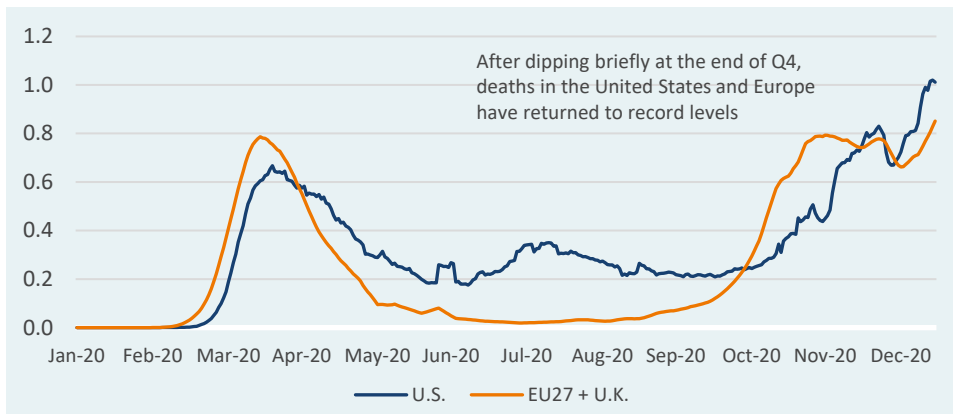
Source: Bloomberg, as of 1/14/21

## COVID-19 INPATIENTS BY U.S. STATE (%)



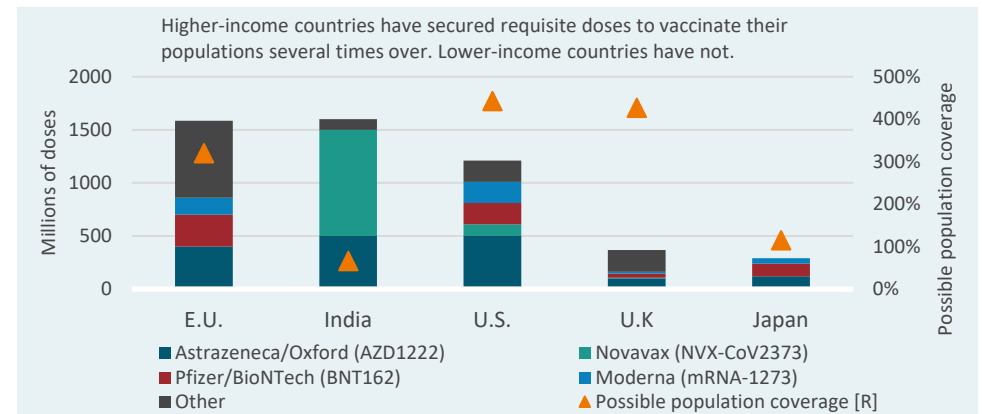
Source: Bloomberg, as of 1/9/21

## SEVEN-DAY AVERAGE DAILY DEATHS PER 100,000 IN POPULATION



Source: Bloomberg, as of 1/14/21

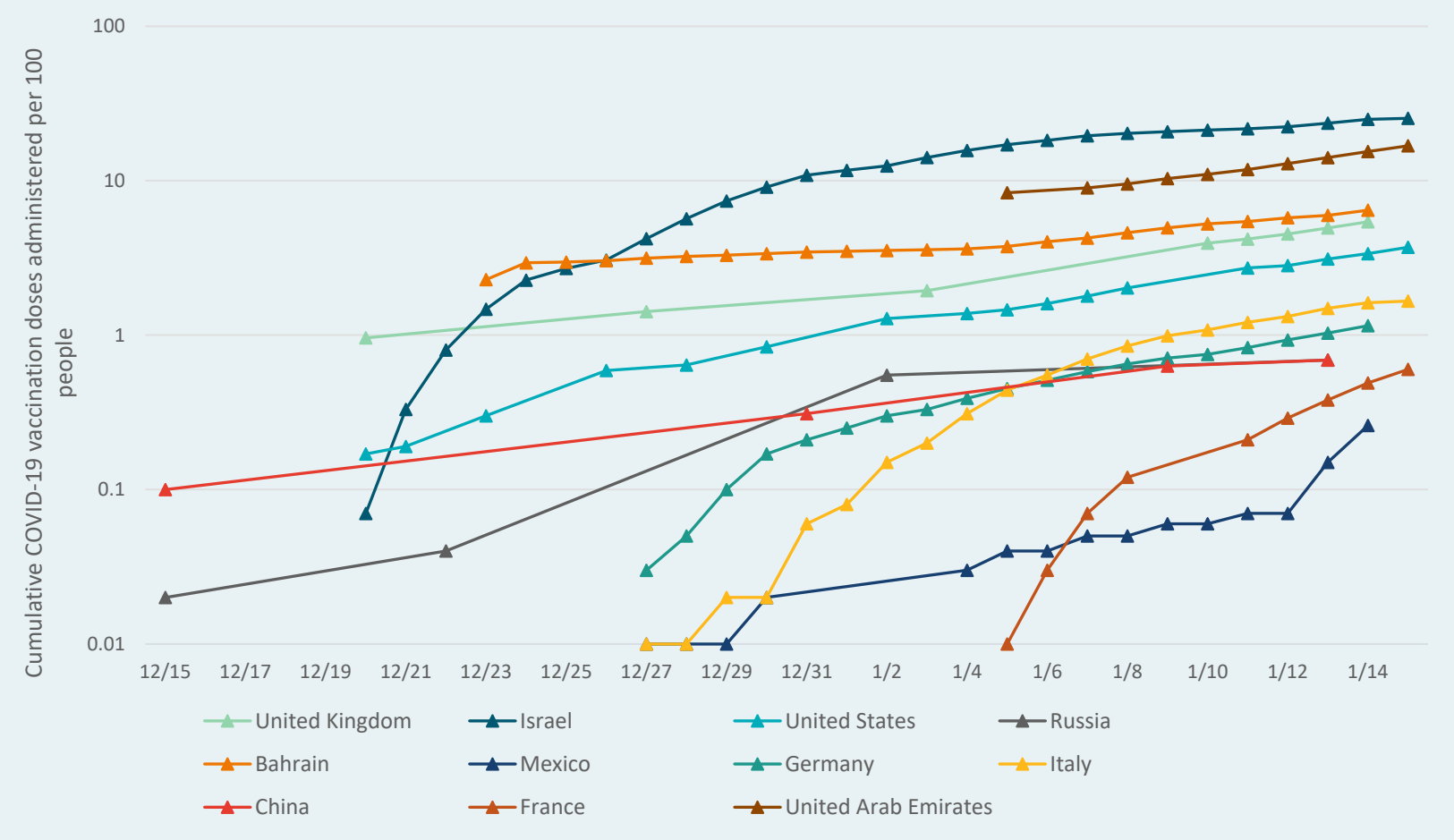
## VACCINE COVERAGE BY COUNTRY



Source: Duke Global Health Innovation Center, as of 1/8/21; possible population coverage includes confirmed and potential doses committed to – it is possible not all vaccines will be approved.

# Global vaccination campaign

CUMULATIVE COVID-19 VACCINE DOSES ADMINISTERED PER 100 PEOPLE

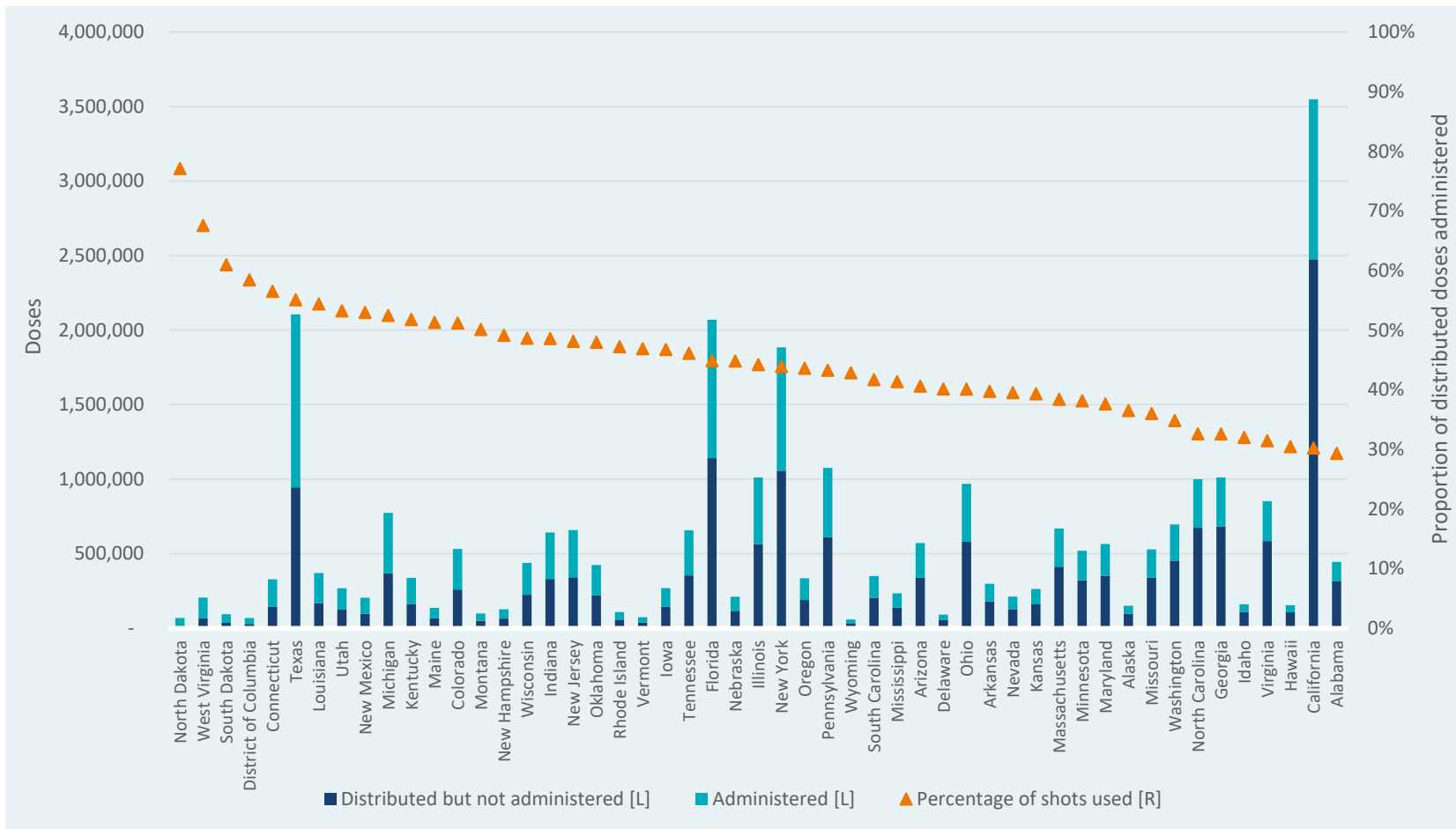


Israel has led the way so far, but it is a country with a size and population comparable to New Jersey

Source: Our World in Data, as of 1/15/21

# Administration issues in the U.S.

THE GAP BETWEEN DISTRIBUTED AND ADMINISTERED VACCINE DOSES



As of January 15<sup>th</sup>, roughly 13 million doses had been administered nationwide, accounting for roughly 42% of all doses distributed

President Biden is aiming to achieve 100 million vaccine dose administrations in his first 100 days in office

Source: Bloomberg, as of 1/15/21

# GDP growth

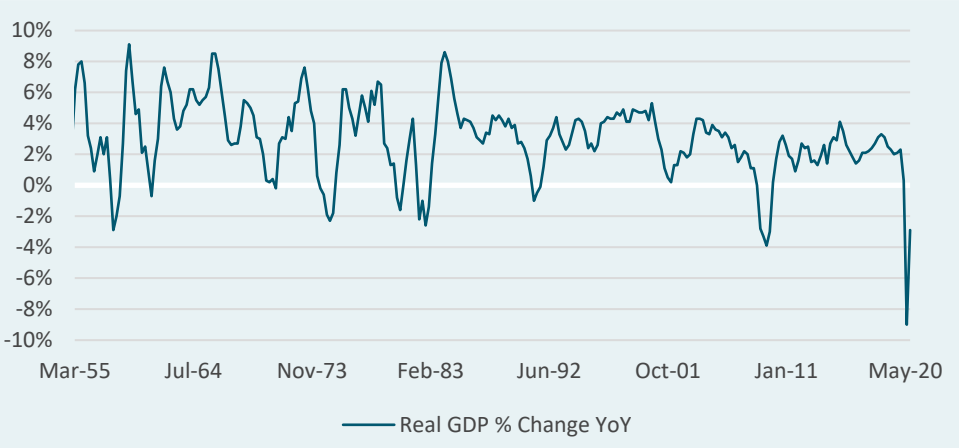
Real GDP grew at a -2.8% rate year-over-year in the third quarter (+33.4% quarterly annualized rate) as the U.S. economy recovered much of the economic activity lost during the depths of the pandemic. Personal consumption expenditures expanded at a quarterly annualized pace of -25.4%. Growth was broad-based, and included strong private investment, exports, and inventory builds.

Not only was this bounce-back a product of pent-up demand released by the economic reopening, it was also the result of a coordinated and historic stimulus effort by the U.S.

government. After the Federal Reserve took interest rates to zero and flooded the markets with liquidity, Congress passed an omnibus spending bill, including \$900 billion earmarked for COVID-19 relief. Key features of the package included a re-up of the Paycheck Protection Program, \$600 stimulus checks for most individuals, and \$300 per week in additional unemployment benefits over a 10-week period.

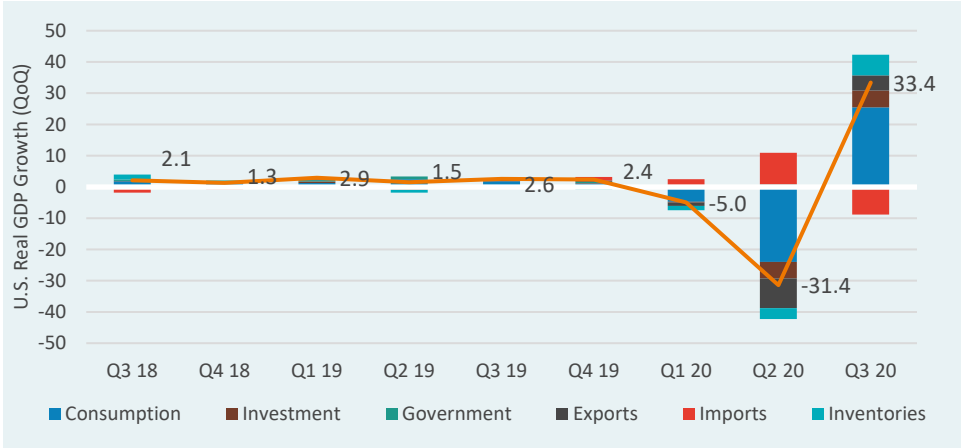
The Atlanta Fed's forecast for Q4 growth was 7.4% on a quarter-over-quarter annualized basis (-1.7% year-over-year) as of January 15<sup>th</sup>, suggesting further economic recovery.

U.S. REAL GDP GROWTH (YOY)



Source: Bloomberg, as of 9/30/20

U.S. GDP GROWTH ATTRIBUTION



Source: BEA, annualized quarterly rate, as of 9/30/20

# Inflation

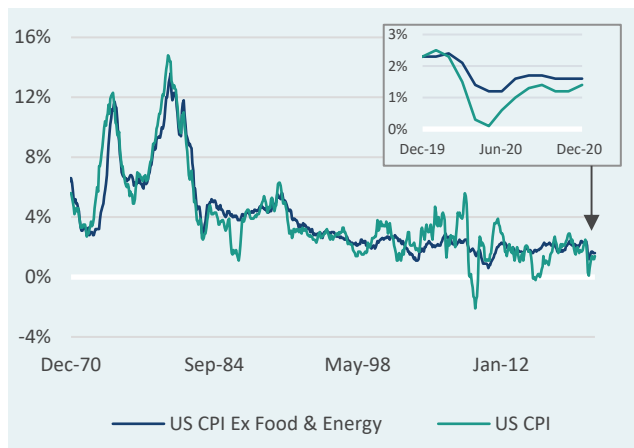
Headline inflation stayed relatively stable during Q4, at 1.4% year-over-year in December. Energy prices have acted as a drag on inflation, with gasoline (-15.2%) and fuel oil (-20.0%) showing the largest moves. Food (+3.9%), as well as used cars & trucks (+10.0%), had a lifting effect on inflation during the year. Inflation excluding volatile food and energy prices increased 1.6%.

The U.S. 10-year TIPS breakeven inflation rate headed notably higher over the quarter, from 1.6% in September to

2.0% in December. Although U.S. inflation is lower than pre-pandemic levels, market pricing for inflation is the highest since 2018.

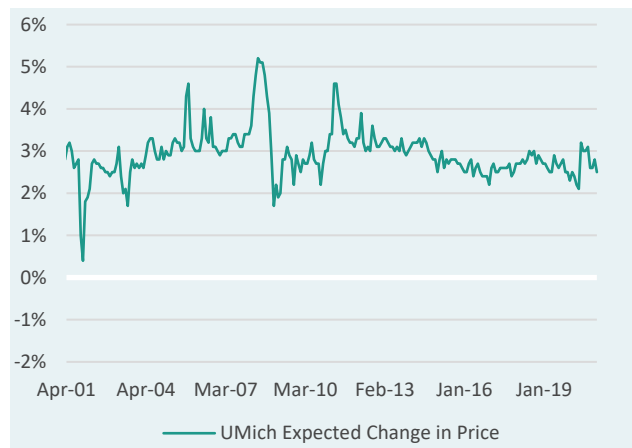
Consumer inflation expectations, as indicated by the University of Michigan survey, proved volatile throughout the year. After starting 2020 at an expected 2.3% rate of inflation, expectations fell to 2.1% in April before spiking to 3.2% in May. Expectations fell in the fourth quarter and settled at 2.5% in December.

U.S. CPI (YOY)



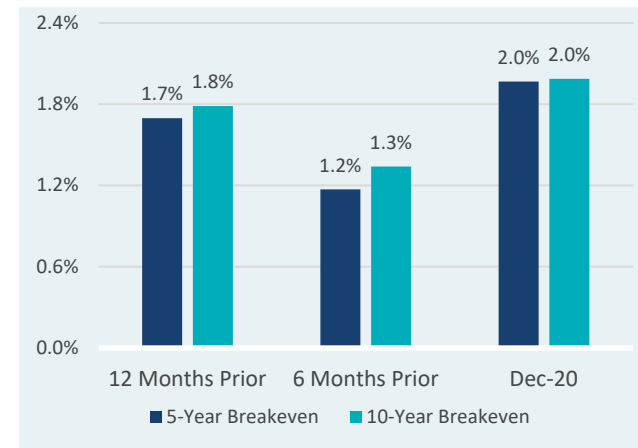
Source: Bloomberg, as of 12/31/20

CONSUMER INFLATION EXPECTATIONS



Source: University of Michigan, as of 12/31/20

BREAKEVEN INFLATION RATES



Source: Bloomberg, as of 12/31/20

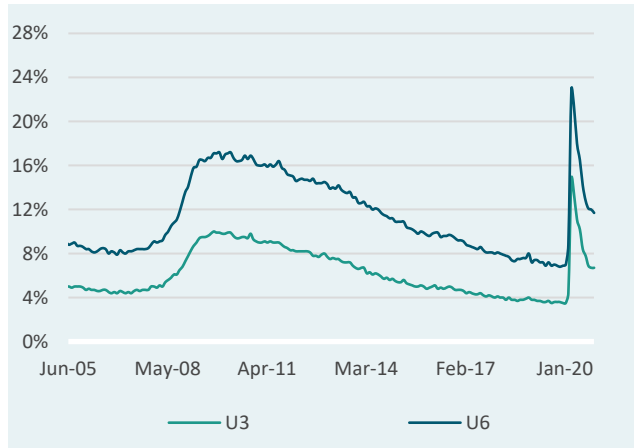
# Labor market

After impressive employment gains in Q3, the recovery appeared to be stalling in recent months. Unemployment fell from 7.8% in September to 6.7% in December—a small improvement compared to previous months. Additionally, while the current unemployment rate does not seem exceptionally weak from a historical perspective, this metric masks the fact that the U.S. labor force participation rate also fell during COVID-19. In simpler terms, since the pandemic, roughly 3% of workers are now unemployed and seeking work, and an additional 2% of workers are now unemployed and *not* seeking work.

During an economic recession, it is important to understand the portion of newly unemployed workers who seek to quickly rejoin the workforce (cyclical unemployment), relative to the portion of workers who lose their jobs and end up more permanently out of work due to lack of opportunities or discouragement (structural unemployment). As shown in the chart below, a growing share of unemployed workers have remained out of work since the onset of the economic recession.

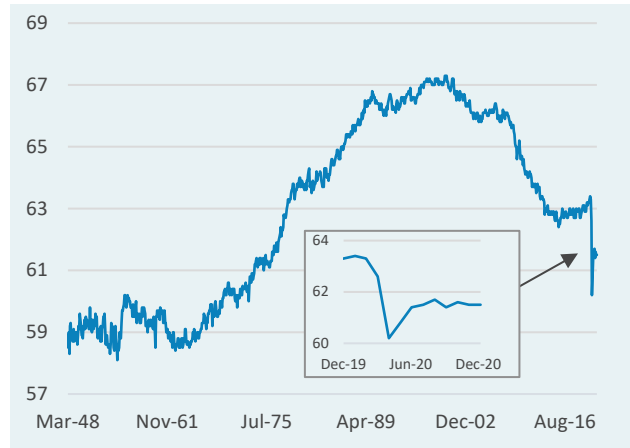
The U.S. employment recovery appears to be stalling

U.S. UNEMPLOYMENT



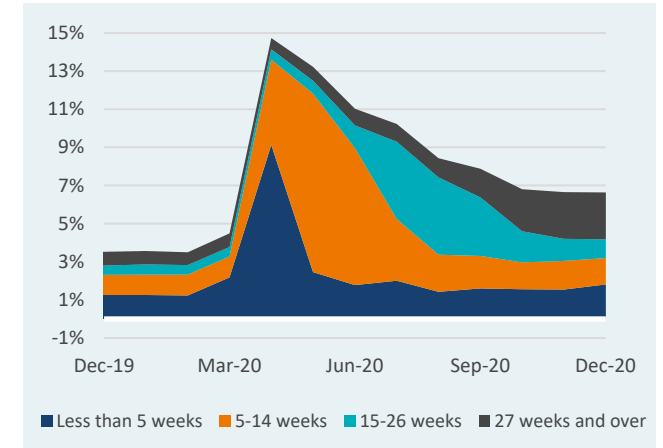
Source: FRED, as of 12/31/20

LABOR PARTICIPATION RATE



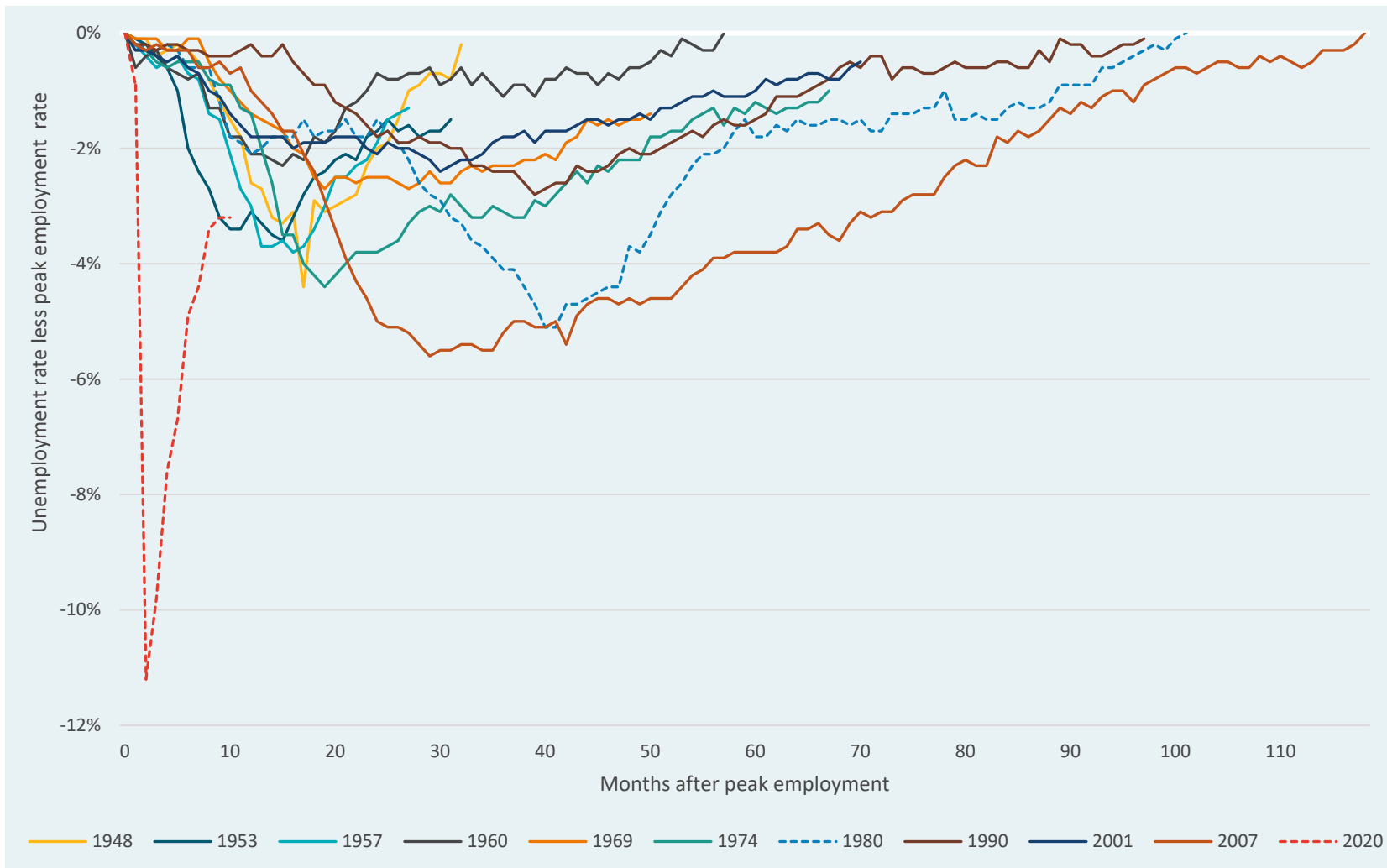
Source: FRED, as of 12/31/20

UNEMPLOYMENT DECOMPOSITION BY DURATION



Source: BLS, as of 12/31/20

# U-3 unemployment rates relative to peaks



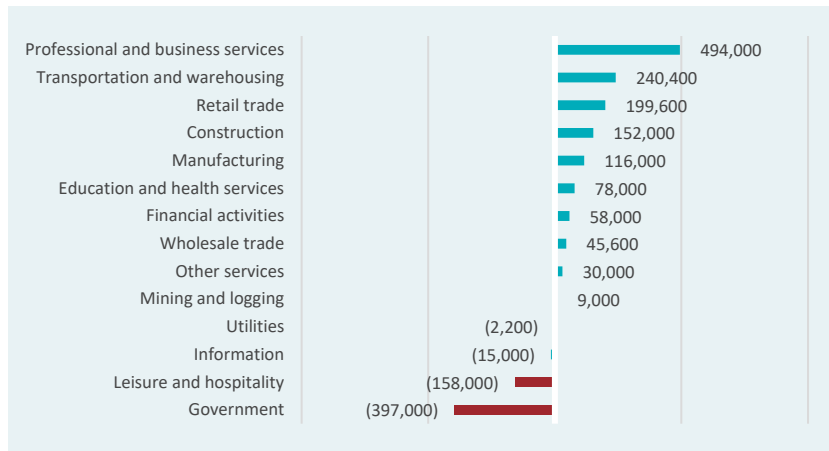
The Covid-19 recession features a historically-abrupt loss and subsequent rebound in broad unemployment

Source: Bloomberg, BLS, as of 12/31/20

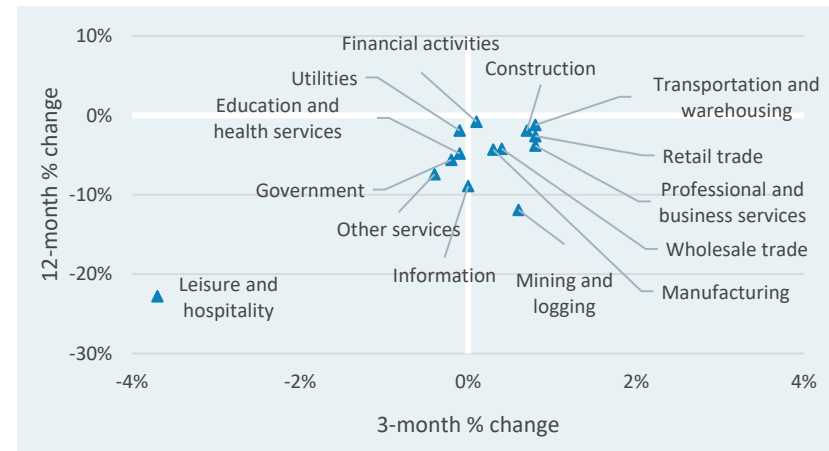


# Employment conditions

## Q4 2020 NONFARM PAYROLLS CHANGES

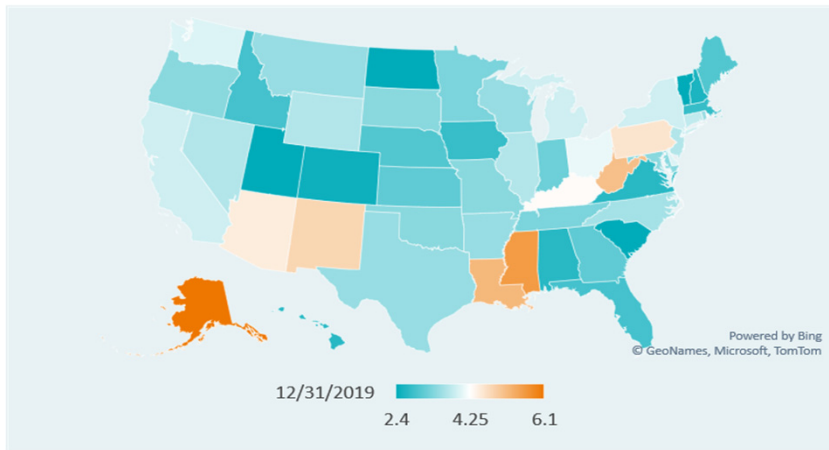


## NONFARM PAYROLL GROWTH BY SECTOR

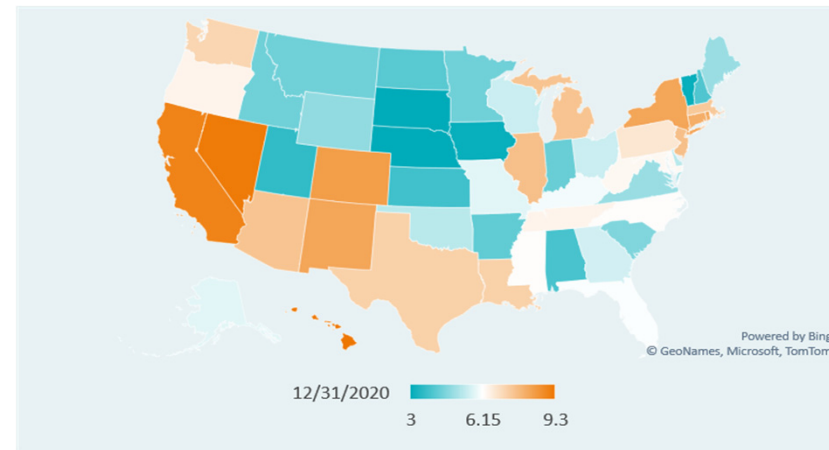


While employment in many sectors bounced back in Q4, jobs in the leisure and hospitality sector dipped as the impact of state lockdowns began to show up in the payrolls data

## U-3 UNEMPLOYMENT (12/31/2019)



## U-3 UNEMPLOYMENT (12/31/2020)



Despite the broad gains in the 4<sup>th</sup> quarter, nonfarm payrolls shrunk in every sector over the full calendar year

Source: BLS, as of 12/31/20 – or most recent release

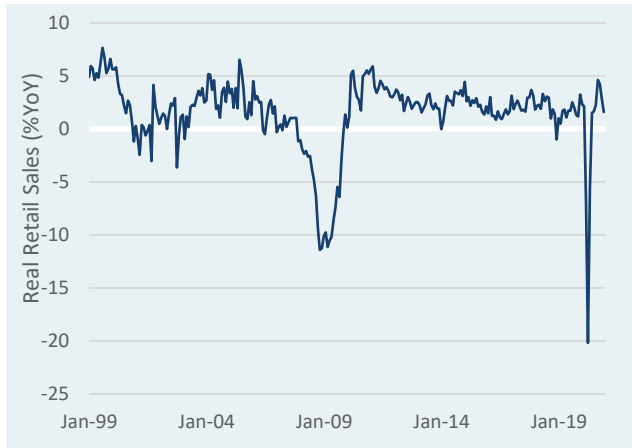
# The consumer

U.S. retail sales have shown a surprising recovery after falling -20% year-over-year in April. Retail sales, after adjusting for inflation, increased 1.6% in December. Spending patterns have shown resiliency despite the economic slowdown. Automobile and home sale activity, for example, has recovered to previous levels.

However, recent spending patterns have been vastly affected by unprecedented government stimulus. Because this expansion was far from a “natural” recovery, it will be worth watching how consumption trends change as the various economic stimulus programs end. This effect may already be apparent as retail sales growth slowed from 4.6% in September to 1.6% in December.

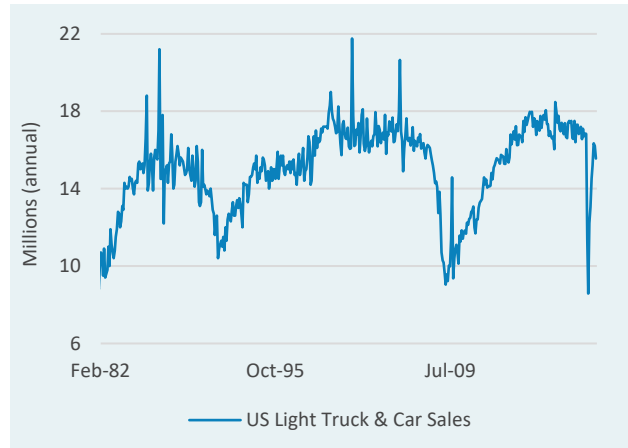
According to anonymized cellular phone data collected by Google for COVID-19 public health research, Americans began returning to their daily routines through late spring and summer, as activity began moving back to normalcy. However, these improvements plateaued across certain types of activities such as workplace travel, retail & recreation, and transit station usage, and this activity has slowed down once again. Continued weak activity, or even a further slowdown due to renewed government restrictions, could cast doubt on the U.S. economic recovery.

**REAL RETAIL SALES GROWTH (YOY)**



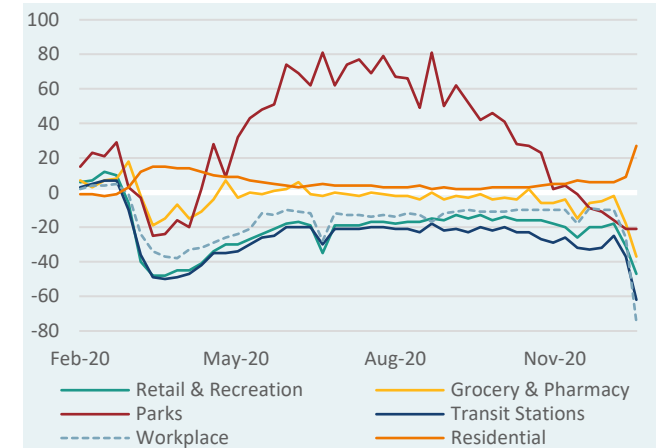
Source: FRED, as of 12/31/20

**AUTO SALES**



Source: Federal Reserve, as of 11/30/20

**GOOGLE U.S. ACTIVITY TRACKER**



Source: Google anonymized U.S. citizen mobility, as of 12/31/20

# Sentiment

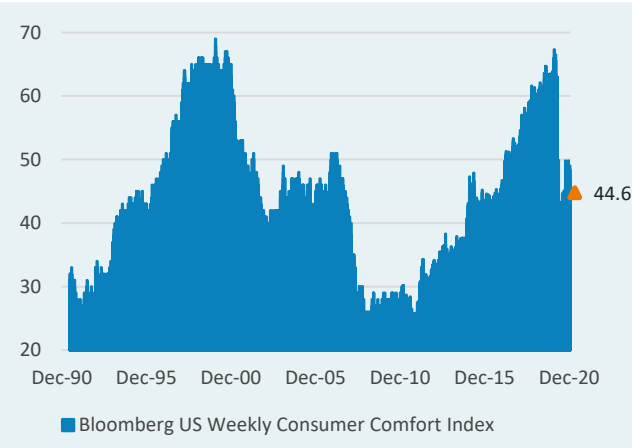
Consumer sentiment remained stubbornly low during the fourth quarter, despite broad recoveries in consumer spending, auto sales, and the housing market.

The Bloomberg Consumer Comfort Index attempts to gauge Americans’ views on the economy, their personal financial situation, and buying conditions. The index fell from 49.3 to 44.6 during the quarter. The University of Michigan Consumer Sentiment Survey attempts to gauge attitudes about the business climate, personal finances, and spending conditions. The index was flat at 80.7 in Q4—down from a

cycle high of 101.0 in February.

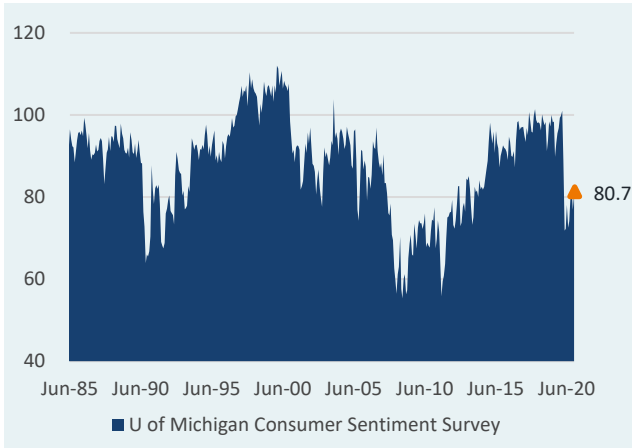
The NFIB Small Business Optimism Index exhibited a sharp decline to 95.9 in Q4, bringing the index back towards pandemic lows. The survey suggested that most business owners expect deteriorating conditions over the next six months. The survey also showed that concerns exist regarding government-mandated business closures due to COVID-19, and that the new U.S. administration may be less friendly toward the business community.

**CONSUMER COMFORT**



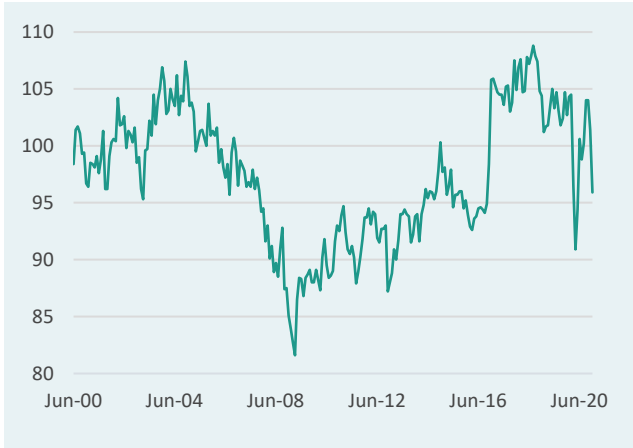
Source: Bloomberg, as of 12/31/20

**CONSUMER SENTIMENT**



Source: University of Michigan, as of 12/31/20

**SMALL BUSINESS OPTIMISM**



Source: NFIB, as of 12/31/20

# Housing

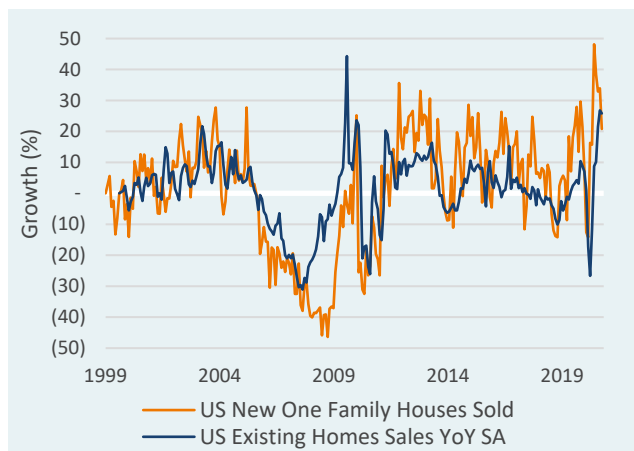
Home sales activity continued to grow at an extremely fast pace in the fourth quarter, as record-low interest rates and the work-from-home environment fueled demand. It remains to be seen the degree to which business work-from-home policies become permanent, post-pandemic. The direction of these trends may have a far-reaching impact on home sales as workers seek more space for home offices, and perhaps also feel greater freedom to move outside of major urban areas. Existing home sales were 25.8% higher than one-year prior, an overall rate of growth not experienced in over a decade.

Despite a gradual bounce-back of U.S. Treasury interest rates,

the 30-year U.S. Fixed Mortgage Rate has continued to move lower. The direction of mortgage rates from here will likely have a material impact on home prices.

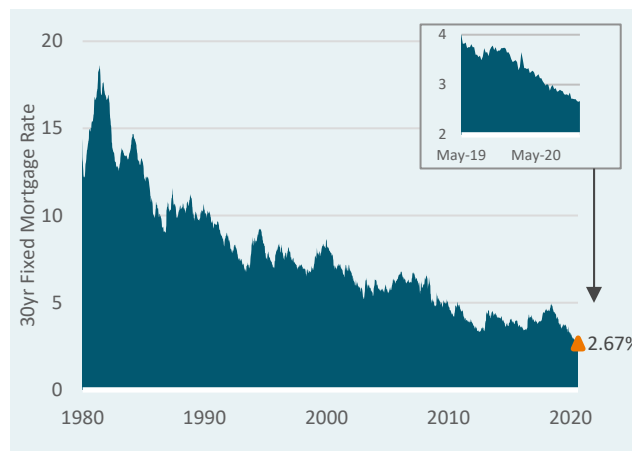
It is important to note that the overall cost of owning a home is a combination of home prices and borrowing rates (among many other variables, of course). While the price of a new home in the U.S. is, on average, higher than ever before, record-low interest rates have compensated for higher prices. As suggested by the Housing Affordability Index, the overall cost of owning a home today is below-average, historically speaking.

**U.S. HOME SALES (YOY)**



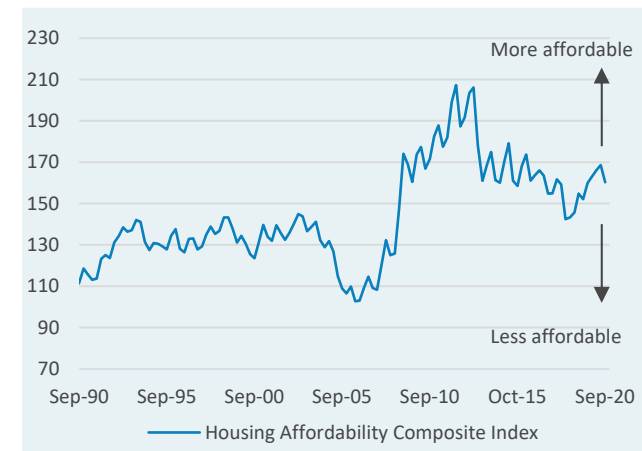
Source: FRED, as of 11/30/20

**30-YEAR FIXED MORTGAGE RATE (AVERAGE)**



Source: FRED, as of 12/31/20

**HOUSING AFFORDABILITY INDEX**



Source: National Association of Realtors, as of 9/30/20

# International economics summary

- Economic growth in Q3, although negative on a year-over-year basis, painted an optimistic picture of the recovery. Consumers and businesses around the world have attempted to continue on, despite recent lockdowns, restrictions, and safety concerns. GDP growth figures have improved markedly from the depths of Q2. Most economies have recovered more than half of lost activity experienced during the prior quarter.
- European Union leaders agreed on a historic €1.8 trillion budget-and-recovery plan for 2021-2027, paving the way for a €750-billion pandemic relief package which will be financed by joint debt issuance.
- U.K. and E.U. officials reached an official trade deal at the 11<sup>th</sup> hour before the December 31<sup>st</sup>, 2020 conclusion of the transition period following Britain's official cutting of ties with the E.U. last January. The

agreement marked the beginning of a new chapter in the history of British relations with Europe.

- Governments have taken different approaches to supporting workers, and while many approaches have had similar economic effects, they have often had drastically different impacts on official unemployment figures. We believe official unemployment figures are of limited value in this environment—more in-depth analysis is likely required.
- The pandemic placed downward pressure on inflation. Since then, inflation levels have generally remained muted in developed markets while recovering moderately in emerging economies. China appears to be an outlier, as inflation has recently dipped below zero. This move was fueled by falling pork prices, which had been moving higher in recent years and pushing up inflation.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	(2.8%) 9/30/20	1.4% 12/31/20	6.7% 12/31/20
Eurozone	(4.3%) 9/30/20	(0.3%) 12/31/20	8.3% 11/30/20
Japan	(5.7%) 9/30/20	(1.3%) 12/31/20	2.8% 11/30/20
BRICS Nations	1.9% 9/30/20	1.5% 12/31/20	5.1% 12/31/20
Brazil	(3.9%) 9/30/20	4.5% 12/31/20	14.3% 10/31/20
Russia	(3.4%) 9/30/20	4.9% 12/31/20	6.1% 11/30/20
India	(7.5%) 9/30/20	4.6% 12/31/20	9.1% 12/31/20
China	2.3% 12/31/20	0.2% 12/31/20	4.2% 12/31/20

*NOTE: India lacks reliable government unemployment data. Unemployment rate shown above is estimated from the Centre for Monitoring Indian Economy*

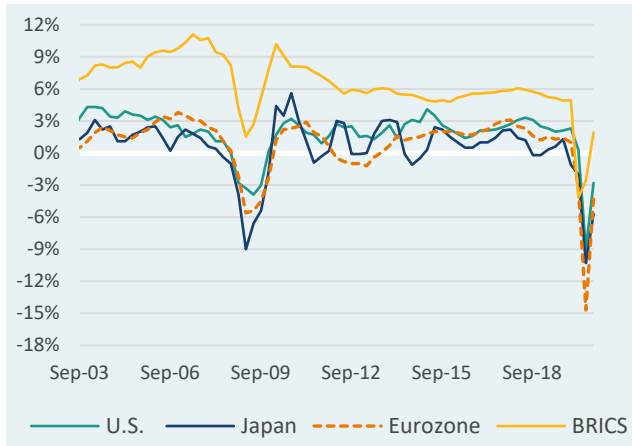
# International economics

Economic growth in Q3, although negative on a year-over-year basis, painted an optimistic picture of the recovery. Consumers and businesses around the world have attempted to continue on, despite recent lockdowns, restrictions, and safety concerns. GDP growth figures have improved markedly from the depths of Q2. Most economies have recovered more than half of lost activity seen during the prior quarter. The direction of recovery was similar across the emerging markets, and these economies have maintained their growth “premium” over developed markets throughout the crisis.

Unemployment in the Eurozone has fallen slightly to 8.3%

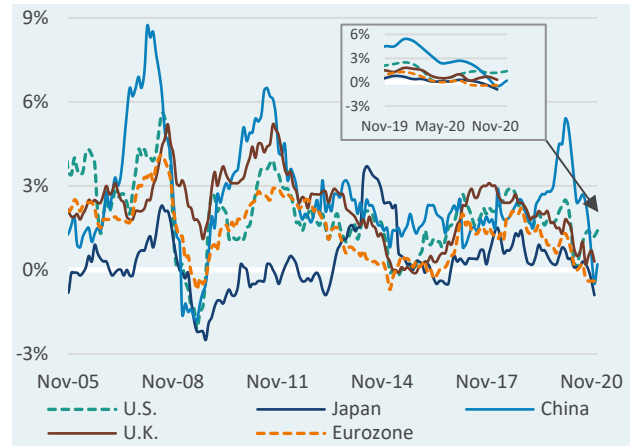
from a high of 8.7% in July. Governments around the world have taken different approaches to supporting workers. One approach, as taken by the U.S., was to provide greater financial support to workers who had lost their jobs. Another approach, such as that taken by the UK, was for government to effectively pay workers’ wages to keep them on payroll. These approaches, which may be very similar in overall economic effect, can appear drastically different in the official rate of unemployment statistics (shown below). In short, official unemployment figures may be of limited value in this environment—more in-depth analysis is required.

**REAL GDP GROWTH (YOY)**



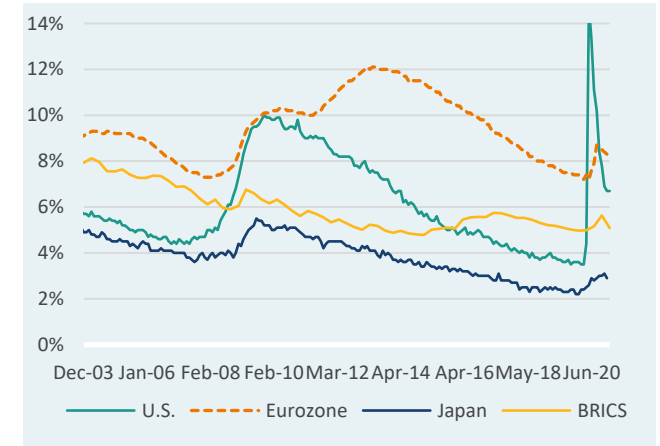
Source: Bloomberg, as of 9/30/20

**INFLATION (CPI YOY)**



Source: Bloomberg, as of 12/31/20 – or most recent release

**UNEMPLOYMENT**



Source: Bloomberg, as of 12/31/20 – or most recent release

# Fixed income rates & credit

# Interest rate environment

- Longer-dated U.S. Treasury yields moved upward in the fourth quarter, with the U.S. 10-year rising above 1.0% to begin 2021. Higher interest rates may place pressure on equity valuations if this trend continues. The yield of shorter-dated bonds and cash has not moved and is expected to stay near zero.
- Ten-year breakeven inflation rates rallied from 1.6% to 2.0% in Q4, likely propelled higher by expectations that Biden’s fiscal approach paired with vaccine rollouts will result in higher longer-term growth and inflation. The rise in priced inflation outpaced the rise in nominal Treasury yields, leading the 10-year U.S. real yield to decline from -0.95% to -1.07%, near record lows.
- Officials at the Federal Reserve remained committed to a \$120 billion monthly pace of bond purchases until there is “substantial progress” toward employment and inflation objectives. Fed Chair Powell left the door open to adjusting the pace of those purchases as necessary, and stated that the Fed would “let the world know...well in advance of active consideration of beginning a gradual taper of asset purchases.”
- The European Central Bank expanded the size of its Pandemic Emergency Purchase Program (PEPP) by €500 billion, bringing the new total to €1.85 trillion. The ECB also extended the horizon for purchases under PEPP to March 2022, and the timeline for reinvestment of maturing PEPP assets to the end of 2023.
- Joe Biden nominated Janet Yellen, Jerome Powell’s predecessor, as U.S. Treasury Secretary. Throughout the pandemic, central bankers have been calling for further coordination of fiscal and monetary action, and Yellen’s nomination could represent the next step down that path.

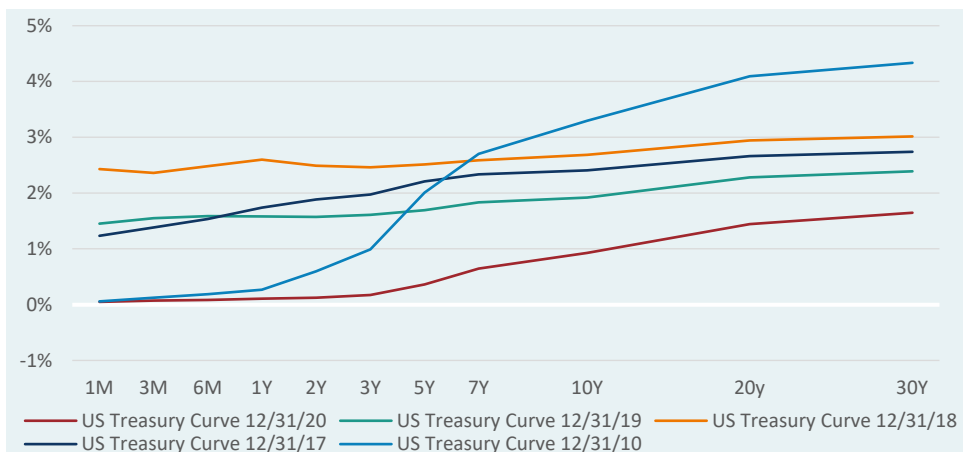
Area	Short Term (3M)	10-Year
United States	0.06%	0.91%
Germany	(0.83%)	(0.57%)
France	(0.77%)	(0.34%)
Spain	(0.83%)	0.04%
Italy	(0.65%)	0.54%
Greece	(0.38%)	0.62%
U.K.	(0.06%)	0.20%
Japan	(0.12%)	0.02%
Australia	0.02%	0.97%
China	2.28%	3.14%
Brazil	2.00%	6.91%
Russia	3.54%	6.01%

Source: Bloomberg, as of 12/31/20

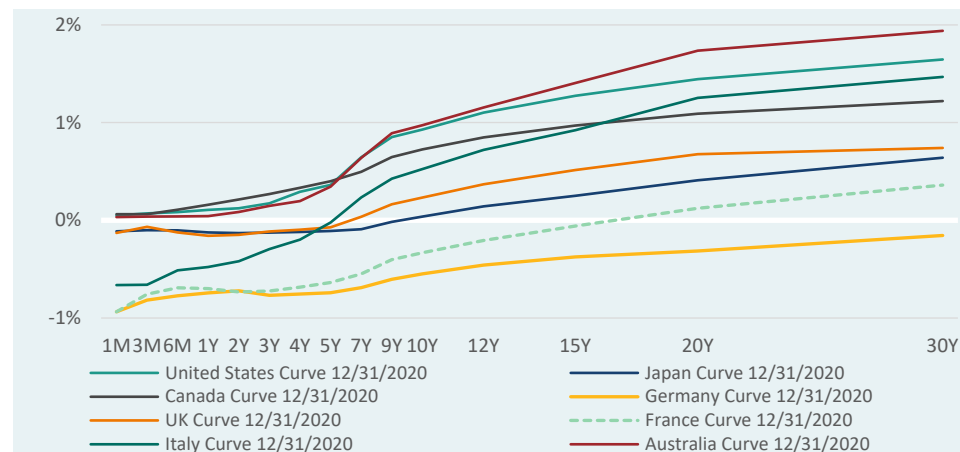


# Yield environment

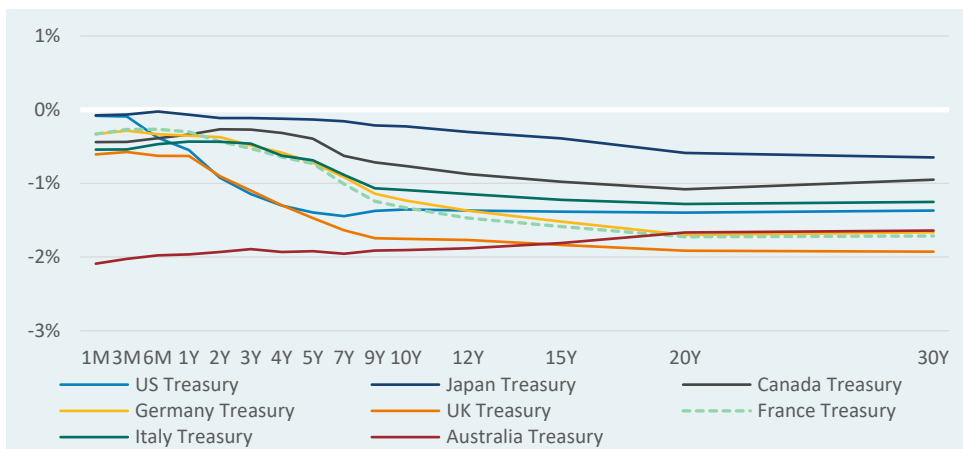
## U.S. YIELD CURVE



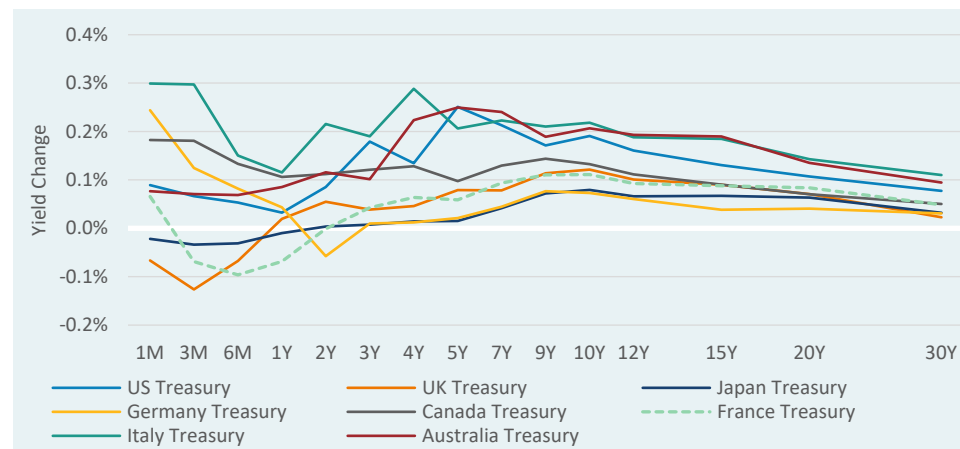
## GLOBAL GOVERNMENT YIELD CURVES



## YIELD CURVE CHANGES OVER LAST FIVE YEARS



## IMPLIED CHANGES OVER NEXT YEAR



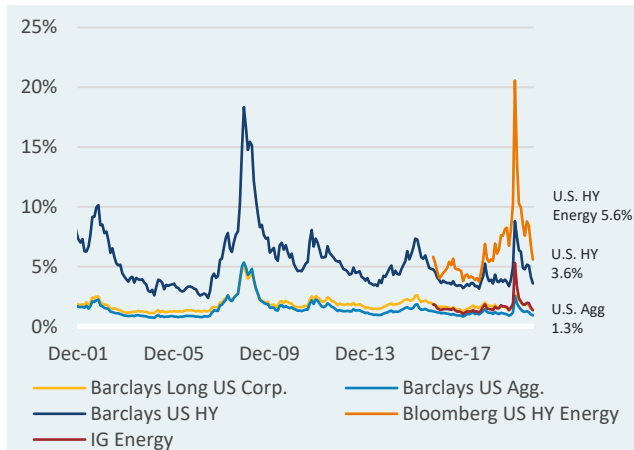
Source: Bloomberg, as of 12/31/20

# Credit environment

After four quarters of exceptional volatility, credit market spreads ended 2020 roughly in line with where they started. Both investment grade and below investment grade assets experienced positive performance, driven in part by increased investor demand for yield but mainly by the unprecedented Fed action in March which led rates to all-time lows. For the calendar year, investment grade credit returned 9.4%, outperforming high yield (+7.1%), and banks loans (+2.8%). The effects of COVID market disruptions created wide dispersion among sectors as metals/mining, freight, and food/drug retail outperformed while energy and domestic telecom underperformed.

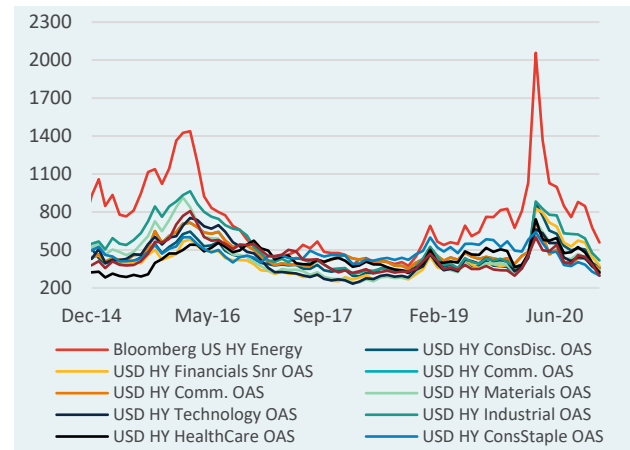
In the fourth quarter, high yield bonds returned 6.5%, outperforming bank loans (+3.6%) and investment grade credit (+2.8%). Positive vaccine news and conclusion of the presidential election led to strong risk-on sentiment during the quarter, driving longer duration and lower quality bonds to outperform within U.S. credit. In addition, credit spreads continued to tighten, with high yield spreads tightening 157 bps to 360 bps and investment grade spreads falling 40 bps to finish the year at 92 bps.

## SPREADS



Source: Barclays, Bloomberg, as of 12/31/20

## HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 12/31/20

Market	Credit Spread (OAS)	
	12/31/20	12/31/19
Long U.S. Corp	1.4%	1.4%
U.S. Inv Grade Corp	1.0%	0.9%
U.S. High Yield	3.6%	3.7%
U.S. Bank Loans*	4.6%	4.4%

Source: Barclays, Credit Suisse, Bloomberg, as of 12/31/20

\*Discount margin (4-year life)

# Default & issuance

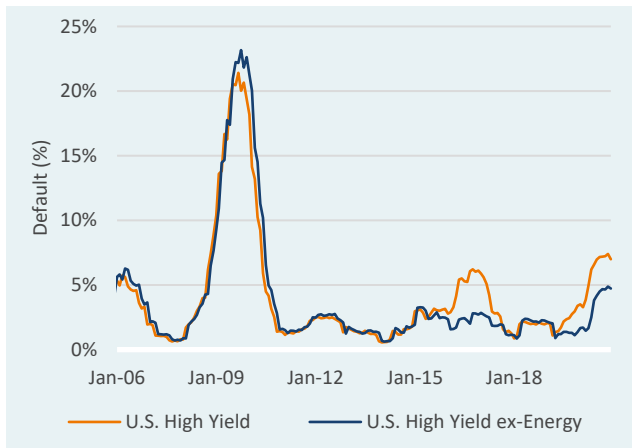
A total of 88 companies defaulted in 2020, representing \$130 billion. This activity was led by the energy, telecom, and retail sectors. The \$130 billion in defaults in 2020 ranked second only to the \$185 billion experienced in 2009.

The par weighted U.S. high yield default rate increased 0.4% during the quarter to 6.2%—well above the long-term average of 3.0-3.5%. If the energy sector is excluded (which showed an annual default rate of 20.5%), the high yield default rate came in at a more modest 4.5%. During the fourth quarter, the leveraged loan default rate came in at 4.0%—moderately above the long-term average of 3.0%.

High yield bond issuance fell from the record levels posted in Q2 and Q3 but remained elevated in Q4. Total issuance for 2020 was the highest on record at \$511 billion, outpacing 2013's historical peak of \$378 billion.

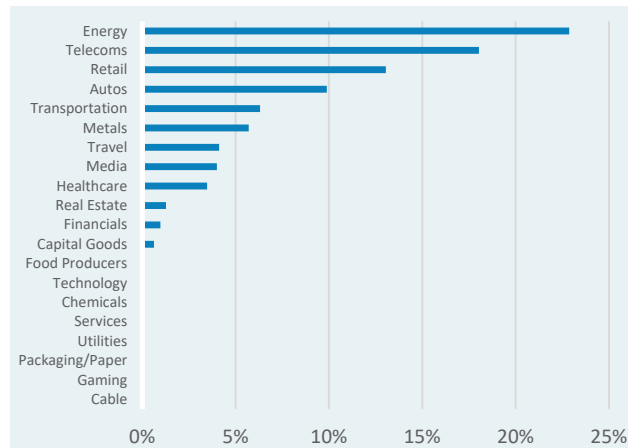
Investment grade issuance for 2020 totaled \$1.8 trillion, which was 40% higher than the prior record achieved in 2017. The fourth quarter was the slowest of the year with \$215 billion in new issues—a level that was in line with the four-year average

HY DEFAULT RATE (ROLLING 1-YEAR)



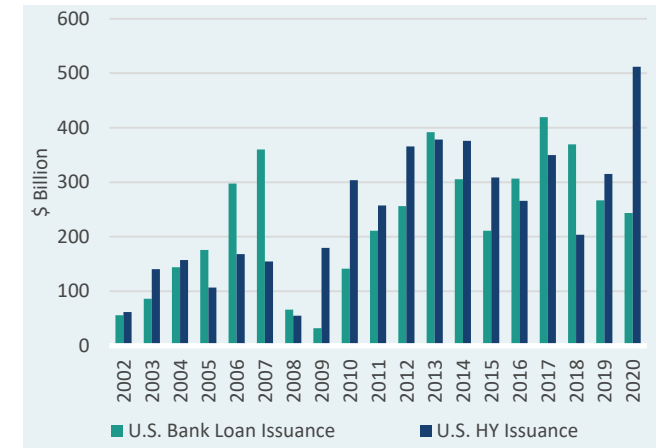
Source: BofA Merrill Lynch, as of 12/31/20

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



Source: BofA Merrill Lynch, as of 12/31/20 – par weighted

U.S. ISSUANCE (\$ BILLIONS)



Source: BofA Merrill Lynch, as of 12/31/20

# Equity

# Equity environment

- U.S. equities delivered +12.1% during the quarter, ending the year at an all-time-high. The S&P 500 was one of the strongest equity markets in 2020, up +18.4% despite an earnings recession and considerable economic uncertainty.
- Emerging market equities (MSCI EM +19.7%) once again outperformed U.S. (S&P 500 +12.1%) and international developed equities (MSCI EAFE +16.0%) in Q4. Latin American equities showed significant outperformance during the quarter (MSCI Latin America +34.8%), after years of lagging behind other emerging markets.
- According to FactSet, S&P 500 Q4 earnings are expected to be down -8.8%. This estimate improved materially from the -12.7% drop expected on September 30<sup>th</sup>. Analysts are expecting a -13.3% earnings decline for full-year 2020.
- The Cboe VIX Index remained rangebound in the fourth quarter, ending the year at 22.8. Priced volatility is moderately elevated relative to the longer-term average of 19.
- Weakness in the U.S. dollar relative to both emerging market and developed market currencies remained a theme during the fourth quarter, as the Bloomberg Dollar Spot Index fell to a two and a half year low. Analysts attributed some of the weakness in the greenback to lower relative real yields in the United States, as nominal Treasury yields picked up.
- Within the index, a sizable rotation occurred in Q4 as certain sectors that had been beaten-down during the pandemic performed strongly. Rising energy prices boosted the Energy sector, while higher interest rates on the longer end of the yield curve improved the outlook for Financials.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (S&P 500)	12.1%		18.4%	
US Small Cap (Russell 2000)	31.4%		20.0%	
US Large Value (Russell 1000 Value)	16.3%		2.8%	
US Large Growth (Russell 1000 Growth)	11.4%		38.5%	
International Large (MSCI EAFE)	16.0%	11.9%	7.8%	2.5%
Eurozone (Euro Stoxx 50)	16.2%	12.2%	5.5%	(1.2%)
U.K. (FTSE 100)	17.2%	11.4%	(8.9%)	(10.2%)
Japan (NIKKEI 225)	21.1%	18.8%	24.2%	19.4%
Emerging Markets (MSCI Emerging Markets)	19.7%	16.0%	18.3%	19.6%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 12/31/20

# Domestic equity

U.S. equities delivered +12.1% during the quarter, ending the year at an all-time-high. The S&P 500 was one of the strongest equity markets in 2020, up +18.4% despite an earnings recession and considerable economic uncertainty.

Within the index, a sizable rotation occurred in Q4 as certain sectors that had been beaten-down during the pandemic performed strongly. Rising energy prices boosted the Energy sector, while higher interest rates improved the outlook for Financials. It remains to be seen whether certain consumer habits displayed during the pandemic (online shopping and heightened social media usage, for example) begin reverting to previous levels as the world moves back to normalcy or if

instead, these new habits become more permanent in nature. The answer to this question has important implications for future intra-sector performance.

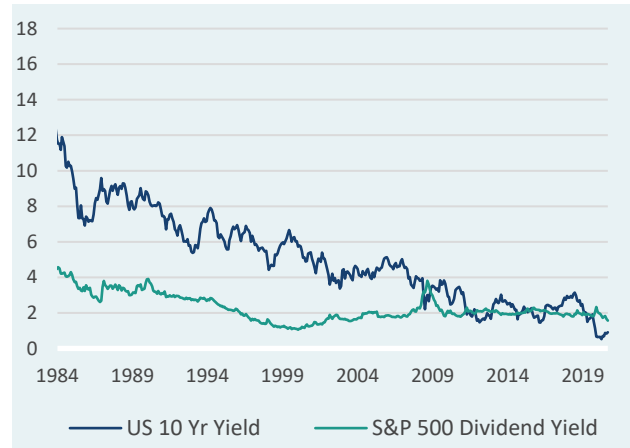
As equities move higher, it is difficult not to notice a disconnect between the US. market and the economy. We believe this rally is the result of a confluence of forces. Ultra-low interest rates, extremely accommodative monetary and fiscal policy, plus the implicit guarantee that further economic weakness will be met with more support and stimulus, seems to be creating a new type of “Goldilocks market” that harkens back to the post-Global Financial Crisis market expansion.

## S&P 500 INDEX



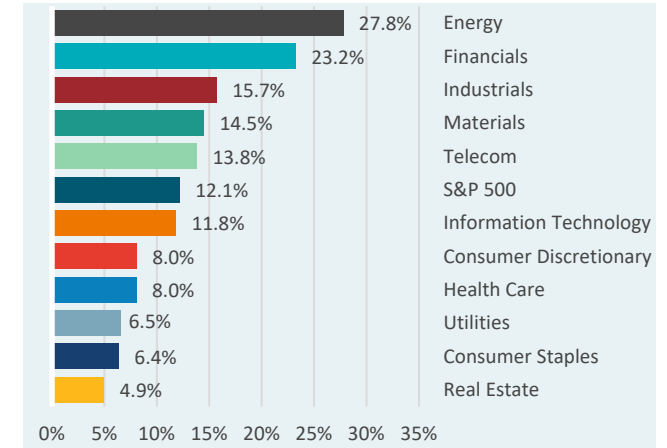
Source: Standard & Poor's, as of 12/31/20

## DIVIDEND YIELD VS BOND YIELD



Source: Standard & Poor's, as of 12/31/20

## Q4 SECTOR PERFORMANCE



Source: Standard & Poor's, as of 12/31/20

# Domestic equity size & style

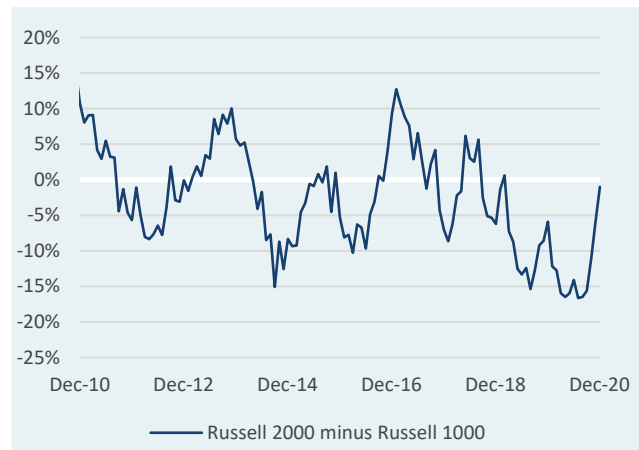
U.S. value stocks beat growth stocks during the fourth quarter (Russell 1000 Value +16.3%, Russell 1000 Growth +11.4%), reversing an extended run of value underperformance. The moderate bounce in value stock performance appeared to be partly driven by sector movements. Energy, Financials, and Materials sectors tend to contain an outsized number of value stocks. These sectors were among the top performers in Q4. Small cap stocks delivered sizable outperformance over large cap stocks (Russell 2000 +31.4%, Russell 1000 +13.7%).

A variety of risks seem to be boiling up around large U.S. technology companies. Given the significant market role that

these businesses play, along with their *growth* rather than *value* characteristics, this regulatory risk could have implications for 2021. First, it is easy to argue that firms such as Google, Amazon, and Facebook have exercised some degree of monopoly power (the FTC recently sued Facebook for alleged illegal monopolistic conduct, and numerous other investigations abound). Further anti-trust actions are likely to come. Second, in recent years there has been a degree of bipartisan consensus that social media companies are doing a poor job of moderating content (though each political party has very different ideas as to the appropriate solution). These risks, which rest perhaps solely on the shoulders of “growth stocks”, will be worth watching in 2021.

Sector performance has fueled dramatic negative performance of the value premium

SMALL CAP VS LARGE CAP (YOY)



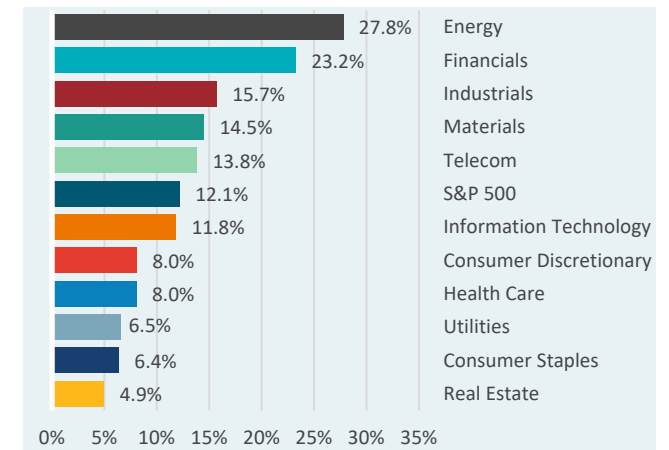
Source: FTSE, as of 12/31/20

VALUE VS GROWTH (YOY)



Source: FTSE, as of 12/31/20

Q4 SECTOR PERFORMANCE



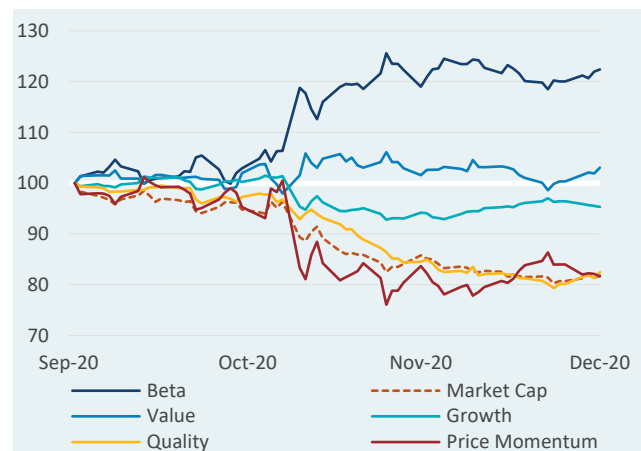
Source: Standard & Poor's, as of 12/31/20

# Factor portfolios in 2020

After a quiet October, factor results significantly diverged in November as investors strongly reacted to positive COVID-19 vaccine news. Anticipating a path toward post-pandemic normalcy, investors rotated into stocks with higher betas and higher volatility (long/short, sector-neutral, S&P 500 Index quintiles). Small-cap stocks also performed well while the value factor modestly gained ground, mostly due to strong results from stocks with attractive price-to-book ratios. Investors funded this rotation by selling large-cap and high-quality positions. Poor price momentum results were further evidence of the strength of the move.

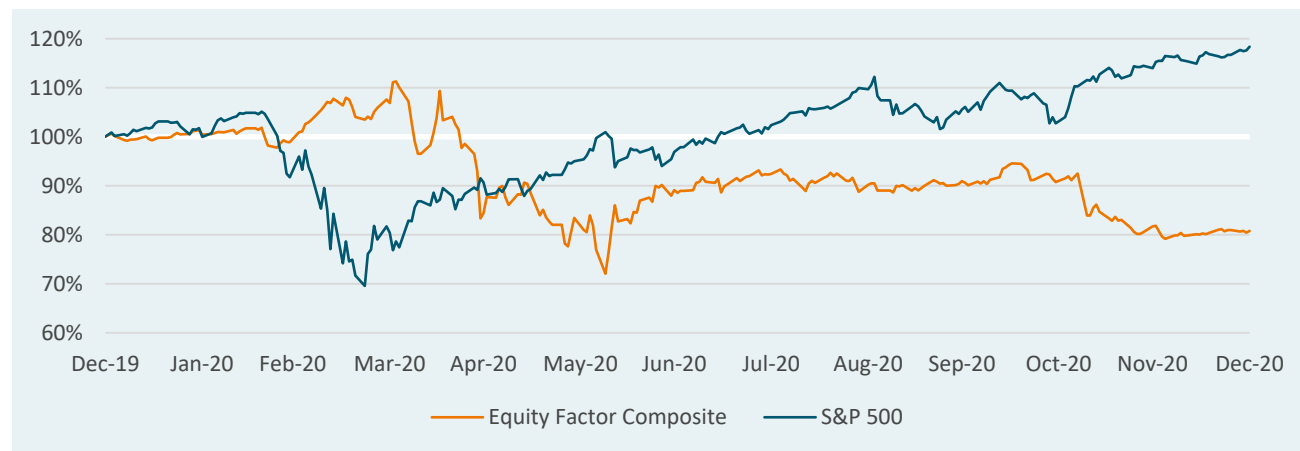
Equity factors had a very difficult year in 2020 and subsequently trailed the equity market by a very wide margin. Quality factors provided some protection during the periods of market turmoil. However other market neutral risk premia strategies did not enjoy consistent recoveries, particularly as market preferences quickly reversed back and forth during the pandemic.

## Q4 2020 PERFORMANCE



Source: J.P. Morgan, as of 12/31/20

## CUMULATIVE RETURN (INDEXED 12/31/19=100%)



Source: J.P. Morgan, as of 12/31/20; Equity Factor Composite represents the performance of a 10-factor model designed as a simple proxy for quant performance. The factors are combined so that the long and short portfolios contain the most- and least-attractive quant stocks.



# International developed equity

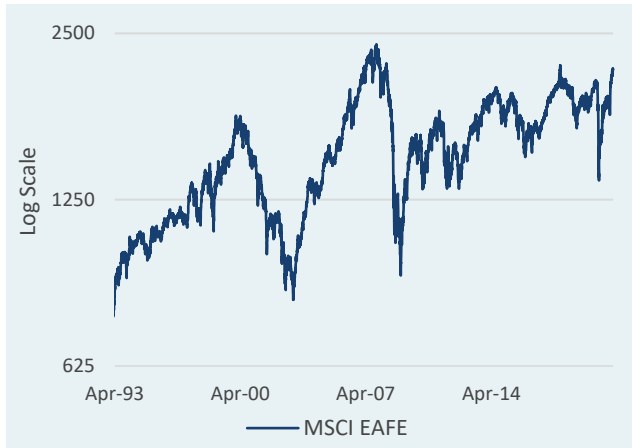
International equities delivered exceptional performance in the fourth quarter, as most global markets have now fully recovered from the March drawdown. The MSCI EAFE Index (+16.0%) outperformed the S&P 500 Index (+12.1%) while lagging the MSCI Emerging Markets Index (+19.7). Continuing U.S. dollar weakness was a notable theme, boosting international equity performance by 5% over the past year.

The recent depreciation of the U.S. dollar has acted as a tailwind to many unhedged international investments. The MSCI EAFE Index unhedged returned 16.0% in Q4, compared

to 11.9% if currency had been hedged. The three largest currency exposures embedded in the MSCI EAFE Index—the euro (32%), the yen (26%), and the pound sterling (13%)—appreciated +4.3%, +2.2%, and +5.7% relative to the U.S. dollar during the quarter, respectively.

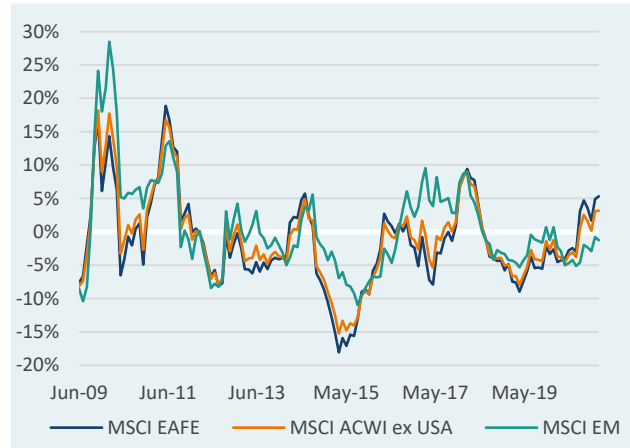
European equities (+17.2%) outperformed Hong Kong (+15.5%) and Japanese (+15.3%) equities in Q4, supported by strong performance in Austria (+47.3%) and Spain (+27.7%). In Oceania, Australia posted solid returns (+22.9%), which were bolstered by a firmer Australian dollar.

**INTERNATIONAL DEVELOPED EQUITIES**



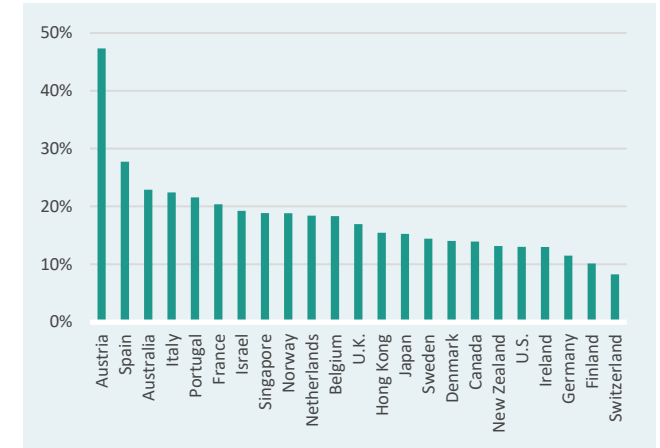
Source: MSCI, as of 12/31/20

**EFFECT OF CURRENCY (1-YEAR ROLLING)**



Source: MSCI, as of 12/31/20

**Q4 2020 PERFORMANCE (ALL IN USD)**



Source: MSCI, Bloomberg, as of 12/31/20

# Emerging market equity

Emerging market equities (MSCI EM +19.7%) outperformed U.S. (S&P 500 +12.1%) and international developed equities (MSCI EAFE +16.0%) once again in Q4. Latin American equities showed significant outperformance during the quarter (MSCI Latin America +34.8%), after years of lagging behind other emerging markets.

The pandemic placed downward pressure on inflation earlier in 2020. Since then, the rate of price movement has recovered in many markets. China appears to be an outlier, as inflation recently dipped below zero. This move was fueled by falling pork prices, which had been moving higher

in recent years and causing above-average levels of inflation.

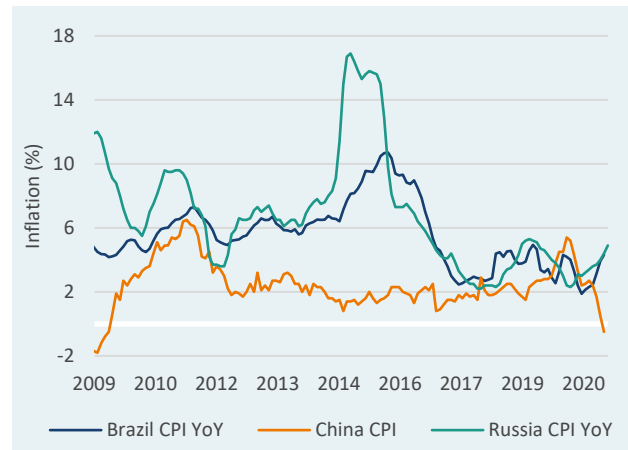
Emerging market currencies sold off significantly during the beginning of the year as investors bid up safe-haven currencies, including the U.S. dollar, amid unprecedented economic and market uncertainty. Since March, however, the embedded currency portfolio of the MSCI Emerging Markets Index began to recover significantly and ended the year nearly on par with where it had started. Continued appreciation of emerging market currencies could provide tailwinds for unhedged U.S. investors in the asset class.

**EMERGING MARKET EQUITY**



Source: MSCI, as of 12/31/20

**INFLATION (YOY)**



Source: Bloomberg, as of 12/31/20 or most recent data

**MSCI EM INDEX EMBEDDED CURRENCY**



Source: Bloomberg, as of 12/31/20

# Equity valuations

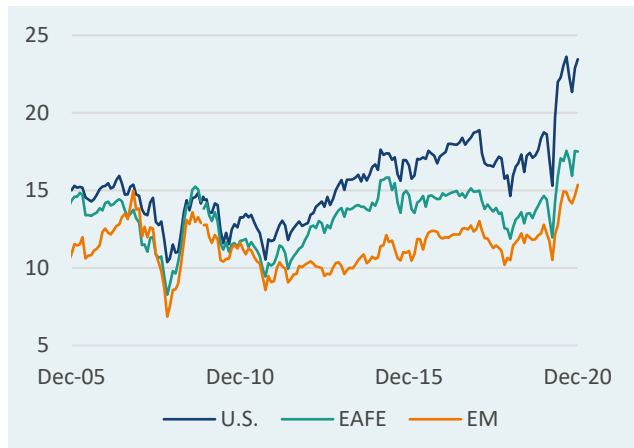
Particularly during the last two months of the year, valuations shot higher alongside equity prices as markets digested news that several COVID-19 vaccine candidates proved more effective than anticipated. Today, price-to-earnings multiples appear stretched relative to long-term averages.

Markets have shown a remarkable ability to look past the pandemic-related disruptions and focus on the light at the end of the tunnel. Some in the industry have viewed the exceptional performance of U.S. equities in 2020 as the “check” that fundamentals will need to “cash” next year, and that if sales and earnings do not recover at the strong pace

they are expected (+8.2%/+22.6%), there could be room for a correction.

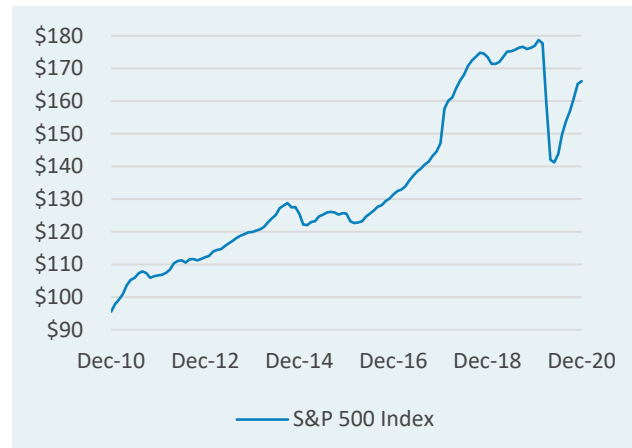
On a trailing-earnings basis, international developed equities appear most expensive as the second series of lockdowns which swept over the continent toward the end of the year have severely impacted earnings. The question in Europe, however, is largely the same one we are grappling with in the U.S.: are earnings temporarily depressed and ripe for a quick rebound next year, or are the earnings streams impaired and equity prices less justified?

## FORWARD P/E RATIOS



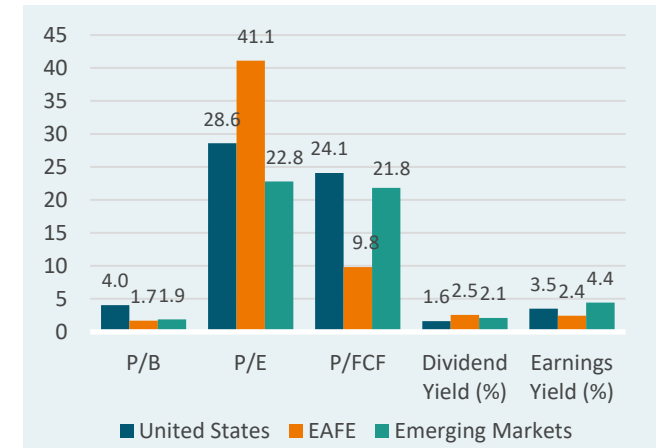
Source: MSCI, 12m forward P/E, as of 12/31/20

## BLENDED 12-MONTH EARNINGS EXPECTATIONS



Source: Bloomberg, as of 12/31/20

## VALUATION METRICS (3-MONTH AVERAGE)



Source: Bloomberg, MSCI as of 12/31/20 - trailing P/E

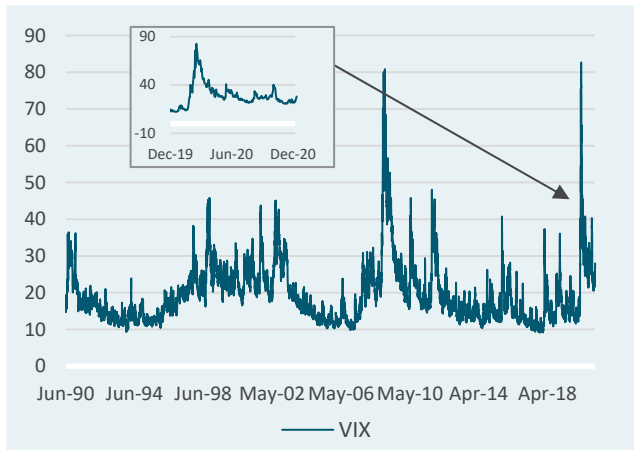
# Equity volatility

The Cboe VIX Index remained rangebound in the fourth quarter, ending the year at 22.8. Priced volatility is moderately elevated relative to the longer-term average of 19.

The U.S. equity market exhibited surprisingly high volatility in 2020 relative to other global markets. The domestic market has typically been a lowest risk market. In recent years, this relationship has flipped, with U.S. stocks showing higher volatility than developed market stocks, and nearly on par with emerging market equities.

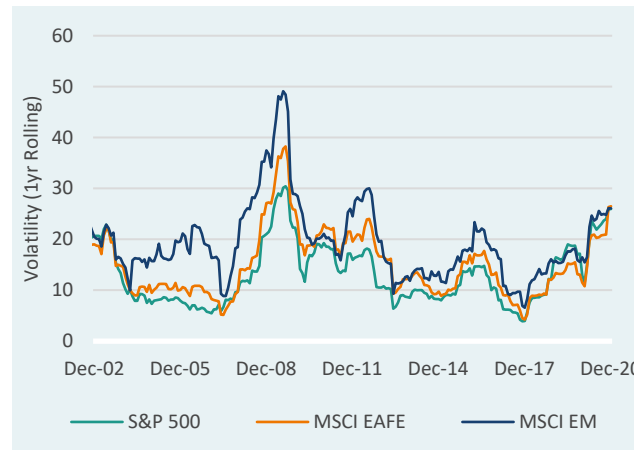
Since implied and realized volatility spiked in the first quarter, options-implied volatility has receded significantly, back toward more normal levels. As equity markets climbed to new highs in the final few months of the year, the U.S. implied volatility curve began to steepen. During the fourth quarter, the implied volatility of deeply out-of-the-money puts was little changed, while the implied volatility of deeply out-of-the-money call options declined to more-average levels. The steepening of the implied volatility curve likely demonstrates the market's marginal preference for downside protection over upside participation at current price levels.

## U.S. IMPLIED VOLATILITY (VIX)



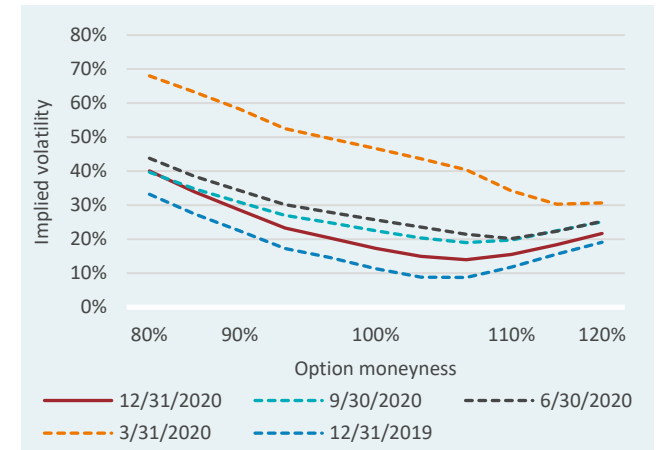
Source: Cboe, as of 12/31/20

## REALIZED VOLATILITY



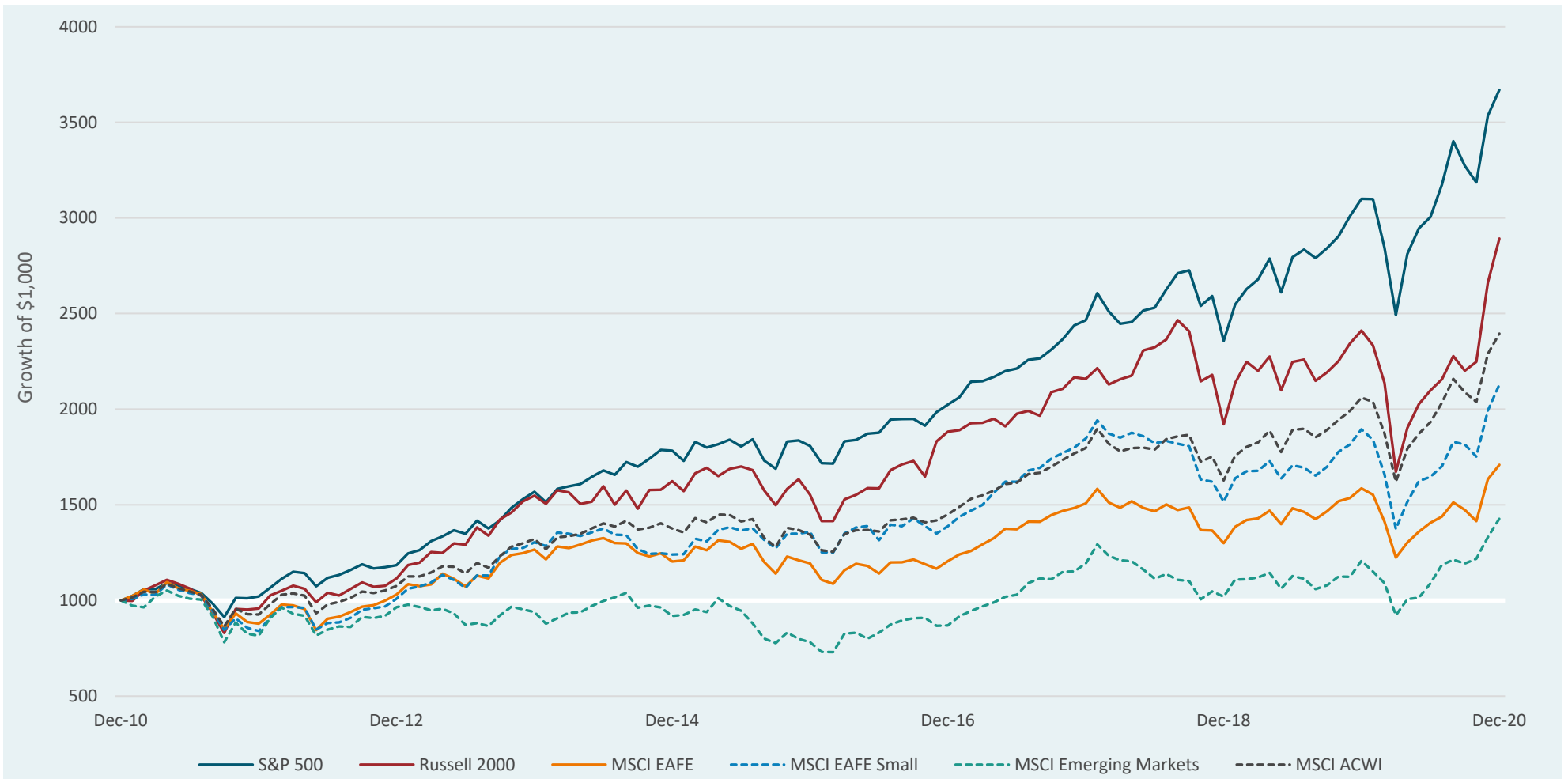
Source: Standard & Poor's, MSCI, as of 12/31/20

## 1-MONTH U.S. IMPLIED VOLATILITY CURVE



Source: Bloomberg, as of 12/31/20

# Long-term equity performance



Source: Morningstar, as of 12/31/20

# Other assets

# Currency

Weakness in the U.S. dollar relative to both emerging market and developed market currencies remained a theme in the fourth quarter, as the Bloomberg Dollar Spot Index fell to a two and a half year low. Analysts attributed some of the weakness of the greenback to lower relative real yields in the United States, as nominal Treasury yields rose less than inflation expectations. Many in the industry have made calls for a continuation of dollar weakness into 2021. If that weakness were to materialize, it would supply significant tailwinds for unhedged U.S. investors in non-U.S. equities. We continue to believe that unhedged currency exposure results in uncompensated risk, which is a suboptimal approach for many investors.

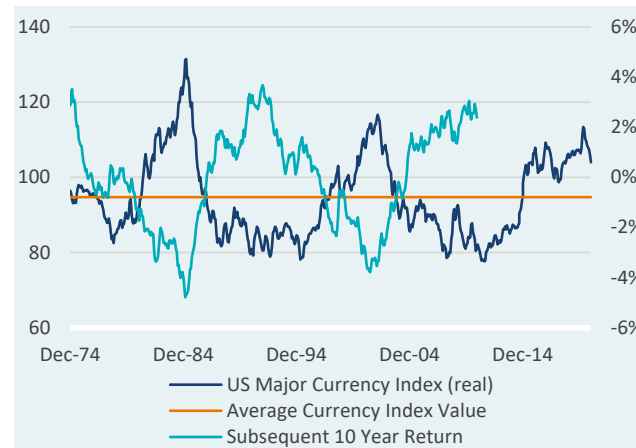
The onshore Chinese renminbi rallied significantly over the fourth quarter. The strength has been primarily credited to the apparently-blistering pace of China's recovery from pandemic-related disruptions, which has fueled capital inflows from offshore investors. Looking ahead, the election of Joe Biden has been viewed largely as constructive for the yuan, as the expectation remains that Biden's stance on China will be less confrontational than his predecessor's, reducing trade tensions. On the other hand, the rising value of the yuan may make China's exports less-affordable for Europeans still recovering from the pandemic. This dynamic has stoked speculation that the People's Bank of China might soon step in to cool the rally.

**BLOOMBERG DOLLAR SPOT INDEX**



Source: Bloomberg, as of 12/31/20

**USD CURRENCY LEVEL & SUBSEQUENT RETURN**



Source: Federal Reserve, as of 12/31/20

**USD/CNY CROSS RATE**

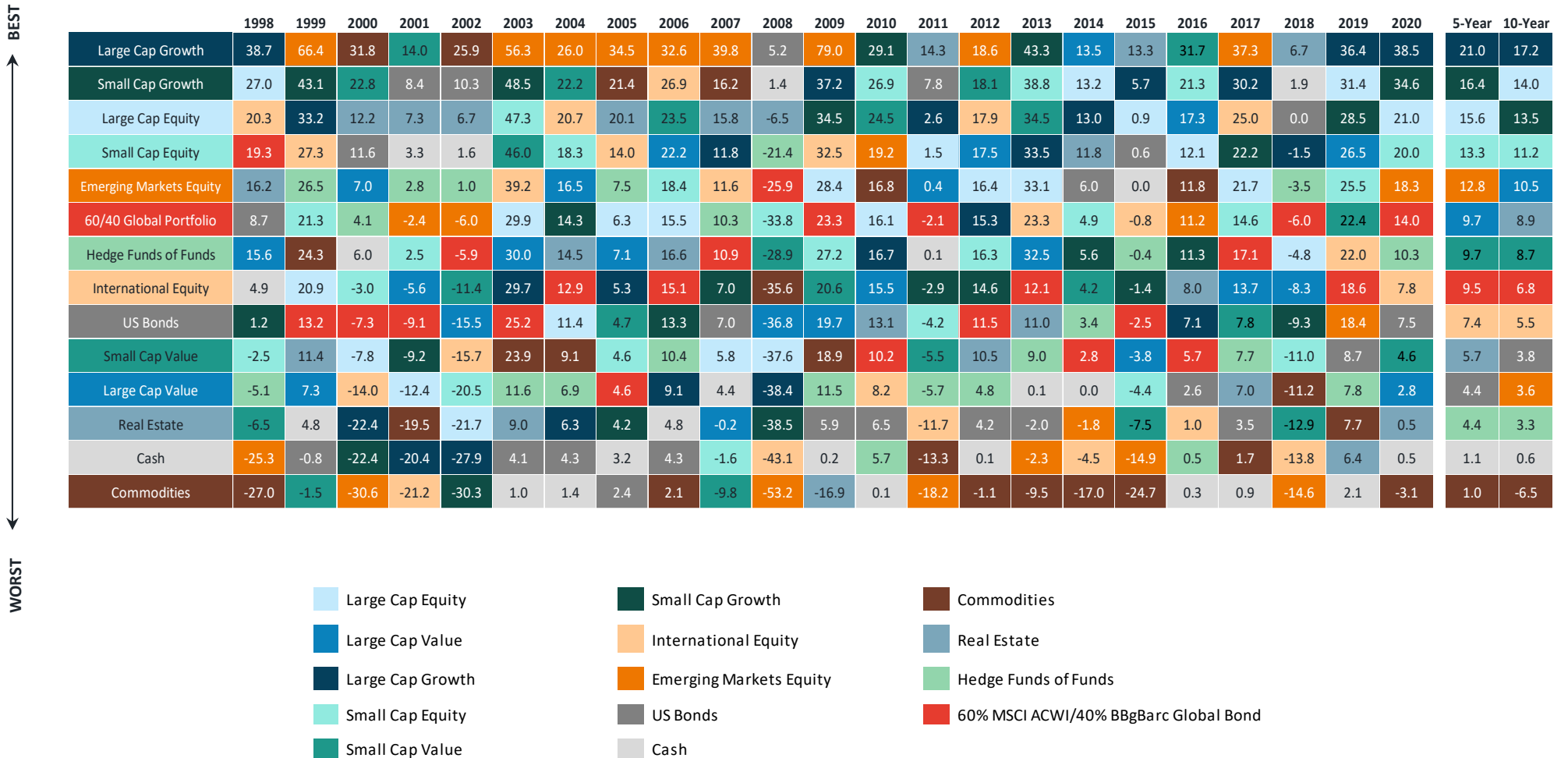


Source: Bloomberg, as of 12/31/20

# Appendix



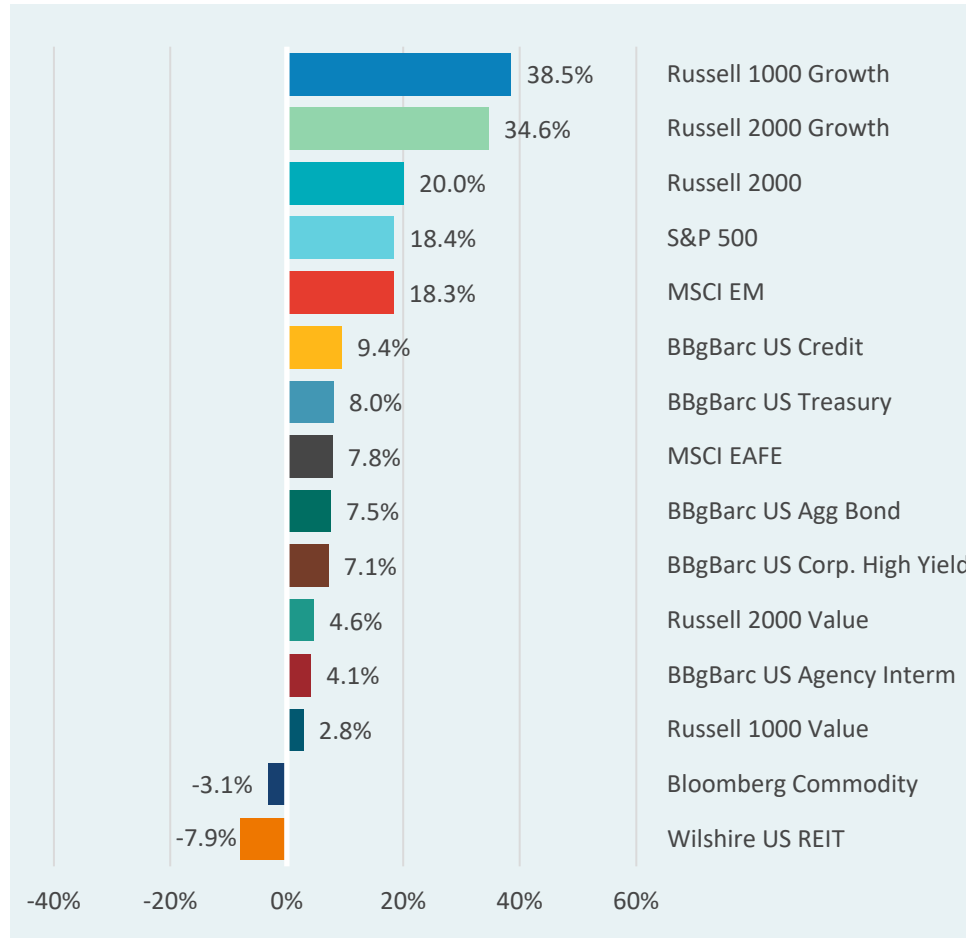
# Periodic table of returns



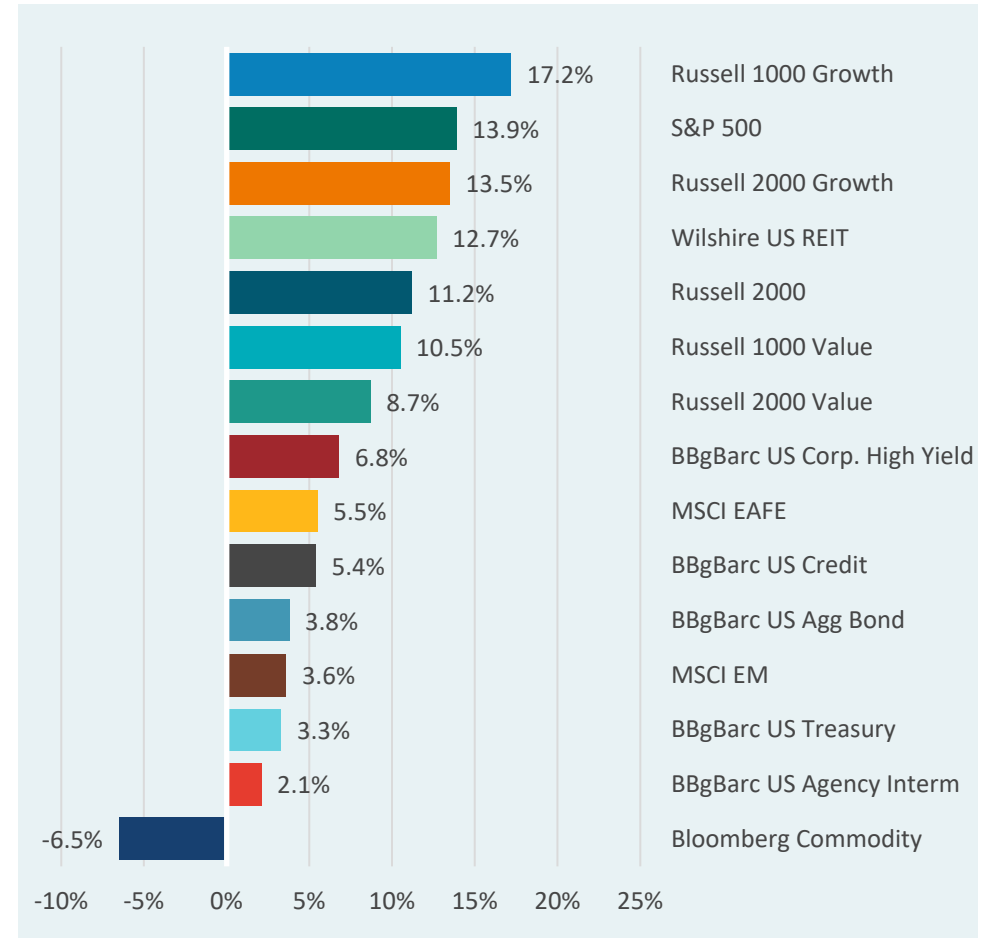
Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BBgBarc Global Bond. NCREIF Property Index performance data as of 9/30/20.

# Major asset class returns

ONE YEAR ENDING DECEMBER



TEN YEARS ENDING DECEMBER



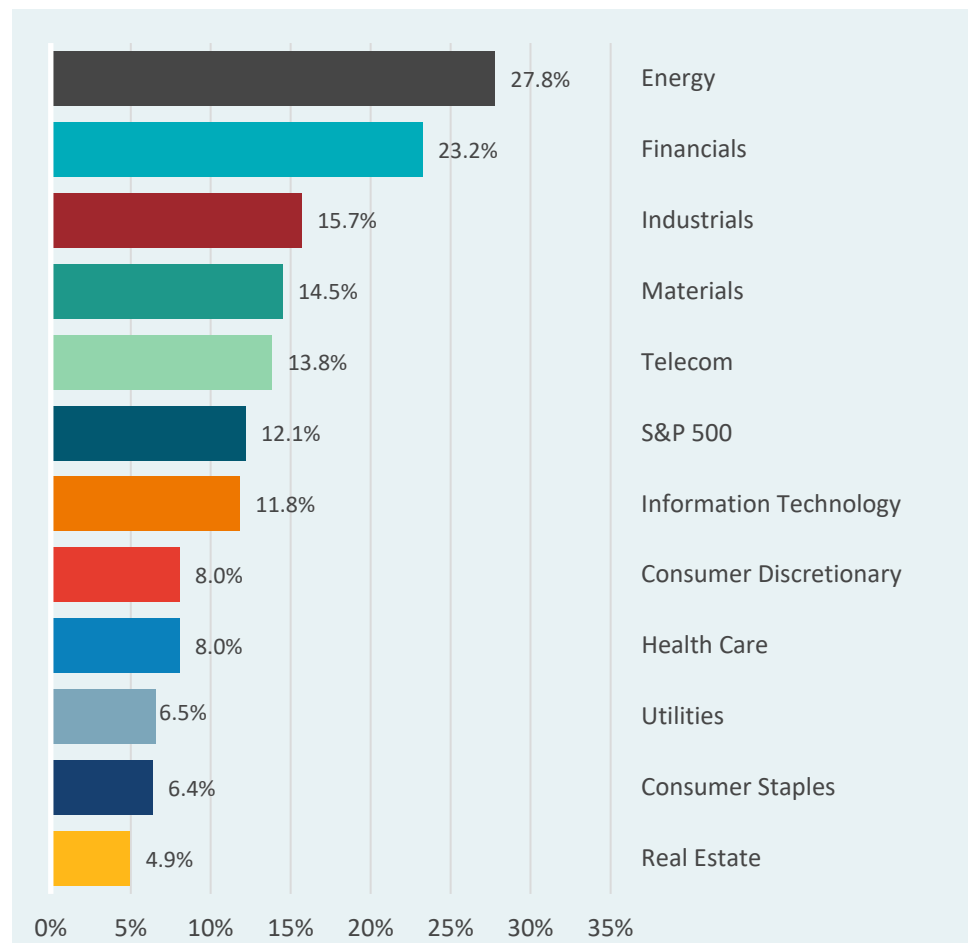
\*Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.

Source: Morningstar, as of 12/31/20

Source: Morningstar, as of 12/31/20

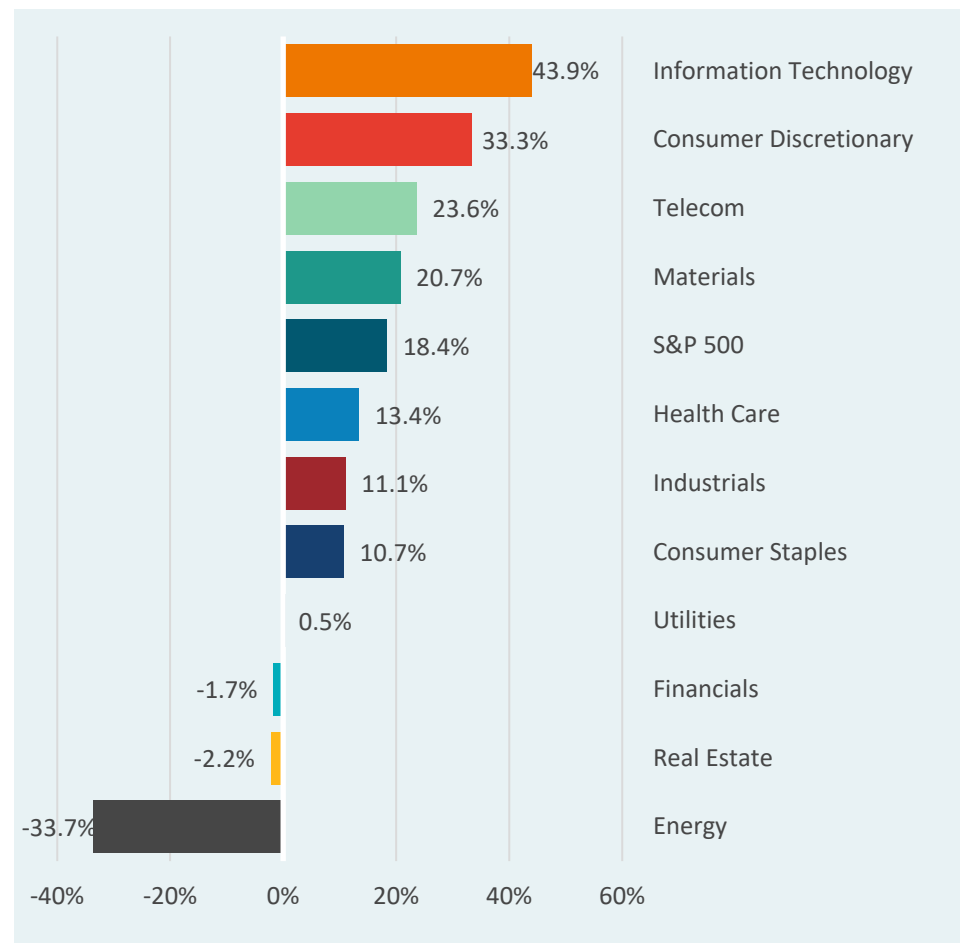
# S&P 500 sector returns

Q4 2020



Source: Morningstar, as of 12/31/20

ONE YEAR ENDING DECEMBER

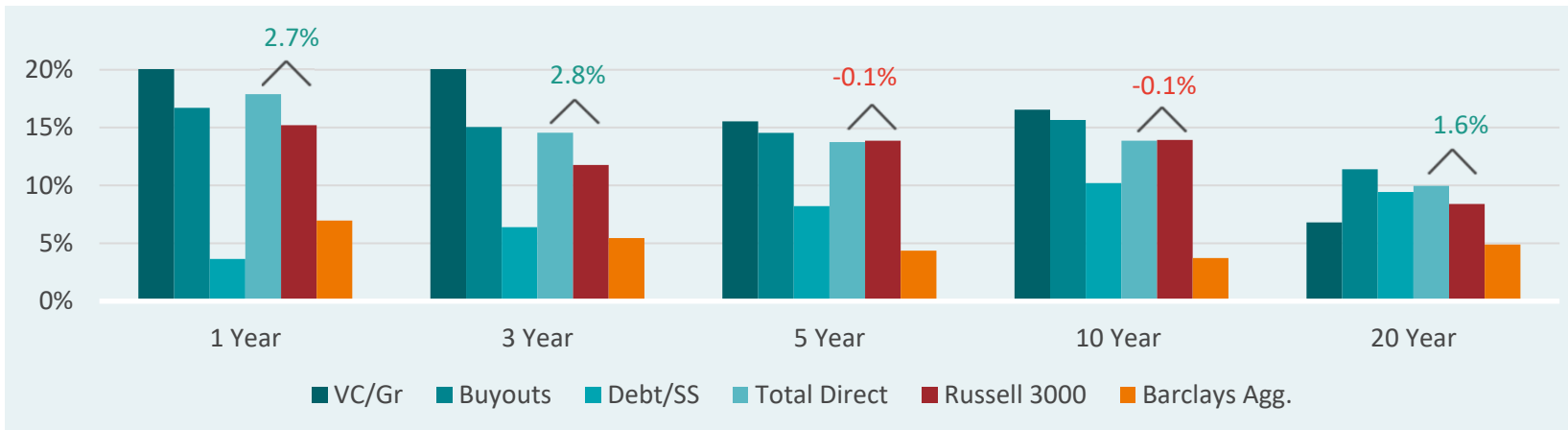


Source: Morningstar, as of 12/31/20

# Private equity vs. public performance

As of 9/30/2020

## DIRECT PRIVATE EQUITY FUND INVESTMENTS



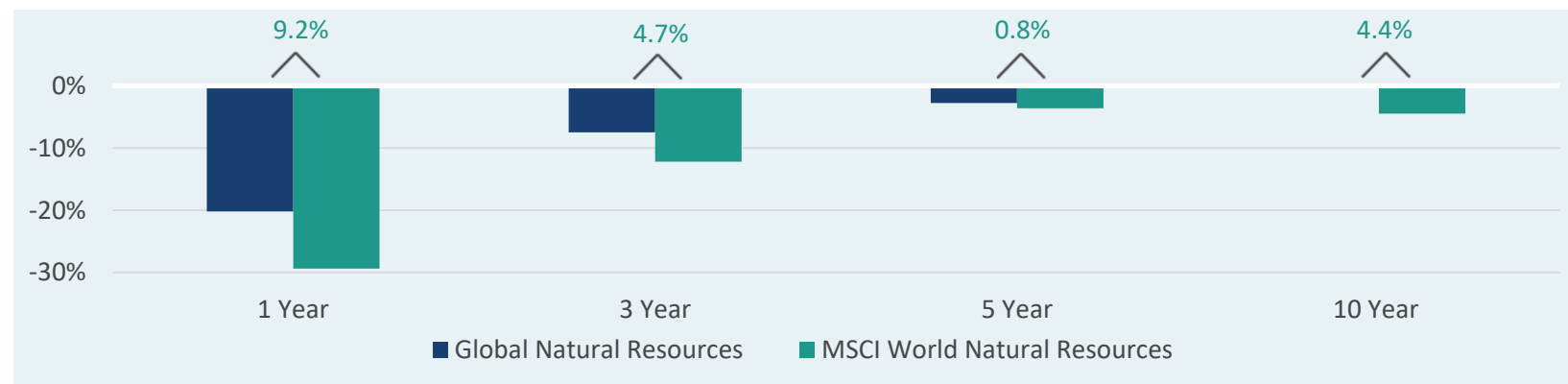
Direct private equity fund investments outperformed comparable public equities across most time periods

Sources: Thomson Reuters Cambridge Universe's PME Module: U.S. Private Equity Funds sub asset classes as of September 30, 2020. Public Market Equivalent returns resulted from "Total Direct's" identical cash flows invested into and distributed from respective traditional asset comparable.

# Private equity vs. liquid real assets performance

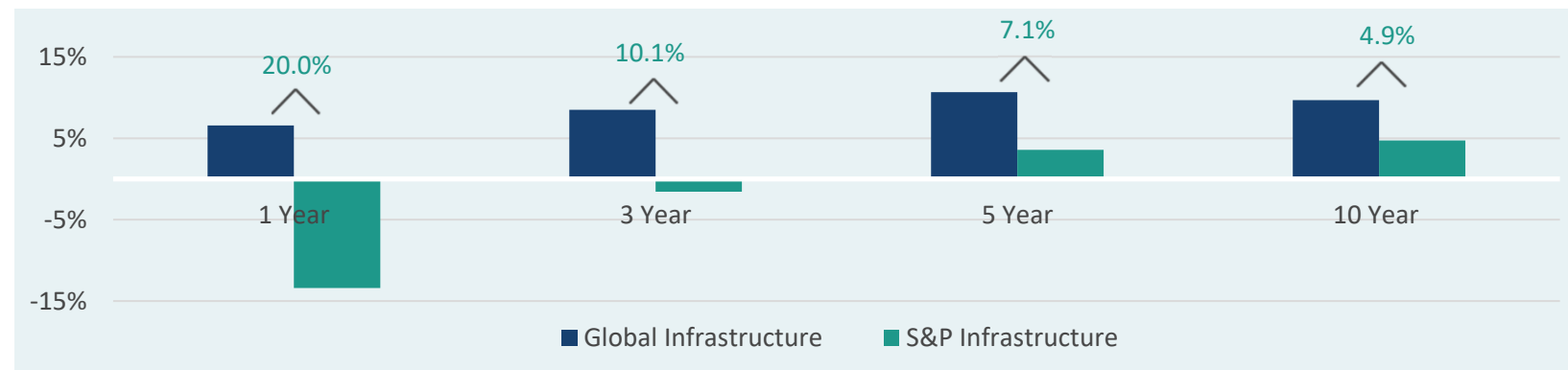
As of 9/30/2020

## GLOBAL NATURAL RESOURCES FUNDS



Natural resource funds outperformed the MSCI World Natural Resources benchmark across all time periods

## GLOBAL INFRASTRUCTURE FUNDS



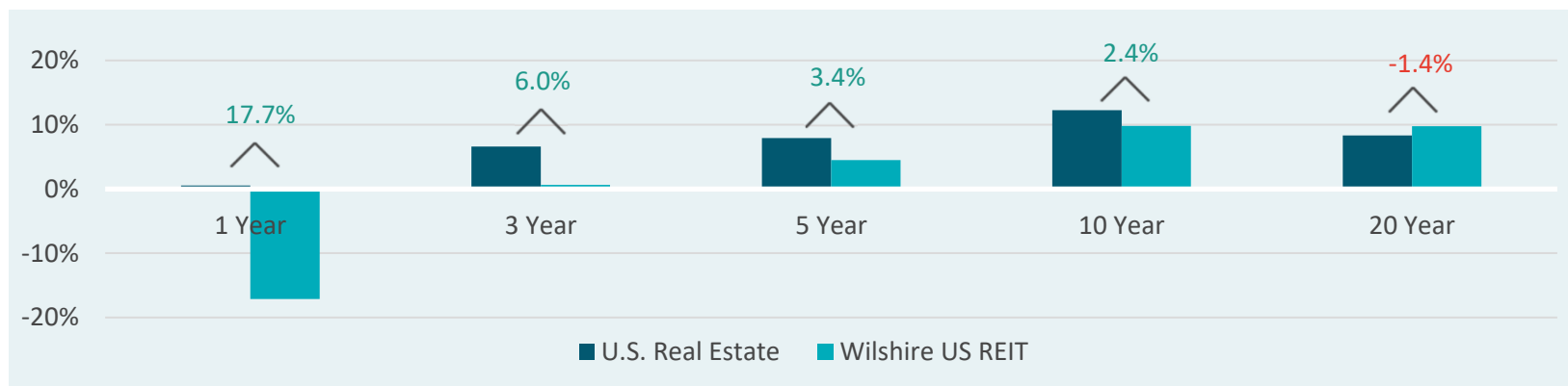
Infrastructure funds outperformed the S&P Infra. Index across all periods

Sources: Thomson Reuters C|A 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 September 30, 2020. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real assets universes.

# Private vs. liquid & core real estate performance

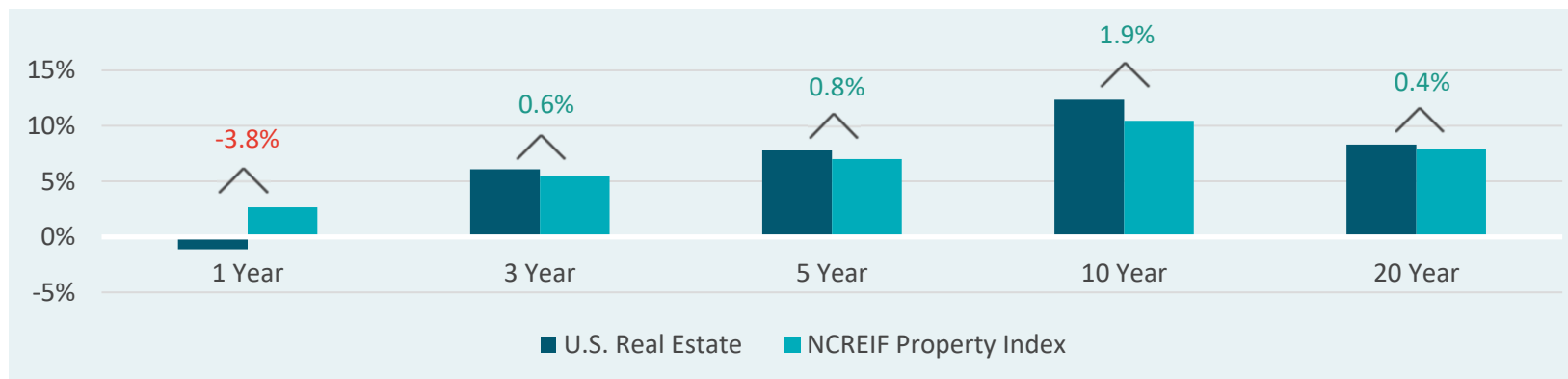
As of 9/30/2020

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



U.S. private real estate funds outperformed the Wilshire U.S. REIT Index across most time periods

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



U.S. private real estate funds outperformed the NCREIF Property Index over all time periods, aside from the past year

Sources: Thomson Reuters CJA PME: U.S. Real Estate universes as of September 30, 2020. 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
<b>Core Index</b>							
S&P 500	3.8	12.1	18.4	18.4	14.2	15.2	13.9
S&P 500 Equal Weighted	4.3	18.5	12.8	12.8	10.4	13.0	12.7
DJ Industrial Average	3.4	10.7	9.7	9.7	9.9	14.7	13.0
Russell Top 200	4.1	11.6	22.4	22.4	16.0	16.4	14.6
Russell 1000	4.2	13.7	21.0	21.0	14.8	15.6	14.0
Russell 2000	8.7	31.4	20.0	20.0	10.2	13.3	11.2
Russell 3000	4.5	14.7	20.9	20.9	14.5	15.4	13.8
Russell Mid Cap	4.7	19.9	17.1	17.1	11.6	13.4	12.4
<b>Style Index</b>							
Russell 1000 Growth	4.6	11.4	38.5	38.5	23.0	21.0	17.2
Russell 1000 Value	3.8	16.3	2.8	2.8	6.1	9.7	10.5
Russell 2000 Growth	9.3	29.6	34.6	34.6	16.2	16.4	13.5
Russell 2000 Value	7.9	33.4	4.6	4.6	3.7	9.7	8.7

## INTERNATIONAL EQUITY

<b>Broad Index</b>							
MSCI ACWI	4.6	14.7	16.3	16.3	10.1	12.3	9.1
MSCI ACWI ex US	5.4	17.0	10.7	10.7	4.9	8.9	4.9
MSCI EAFE	4.6	16.0	7.8	7.8	4.3	7.4	5.5
MSCI EM	7.4	19.7	18.3	18.3	6.2	12.8	3.6
MSCI EAFE Small Cap	6.8	17.3	12.3	12.3	4.9	9.4	7.8
<b>Style Index</b>							
MSCI EAFE Growth	4.9	13.1	18.3	18.3	9.7	10.5	7.5
MSCI EAFE Value	4.4	19.2	(2.6)	(2.6)	(1.2)	4.2	3.4
<b>Regional Index</b>							
MSCI UK	5.5	16.9	(10.5)	(10.5)	(2.4)	2.6	3.0
MSCI Japan	4.1	15.3	14.5	14.5	6.1	8.7	6.5
MSCI Euro	4.0	17.2	6.6	6.6	3.1	7.0	5.0
MSCI EM Asia	7.1	18.9	28.4	28.4	9.0	14.4	6.6
MSCI EM Latin American	11.9	34.8	(13.8)	(13.8)	(1.8)	8.9	(3.4)

## FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Broad Index</b>							
BBgBarc US TIPS	1.1	1.6	11.0	11.0	5.9	5.1	3.8
BBgBarc US Treasury Bills	0.0	0.0	0.7	0.7	1.6	1.2	0.7
BBgBarc US Agg Bond	0.1	0.7	7.5	7.5	5.3	4.4	3.8
<b>Duration</b>							
BBgBarc US Treasury 1-3 Yr	0.1	0.0	3.2	3.2	2.8	1.9	1.3
BBgBarc US Treasury Long	(1.2)	(3.0)	17.7	17.7	9.9	7.8	7.8
BBgBarc US Treasury	(0.2)	(0.8)	8.0	8.0	5.2	3.8	3.3
<b>Issuer</b>							
BBgBarc US MBS	0.2	0.2	3.9	3.9	3.7	3.1	3.0
BBgBarc US Corp. High Yield	1.9	6.5	7.1	7.1	6.2	8.6	6.8
BBgBarc US Agency Interm	0.1	0.1	4.1	4.1	3.4	2.5	2.1
BBgBarc US Credit	0.5	2.8	9.4	9.4	6.8	6.4	5.4

## OTHER

<b>Index</b>							
Bloomberg Commodity	5.0	10.2	(3.1)	(3.1)	(2.5)	1.0	(6.5)
Wilshire US REIT	2.8	10.6	(7.9)	(7.9)	3.3	4.3	8.3
CS Leveraged Loans	1.3	3.6	2.8	2.8	4.0	5.2	4.5
Alerian MLP	2.5	32.4	(31.6)	(31.6)	(13.7)	(7.0)	(2.1)
<b>Regional Index</b>							
JPM EMBI Global Div	1.9	5.8	5.3	5.3	5.0	7.1	6.2
JPM GBI-EM Global Div	3.5	9.6	2.7	2.7	3.0	6.7	1.5
<b>Hedge Funds</b>							
HFRI Composite	4.5	10.7	11.6	11.6	5.5	6.1	4.2
HFRI FOF Composite	3.1	7.5	10.3	10.3	4.7	4.4	3.3
<b>Currency (Spot)</b>							
Euro	2.3	4.3	9.0	9.0	0.6	2.4	(0.9)
Pound Sterling	2.4	5.7	3.2	3.2	0.3	(1.5)	(1.3)
Yen	1.0	2.2	5.3	5.3	2.9	3.1	(2.4)

Source: Morningstar, HFRI, as of 12/31/20

# 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](http://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](http://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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# Western States Office & Professional Employees Pension Fund

Investment Performance Review  
Period Ending: December 31, 2020



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# 4<sup>th</sup> quarter summary

## THE ECONOMIC CLIMATE

- Real GDP grew at a -2.8% rate year-over-year in the third quarter (+33.4% quarterly annualized rate) as the U.S. economy recovered much of the economic activity lost in the second quarter.
- Joe Biden was elected President of the United States. The market seemed to interpret a Biden win as a mild positive for risk assets, on the expectation of larger economic stimulus. Democrats also took both seats in the Georgia run-off election, completing the party's "Blue Wave".
- Several new, more-infectious strains of COVID-19 emerged and spread around the world, though experts remain confident in the efficacy of the currently-approved arsenal of vaccines.

## PORTFOLIO IMPACTS

- Emerging market equities (+19.7%) outperformed U.S. (+12.1%) and international developed equities (+16.0%) once again in Q4. Latin American equities showed significant outperformance (+34.8%), after years of lagging behind other emerging markets.
- The U.S. 10-year TIPS breakeven inflation rate headed notably higher over the quarter, from 1.6% in September to 2.0% in December. Although U.S. inflation is lower than pre-pandemic levels, market pricing for inflation is the highest since 2018.

## THE INVESTMENT CLIMATE

- Congress passed an omnibus spending bill, including \$900 billion earmarked for COVID-19 relief. Key features of the package included a re-up of the Paycheck Protection Program, \$600 stimulus checks for most individuals, and \$300 per week in additional unemployment benefits over a 10-week period.
- According to FactSet, S&P 500 Q4 earnings are expected to be down -8.8%. This estimate improved from the -12.7% drop expected on September 30th. For full year 2020, analysts are expecting a -13.3% earnings decline.

## ASSET ALLOCATION ISSUES

- U.S. equities delivered +12.1% during the quarter, ending the year at an all-time-high. The S&P 500 was one of the strongest equity markets in 2020, up +18.4% despite an earnings recession and considerable uncertainty.
- Weakness in the U.S. dollar remained a theme in Q4, and the Bloomberg Dollar Spot Index fell to a two and a half year low. Analysts attributed some of the weakness in the US dollar to lower relative real yields in the U.S.
- Within the U.S. market, a sizable rotation occurred in Q4 as certain sectors that had been beaten-down during the pandemic performed strongly. Rising energy prices boosted the Energy sector, while higher interest rates improved the outlook for Financials.

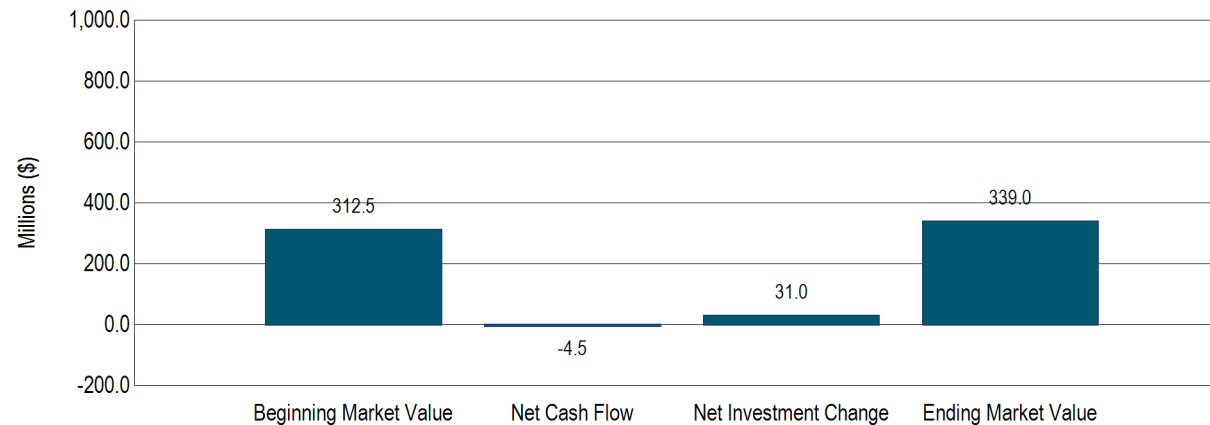
A more neutral risk positioning may be warranted in the current environment

There seems to be a high degree of uncertainty regarding the future market path

Portfolio Reconciliation

	Last Three Months	Year-To-Date
Beginning Market Value	\$312,530,105	\$322,285,320
Net Cash Flow	-\$4,486,980	-\$23,846,247
Net Investment Change	\$30,966,500	\$40,570,552
Ending Market Value	\$339,009,626	\$339,009,626

Change in Market Value  
Last Three Months



Contributions and withdrawals may include intra-account transfers between managers/funds.

Total Fund  
Cash Flow by Manager - Last Three Months

Period Ending: December 31, 2020

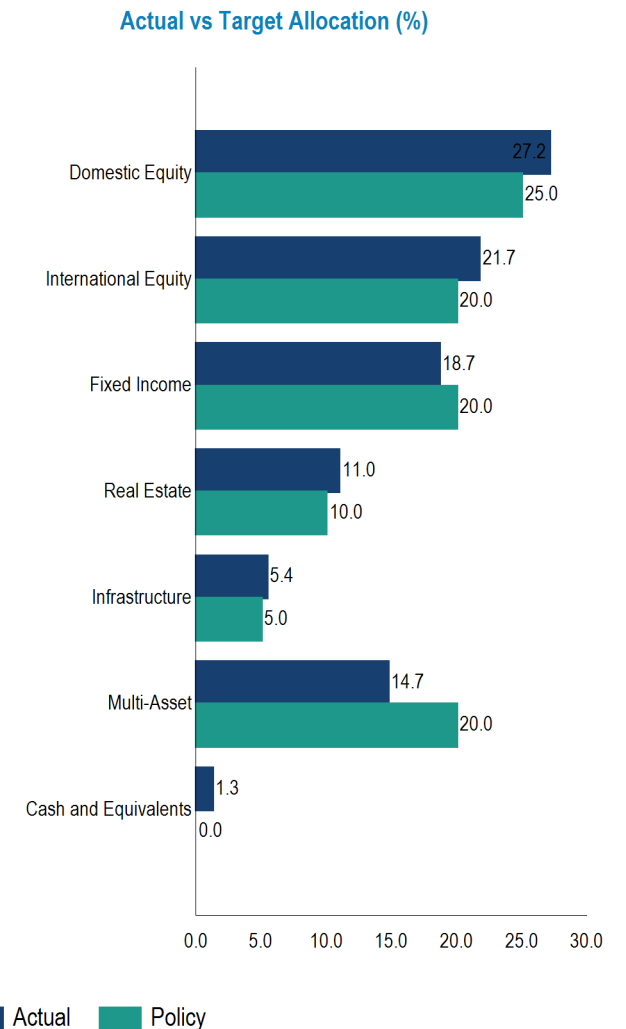
	Beginning Market Value	Contributions	Withdrawals	Net Cash Flow	Net Investment Change	Ending Market Value
BlackRock Equity Index NL	\$32,588,536	\$0	\$0	\$0	\$3,959,464	\$36,548,000
INTECH US Adaptive Volatility	\$36,649,910	\$0	-\$2,200,000	-\$2,200,000	\$2,455,358	\$36,905,268
PanAgora US Small Cap Core Stock Selector	\$14,543,779	\$0	\$0	\$0	\$4,051,790	\$18,595,569
WCM Focused International Growth Fund, L.P.	\$40,580,179	\$0	\$0	\$0	\$7,023,694	\$47,603,873
Causeway International Value Ins	\$20,508,952	\$0	\$0	\$0	\$5,603,742	\$26,112,694
Loomis Sayles Core Plus	\$61,898,485	\$0	\$0	\$0	\$1,373,956	\$63,272,441
ASB Allegiance Real Estate	\$21,706,618	\$0	-\$55,714	-\$55,714	\$245,243	\$21,896,147
JPMorgan Special Situation Property	\$15,063,758	\$0	-\$60,742	-\$60,742	\$354,407	\$15,357,423
IFM Global Infrastructure (US) LP	\$10,094,266	\$0	\$0	\$0	\$426,631	\$10,520,897
JPMorgan IIF ERISA LP	\$7,670,693	\$0	-\$133,390	-\$133,390	\$395,784	\$7,933,087
Invesco Balanced-Risk Allocation	\$47,312,130	\$0	-\$2,400,000	-\$2,400,000	\$5,076,430	\$49,988,560
US Bank Checking Account	\$1,321,294	\$9,586,733	-\$9,225,556	\$361,177	\$0	\$1,682,472
US Bank Clearing Account	\$2,591,506	\$7,650,595	-\$7,648,906	\$1,689	\$0	\$2,593,195
<b>Total</b>	<b>\$312,530,105</b>	<b>\$17,237,328</b>	<b>-\$21,724,307</b>	<b>-\$4,486,980</b>	<b>\$30,966,500</b>	<b>\$339,009,626</b>

Loomis Sayles Full Discretion liquidated 3/21/2017. Loomis Sayles Core Plus funded 3/21/2017. Parametric liquidated 4/21/2017. Mellon Dynamic liquidated 5/5/2017. Grosvenor Institutional liquidated 4/30/2018. Brandes International Small Cap Equity liquidated 8/31/2019. Invesco Real Estate II liquidated 9/1/2019.

# Total Fund Executive Summary (Net of Fees)

Period Ending: December 31, 2020

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs
<b>Total Fund</b>	<b>339,009,626</b>	<b>100.0</b>	<b>9.9</b>	<b>13.3</b>	<b>8.7</b>	<b>9.2</b>	<b>7.9</b>
<i>Total Fund Policy Index</i>			8.5	12.6	8.4	8.9	7.5
<i>Target Asset Allocation Policy Index</i>			9.1	13.9	9.5	9.9	8.5
<i>InvMetrics Tft-Hrtly DB \$250mm-\$1B Net Rank</i>			42	15	22	48	58
<b>Total Domestic Equity</b>	<b>92,048,838</b>	<b>27.2</b>	<b>12.6</b>	<b>15.9</b>	<b>11.5</b>	<b>13.1</b>	<b>12.8</b>
<i>Dow Jones U.S. Total Stock Market</i>			14.8	20.8	14.4	15.4	13.7
<i>InvMetrics Tft-Hrtly DB US Eq Net Rank</i>			93	68	71	76	39
<b>Total International Equity</b>	<b>73,716,567</b>	<b>21.7</b>	<b>20.7</b>	<b>21.7</b>	<b>10.6</b>	<b>11.6</b>	<b>5.9</b>
<i>Total Public Int'l Equity Benchmark (MSCI ACWI ex US IMI)</i>			17.2	11.1	4.8	9.0	5.3
<i>InvMetrics Tft-Hrtly DB ex-US Eq Net Rank</i>			13	13	7	12	33
<b>Total Fixed Income</b>	<b>63,272,441</b>	<b>18.7</b>	<b>2.1</b>	<b>11.3</b>	<b>6.6</b>	<b>6.6</b>	<b>5.3</b>
<i>Total Fixed Income Benchmark (BBgBarc Aggregate)</i>			0.7	7.5	5.3	4.4	3.8
<i>InvMetrics Tft-Hrtly DB US Fix Inc Net Rank</i>			35	2	3	2	7
<b>Total Real Estate</b>	<b>37,253,570</b>	<b>11.0</b>	<b>1.5</b>	<b>2.3</b>	<b>4.9</b>	<b>5.0</b>	<b>9.6</b>
<i>NCREIF ODCE Net</i>			1.1	0.3	4.0	5.3	8.9
<b>Total Infrastructure</b>	<b>18,453,983</b>	<b>5.4</b>	<b>4.6</b>	<b>5.4</b>	<b>9.0</b>	<b>9.6</b>	<b>7.6</b>
<i>CPI + 5%</i>			1.3	6.4	6.9	7.0	6.8
<b>Total Multi-Asset</b>	<b>49,988,560</b>	<b>14.7</b>	<b>10.7</b>	<b>10.8</b>	<b>6.5</b>	<b>7.5</b>	<b>6.7</b>
<i>60% MSCI ACWI Net/40% FTSE WGBI</i>			9.9	14.5	8.4	9.5	6.6
<i>eV Global Balanced Net Rank</i>			69	46	66	86	72
<b>Total Cash</b>	<b>4,275,666</b>	<b>1.3</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.3</b>	<b>0.8</b>



Policy Index: 45% MSCI World, 25% BBgBarc Aggregate, 10% NCREIF-ODCE net, 20%(60% MSCI ACWI Net/40% CITI WGBI). Target Asset Allocation Policy Index: 25% Dow Jones US Total Stock, 20% MSCI ACWI ex US IMI, 20% BBgBarc Aggregate, 10% NCREIF-ODCE, 5% CPI + 5%, and 20% (60% MSCI ACWI Net/40% CITI WGBI). Data prior to 3Q 2015 is from previous consultant.

# Total Fund

## Risk Analysis - 3 & 5 Year (Net of Fees)

Period Ending: December 31, 2020

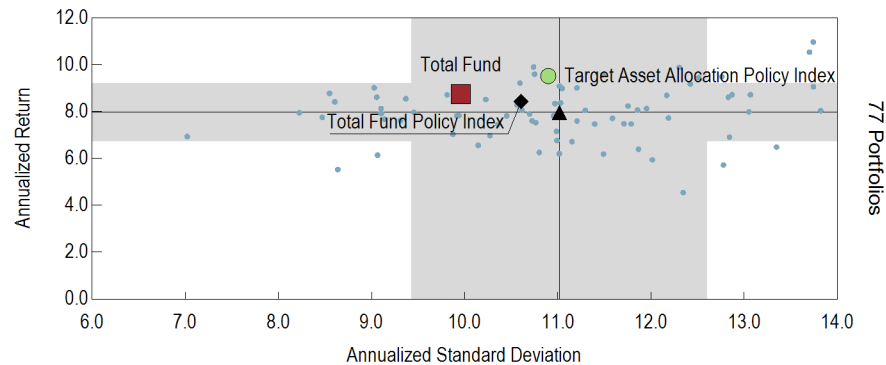
### 3 Year

	Anlzd Standard Deviation	Ann Excess BM Return	Anlzd Alpha	Beta	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio	Information Ratio	Tracking Error	Sharpe Ratio
Total Fund	9.96%	0.33%	0.96%	0.93	0.97	91.16%	86.51%	0.18	1.88%	0.73
Total Fund Policy Index	10.60%	0.00%	0.00%	1.00	1.00	100.00%	100.00%	--	0.00%	0.65
Target Asset Allocation Policy Index	10.90%	1.10%	0.88%	1.03	1.00	107.76%	100.57%	1.40	0.78%	0.74

### 5 Year

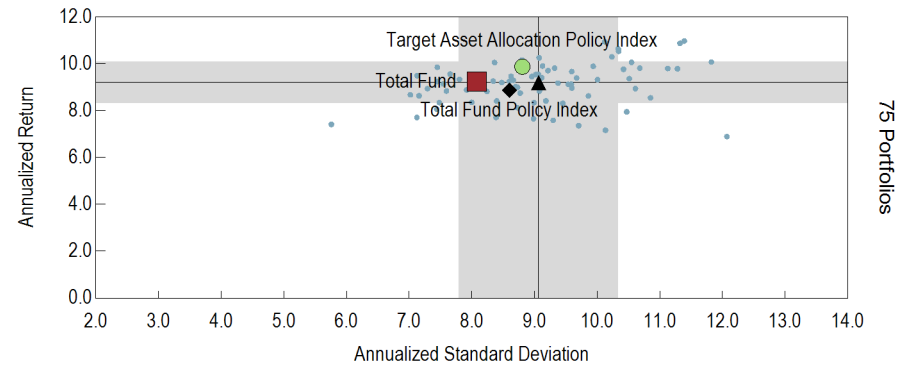
	Anlzd Standard Deviation	Ann Excess BM Return	Anlzd Alpha	Beta	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio	Information Ratio	Tracking Error	Sharpe Ratio
Total Fund	8.08%	0.35%	1.03%	0.92	0.97	93.34%	87.00%	0.23	1.55%	1.00
Total Fund Policy Index	8.60%	0.00%	0.00%	1.00	1.00	100.00%	100.00%	--	0.00%	0.90
Target Asset Allocation Policy Index	8.81%	1.00%	0.82%	1.02	0.99	107.40%	98.40%	1.30	0.77%	0.99

### 3 Year



- Total Fund
- ◆ Total Fund Policy Index
- Target Asset Allocation Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Tft-Hrtly DB \$250mm-\$1B Net

### 5 Year

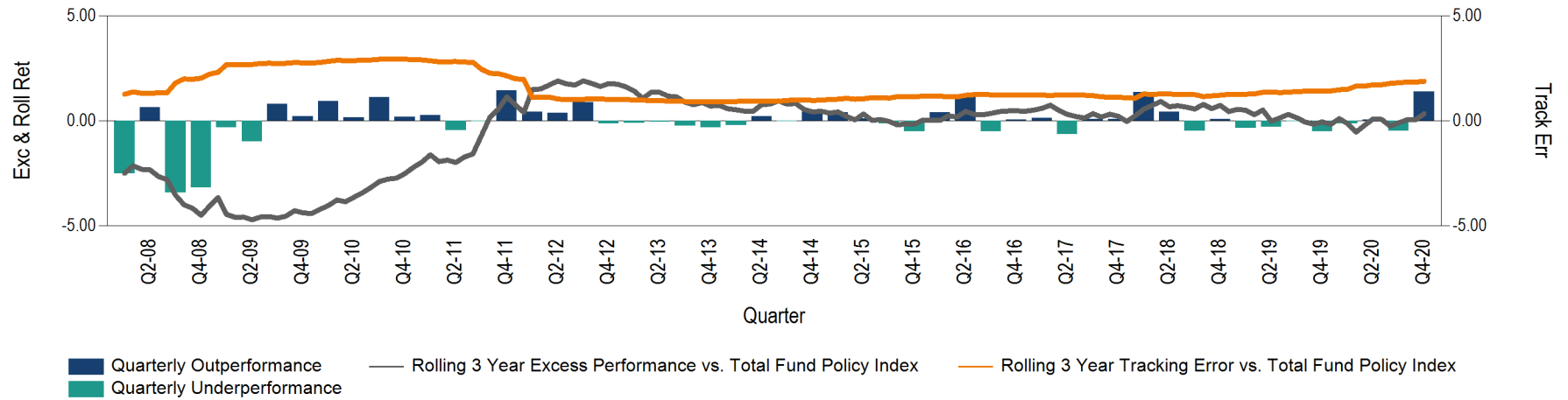


- Total Fund
- ◆ Total Fund Policy Index
- Target Asset Allocation Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Tft-Hrtly DB \$250mm-\$1B Net

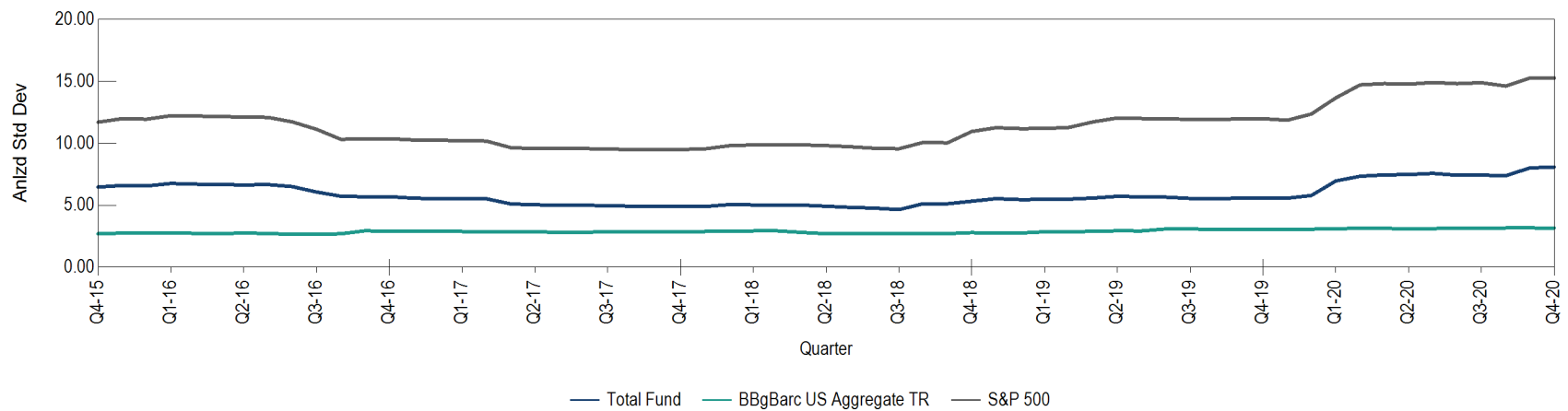
Total Fund  
Rolling Performance Relative to Policy (Net of Fees)

Period Ending: December 31, 2020

Rolling Annualized Excess Performance and Tracking Error



Rolling 5 Year Annualized Standard Deviation



# Total Fund

## Executive Summary (Net of Fees)

Period Ending: December 31, 2020

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2020	2019	2018	2017	2016
<b>Total Fund</b>	<b>339,009,626</b>	<b>100.0</b>	<b>9.9</b>	<b>13.3</b>	<b>8.7</b>	<b>9.2</b>	<b>7.9</b>	<b>13.3</b>	<b>17.2</b>	<b>-3.2</b>	<b>13.0</b>	<b>6.9</b>
<i>Total Fund Policy Index</i>			8.5	12.6	8.4	8.9	7.5	12.6	18.6	-4.5	13.5	5.8
<i>Target Asset Allocation Policy Index</i>			9.1	13.9	9.5	9.9	8.5	13.9	19.1	-3.2	13.7	7.2
<i>InvMetrics Tft-Hrtly DB \$250mm-\$1B Net Rank</i>			42	15	22	48	58	15	52	45	64	80
<b>Domestic Equity</b>	<b>92,048,838</b>	<b>27.2</b>										
BlackRock Equity Index NL	36,548,000	10.8	12.1	18.4	14.2	15.2	13.9	18.4	31.5	-4.4	21.8	11.9
S&P 500			12.1	18.4	14.2	15.2	13.9	18.4	31.5	-4.4	21.8	12.0
<i>eV US Large Cap Core Equity Net Rank</i>			41	29	20	13	14	29	28	32	46	21
INTECH US Adaptive Volatility	36,905,268	10.9	7.0	14.0	--	--	--	14.0	23.4	--	--	--
Russell 1000			13.7	21.0	--	--	--	21.0	31.4	--	--	--
<i>eV US Large Cap Core Equity Net Rank</i>			95	53	--	--	--	53	91	--	--	--
PanAgora US Small Cap Core Stock Selector	18,595,569	5.5	27.6	14.7	9.5	11.8	--	14.7	26.1	-9.2	10.8	20.3
Russell 2000			31.4	20.0	10.2	13.3	--	20.0	25.5	-11.0	14.6	21.3
<i>eV US Small Cap Core Equity Net Rank</i>			47	51	40	53	--	51	37	36	83	41
<b>International Equity</b>	<b>73,716,567</b>	<b>21.7</b>										
WCM Focused International Growth Fund, L.P.	47,603,873	14.0	17.3	33.1	18.7	--	--	33.1	35.7	-7.4	31.1	--
MSCI ACWI ex USA			17.0	10.7	4.9	--	--	10.7	21.5	-14.2	27.2	--
<i>eV ACWI ex-US All Cap Growth Eq Net Rank</i>			32	35	14	--	--	35	12	1	71	--
Causeway International Value Ins	26,112,694	7.7	27.3	5.4	1.0	--	--	5.4	20.1	-18.6	27.2	--
MSCI EAFE			16.0	7.8	4.3	--	--	7.8	22.0	-13.8	25.0	--
<i>Foreign Large Value MStar MF Rank</i>			2	22	36	--	--	22	22	91	14	--
<b>Fixed Income</b>	<b>63,272,441</b>	<b>18.7</b>										
Loomis Sayles Core Plus	63,272,441	18.7	2.1	11.3	6.6	--	--	11.3	9.4	-0.4	--	--
BBgBarc US Aggregate TR			0.7	7.5	5.3	--	--	7.5	8.7	0.0	--	--
<i>eV US Core Plus Fixed Inc Net Rank</i>			48	9	11	--	--	9	63	40	--	--
<b>Real Estate</b>	<b>37,253,570</b>	<b>11.0</b>										
ASB Allegiance Real Estate	21,896,147	6.5	1.1	2.4	4.5	4.4	--	2.4	4.2	7.1	3.9	4.5
NCREIF ODCE Net			1.1	0.3	4.0	5.3	--	0.3	4.4	7.4	6.7	7.8
JPMorgan Special Situation Property	15,357,423	4.5	2.0	2.0	5.5	6.6	--	2.0	5.0	9.6	7.9	8.7
NCREIF-ODCE			1.3	1.2	4.9	6.2	--	1.2	5.3	8.3	7.6	8.8

Policy Index: 45% MSCI World, 25% BBgBarc Aggregate, 10% NCREIF-ODCE net, 20%(60% MSCI ACWI Net/40% CITI WGBI). Target Asset Allocation Policy Index: 25% Dow Jones US Total Stock, 20% MSCI ACWI ex US IMI, 20% BBgBarc Aggregate, 10% NCREIF-ODCE, 5% CPI + 5%, and 20% (60% MSCI ACWI Net/40% CITI WGBI). Loomis Sayles Core Plus replaced Loomis Sayles Full Discretion 3/21/2017. Parametric liquidated 4/21/2017. Mellon Dynamic liquidated 5/5/2017. Grosvenor Institutional liquidated 4/30/2018. Brandes International Small Cap Equity liquidated 8/31/2019. Invesco Real Estate II liquidated 9/1/2019. Data prior to 3Q 2015 is from previous consultant.



Total Fund  
Executive Summary (Net of Fees)

Period Ending: December 31, 2020

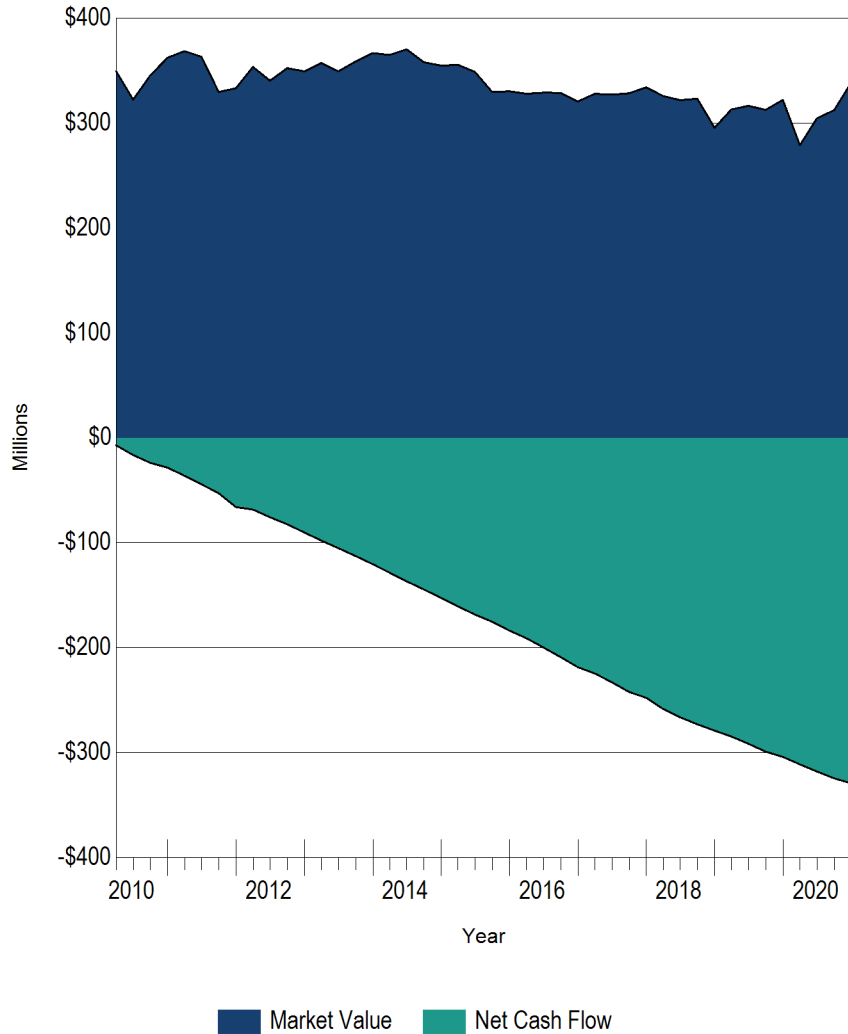
	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2020	2019	2018	2017	2016
<b>Infrastructure</b>	<b>18,453,983</b>	<b>5.4</b>										
IFM Global Infrastructure (US) LP	10,520,897	3.1	4.2	3.1	11.0	12.0	9.1	3.1	14.6	15.8	21.1	6.1
CPI + 5%			1.3	6.4	6.9	7.0	6.8	6.4	7.4	7.0	7.2	7.2
JPMorgan IIF ERISA LP	7,933,087	2.3	5.2	8.4	6.8	7.1	6.0	8.4	8.0	4.2	14.2	1.2
CPI + 5%			1.3	6.4	6.9	7.0	6.8	6.4	7.4	7.0	7.2	7.2
<b>Multi-Asset</b>	<b>49,988,560</b>	<b>14.7</b>										
Invesco Balanced-Risk Allocation	49,988,560	14.7	10.7	10.8	6.5	8.4	6.9	10.8	15.7	-5.8	10.5	12.2
60% MSCI ACWI Net/40% FTSE WGBI			9.9	14.5	8.4	9.5	6.6	14.5	18.2	-5.8	17.1	5.5
FTSE 3-Month T-bill +6%			1.5	6.6	7.6	7.2	6.6	6.6	8.4	8.0	6.9	6.3
eV Global Balanced Net Rank			69	46	66	66	69	46	92	22	99	19
<b>Cash and Equivalents</b>	<b>4,275,666</b>	<b>1.3</b>										
US Bank Checking Account	1,682,472	0.5										
US Bank Clearing Account	2,593,195	0.8										

Policy Index: 45% MSCI World, 25% BBgBarc Aggregate, 10% NCREIF-ODCE net, 20%(60% MSCI ACWI Net/40% CITI WGBI). Target Asset Allocation Policy Index: 25% Dow Jones US Total Stock, 20% MSCI ACWI ex US IMI, 20% BBgBarc Aggregate, 10% NCREIF-ODCE, 5% CPI + 5%, and 20% (60% MSCI ACWI Net/40% CITI WGBI). Loomis Sayles Core Plus replaced Loomis Sayles Full Discretion 3/21/2017. Parametric liquidated 4/21/2017. Mellon Dynamic liquidated 5/5/2017. Grosvenor Institutional liquidated 4/30/2018. Brandes International Small Cap Equity liquidated 8/31/2019. Invesco Real Estate II liquidated 9/1/2019. Data prior to 3Q 2015 is from previous consultant.

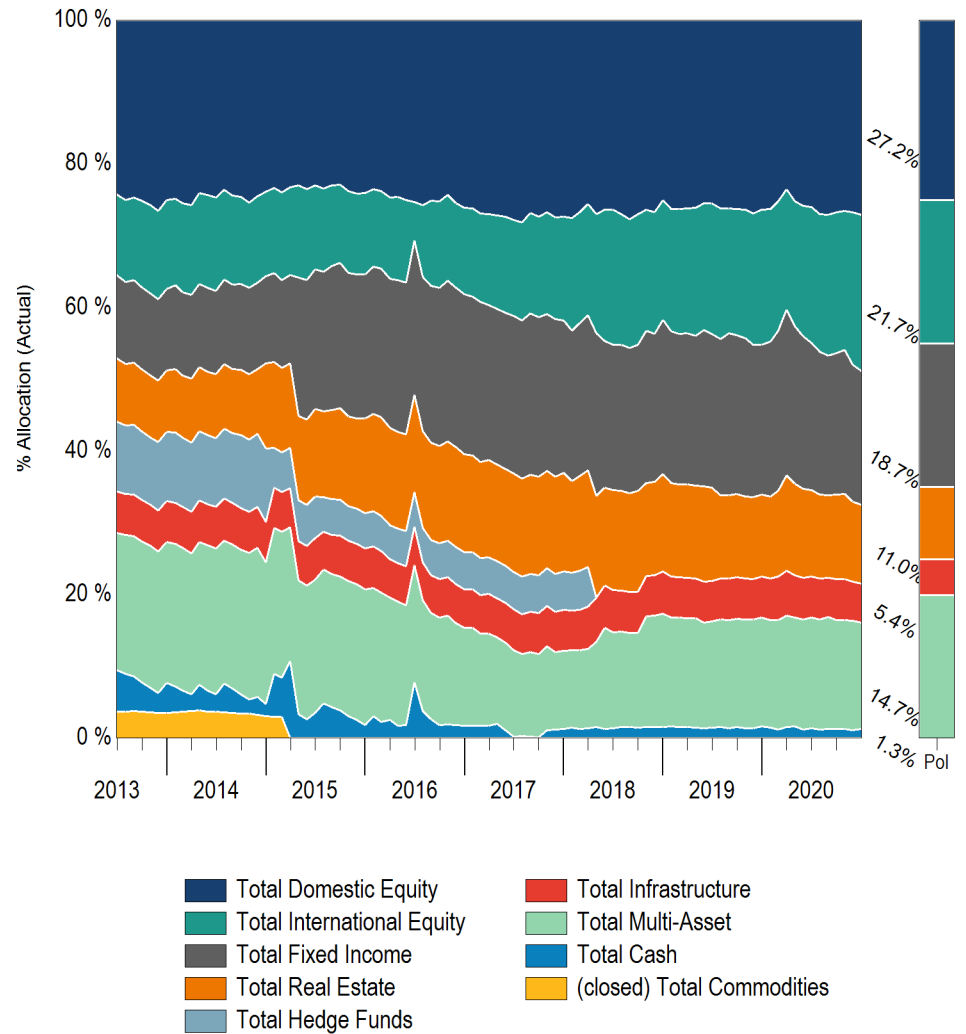
Total Fund  
Asset Allocation History

Period Ending: December 31, 2020

Market Value History



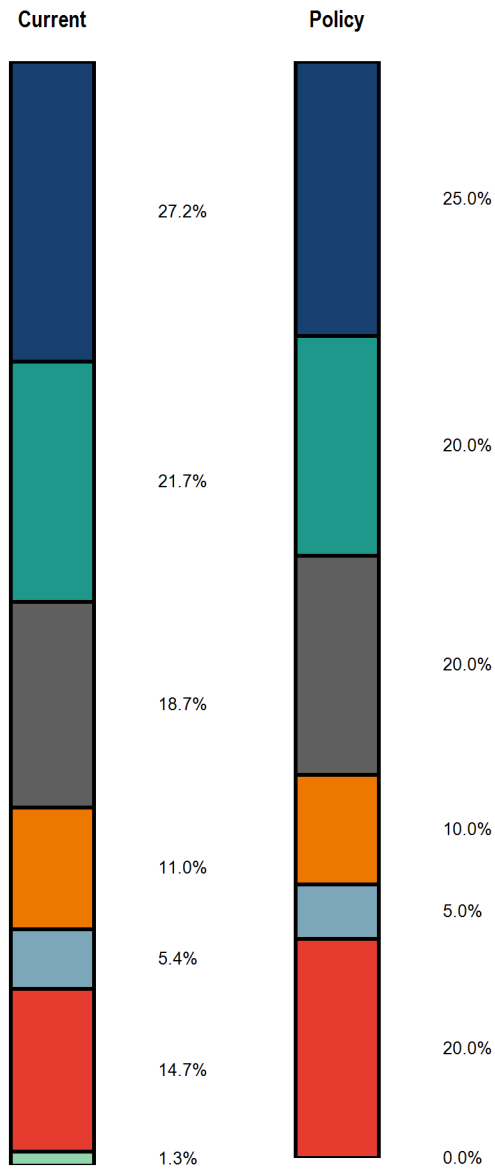
Asset Allocation History



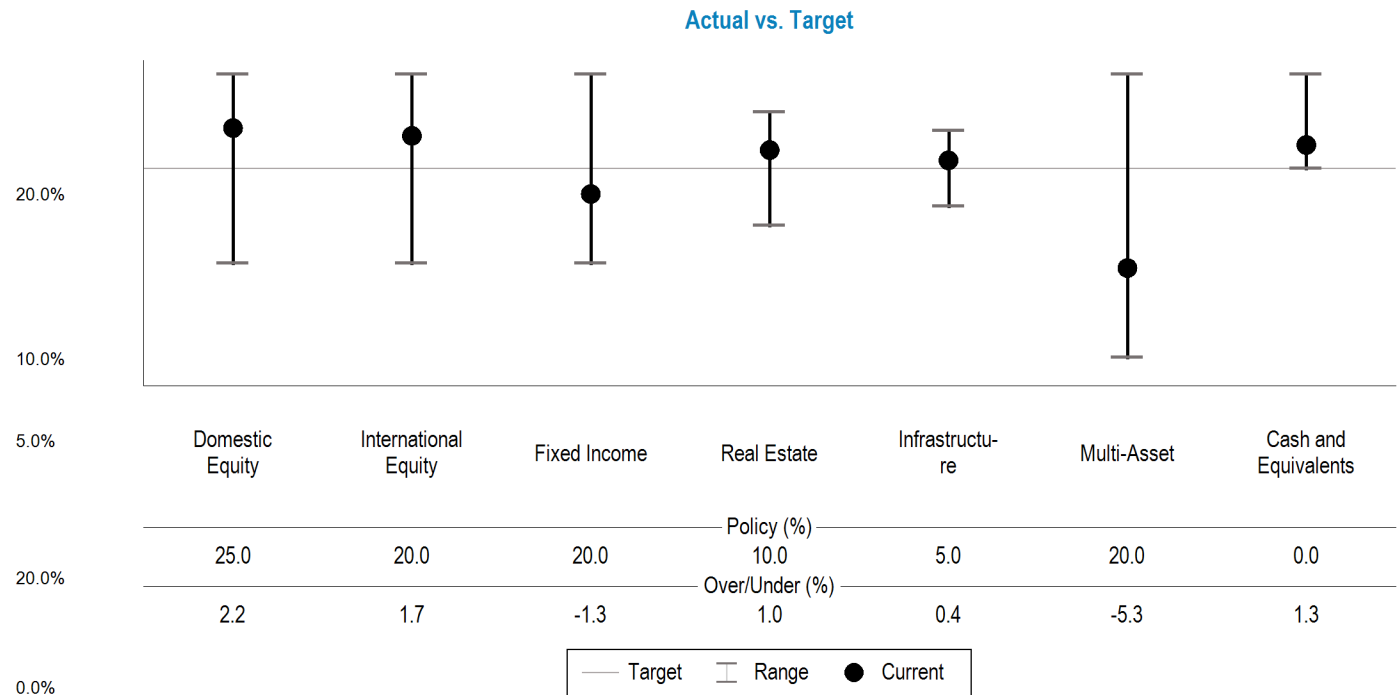
Net cash flow is cumulative.

Total Fund  
Asset Allocation vs. Policy

Period Ending: December 31, 2020



	Current	%	Policy	Difference	Policy Range	Within Range
Domestic Equity	\$92,048,838	27.2%	25.0%	\$7,296,431	20.0% - 30.0%	Yes
International Equity	\$73,716,567	21.7%	20.0%	\$5,914,642	15.0% - 25.0%	Yes
Fixed Income	\$63,272,441	18.7%	20.0%	-\$4,529,484	15.0% - 25.0%	Yes
Real Estate	\$37,253,570	11.0%	10.0%	\$3,352,608	7.0% - 13.0%	Yes
Infrastructure	\$18,453,983	5.4%	5.0%	\$1,503,502	3.0% - 7.0%	Yes
Multi-Asset	\$49,988,560	14.7%	20.0%	-\$17,813,365	10.0% - 25.0%	Yes
Cash and Equivalents	\$4,275,666	1.3%	0.0%	\$4,275,666	0.0% - 5.0%	Yes
<b>Total</b>	<b>\$339,009,626</b>	<b>100.0%</b>	<b>100.0%</b>			



Total Fund  
Investment Fund Fee Analysis

Period Ending: December 31, 2020

Name	Asset Class	Fee Schedule	Market Value	% of Portfolio	Estimated Fee Value	Estimated Fee
BlackRock Equity Index NL	Domestic Equity	0.03% of Assets	\$36,548,000	10.8%	\$10,964	0.03%
INTECH US Adaptive Volatility	Domestic Equity	0.40% of Assets	\$36,905,268	10.9%	\$147,621	0.40%
PanAgora US Small Cap Core Stock Selector	Domestic Equity	0.85% of Assets	\$18,595,569	5.5%	\$158,062	0.85%
WCM Focused International Growth Fund, L.P.	International Equity	0.75% of Assets	\$47,603,873	14.0%	\$357,029	0.75%
Causeway International Value Ins	International Equity	0.85% of Assets	\$26,112,694	7.7%	\$221,958	0.85%
Loomis Sayles Core Plus	Fixed Income	0.35% of First 20.0 Mil, 0.25% Thereafter	\$63,272,441	18.7%	\$178,181	0.28%
ASB Allegiance Real Estate	Real Estate	1.25% of First 5.0 Mil, 1.00% of Next 10.0 Mil, 0.90% of Next 60.0 Mil, 0.75% Thereafter	\$21,896,147	6.5%	\$224,565	1.03%
JPMorgan Special Situation Property	Real Estate	1.60% of Assets	\$15,357,423	4.5%	\$245,719	1.60%
IFM Global Infrastructure (US) LP	Infrastructure	0.77% of Assets	\$10,520,897	3.1%	\$81,011	0.77%
JPMorgan IIF ERISA LP	Infrastructure	1.25% of First 50.0 Mil, 1.15% of Next 50.0 Mil, 1.05% Thereafter	\$7,933,087	2.3%	\$99,164	1.25%
Invesco Balanced-Risk Allocation	Multi-Asset	0.38% of First 250.0 Mil, 0.35% of Next 500.0 Mil, 0.33% of Next 250.0 Mil, 0.30% Thereafter	\$49,988,560	14.7%	\$187,457	0.38%
US Bank Checking Account	Cash and Equivalents		\$1,682,472	0.5%		
US Bank Clearing Account	Cash and Equivalents		\$2,593,195	0.8%		
<b>Total</b>			<b>\$339,009,626</b>	<b>100.0%</b>	<b>\$1,911,732</b>	<b>0.56%</b>

Total Fund  
Watch List (Net of Fees)

Period Ending: December 31, 2020

Name	Allocation Group	Status	Rule 1	Rule 2	Rule 3	Rule 4	Rule 5	Rule 6
BlackRock Equity Index NL	Domestic Equity	No Issues	--	--	--	--	--	✓
INTECH US Adaptive Volatility	Domestic Equity	No Issues	--	--	--	--	--	--
PanAgora US Small Cap Core Stock Selector	Domestic Equity	No Issues	R	✓	R	R	--	--
WCM Focused International Growth Fund, L.P.	International Equity	No Issues	✓	✓	--	--	--	--
Causeway International Value Ins	International Equity	No Issues	R	✓	--	--	R	--
Loomis Sayles Core Plus	Fixed Income	No Issues	✓	✓	--	--	R	--
ASB Allegiance Real Estate	Real Estate	No Issues	✓	--	R	--	--	--
JPMorgan Special Situation Property	Real Estate	No Issues	✓	--	✓	--	--	--
IFM Global Infrastructure (US) LP	Infrastructure	No Issues	✓	--	✓	--	--	--
JPMorgan IIF ERISA LP	Infrastructure	No Issues	R	--	✓	--	--	--
Invesco Balanced-Risk Allocation	Multi-Asset	No Issues	R	R	R	R	--	--

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

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

Rule 3 - Manager has underperformed the benchmark index for the five year period.

Rule 4 - Manager has underperformed the 50th percentile in the appropriate style universe for the five year period.

Rule 5 - Fund experiences non-performance related issues including personnel turnover, changes in investment philosophy or drift, excessive asset growth, change in ownership and any other reason that raises concern.

Rule 6 - Index Fund Tracking Error exceeds 0.25% of the appropriate benchmark over the one year period.

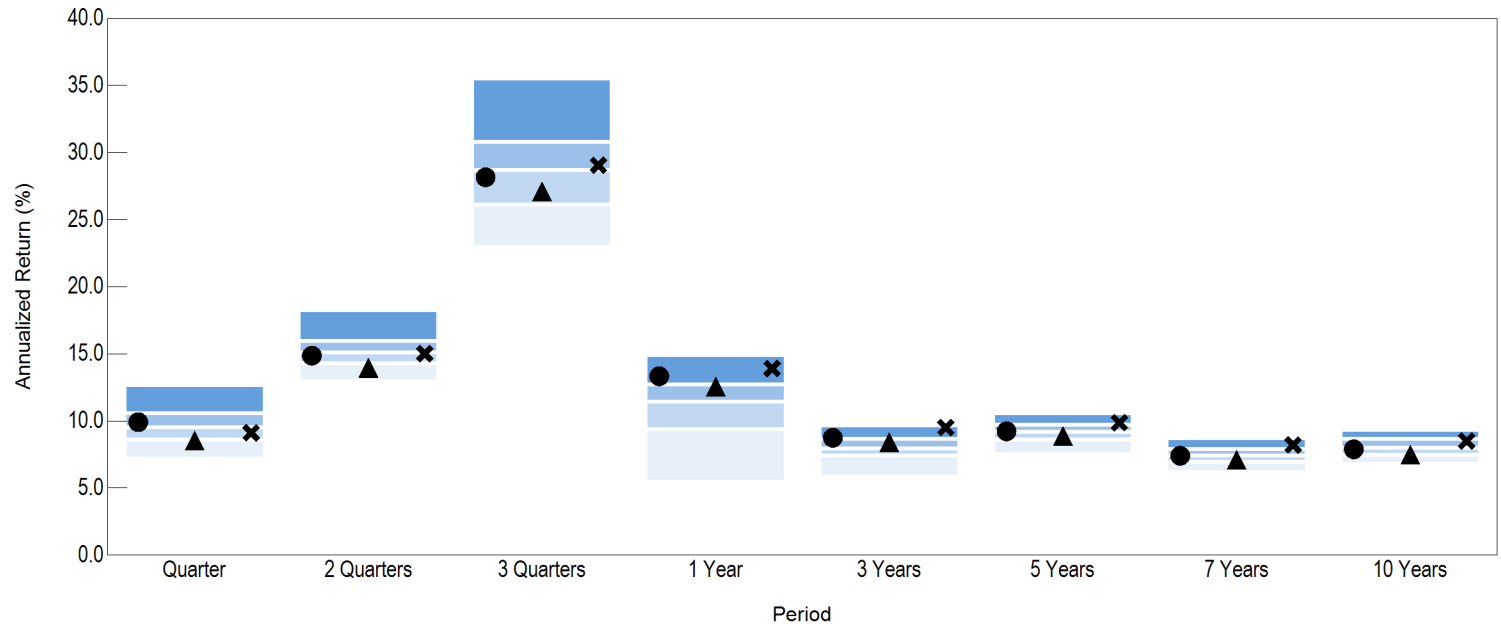
Causeway International Value Ins: Provisional: 1/31/2020, Jamie Doyle, one of their eight Fundamental Portfolio Managers, will retire in June 2020. Loomis Sayles Core Plus: Provisional: 10/16/2020, On October 13, 2020, Loomis Sayles announced that Jae Park, Chief Investment Officer, will retire from the firm effective 3/31/2021.

Total Fund

Peer Universe Comparison: Cumulative Performance (Net of Fees)

Period Ending: December 31, 2020

Total Fund Cumulative Performance vs. InvMetrics Tft-Hrtly DB \$250mm-\$1B Net



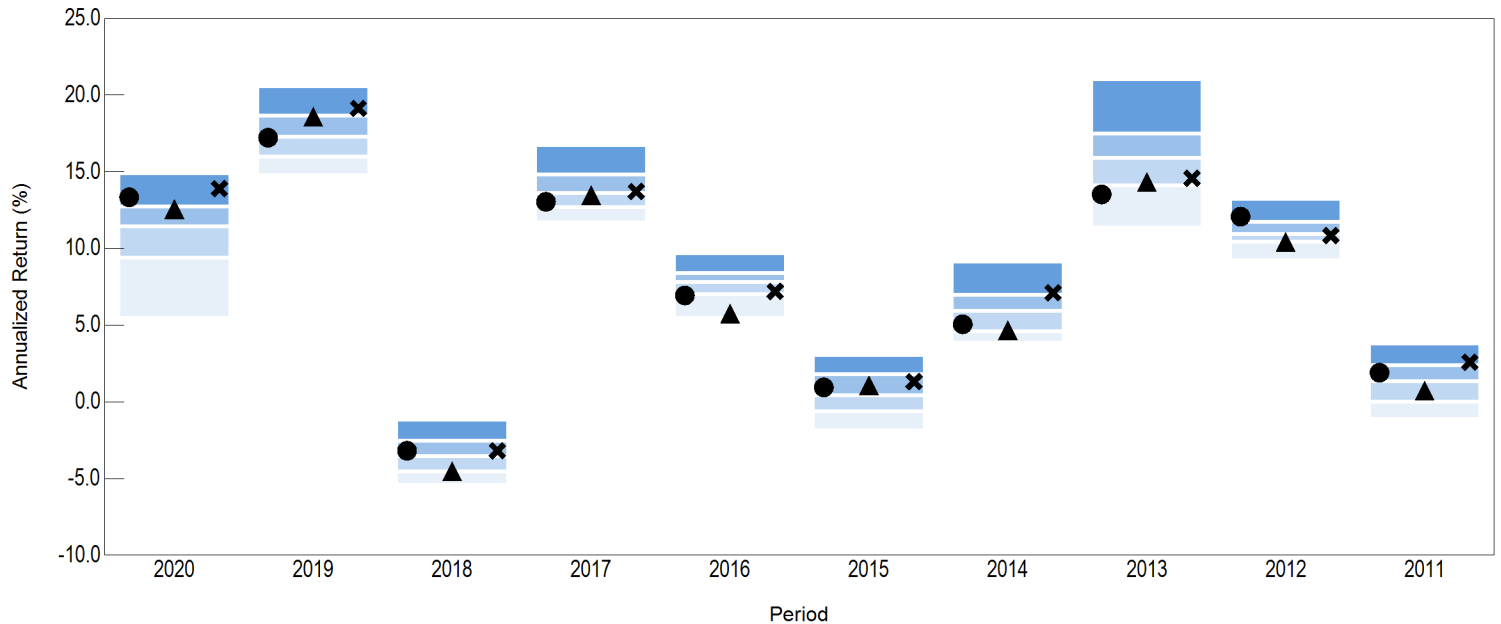
	Return (Rank)															
	Quarter		2 Quarters		3 Quarters		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	12.7	18.2	35.5	14.9	9.7	10.6	8.7	8.7	9.3							
25th Percentile	10.6	16.0	30.8	12.8	8.7	9.7	7.9	8.7	8.7							
Median	9.6	15.1	28.7	11.5	8.0	9.2	7.5	8.0	8.0							
75th Percentile	8.6	14.3	26.1	9.4	7.4	8.6	7.0	7.4	7.5							
95th Percentile	7.2	13.0	23.0	5.5	5.9	7.5	6.2	5.9	6.9							
# of Portfolios	77	77	77	77	77	75	74	77	70							
● Total Fund	9.9	(42)	14.9	(62)	28.2	(58)	13.3	(15)	8.7	(22)	9.2	(48)	7.4	(54)	7.9	(58)
▲ Total Fund Policy Index	8.5	(79)	14.0	(82)	27.1	(67)	12.6	(30)	8.4	(35)	8.9	(67)	7.1	(67)	7.5	(76)
✕ Target Asset Allocation Policy Index	9.1	(65)	15.0	(57)	29.1	(42)	13.9	(9)	9.5	(9)	9.9	(17)	8.2	(15)	8.5	(29)

Total Fund

Peer Universe Comparison: Consecutive Periods (Net of Fees)

Period Ending: December 31, 2020

Total Fund Consecutive Periods vs. InvMetrics Tft-Hrtly DB \$250mm-\$1B Net



	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
<b>Return (Rank)</b>										
5th Percentile	14.9	20.6	-1.2	16.7	9.7	3.0	9.1	21.0	13.2	3.8
25th Percentile	12.8	18.7	-2.5	14.9	8.4	1.8	7.0	17.5	11.8	2.4
Median	11.5	17.3	-3.5	13.6	7.8	0.4	6.0	15.9	11.0	1.4
75th Percentile	9.4	16.0	-4.5	12.7	7.0	-0.6	4.6	14.2	10.4	0.0
95th Percentile	5.5	14.8	-5.4	11.7	5.5	-1.9	3.9	11.4	9.3	-1.1
# of Portfolios	77	86	84	69	56	58	55	49	37	34
● Total Fund	13.3 (15)	17.2 (52)	-3.2 (45)	13.0 (64)	6.9 (80)	0.9 (38)	5.1 (70)	13.5 (79)	12.1 (20)	1.9 (40)
▲ Total Fund Policy Index	12.6 (30)	18.6 (28)	-4.5 (75)	13.5 (51)	5.8 (93)	1.1 (37)	4.7 (75)	14.3 (70)	10.4 (79)	0.7 (60)
✕ Target Asset Allocation Policy Index	13.9 (9)	19.1 (19)	-3.2 (45)	13.7 (46)	7.2 (69)	1.3 (36)	7.1 (21)	14.6 (66)	10.8 (63)	2.6 (20)

## Domestic Equity

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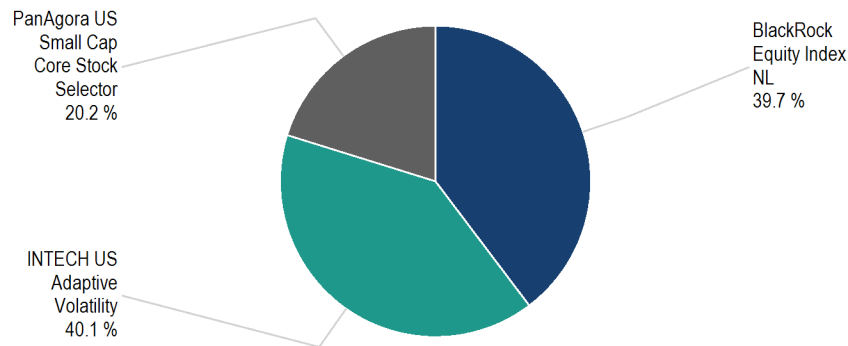


# Total Domestic Equity Performance Summary (Net of Fees)

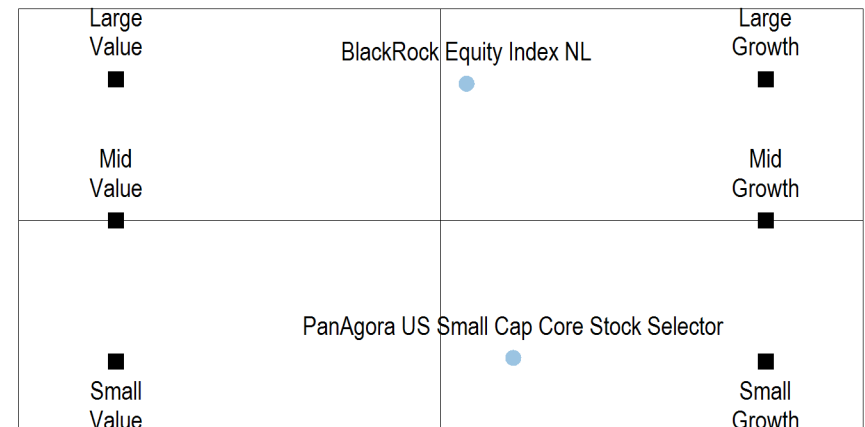
Period Ending: December 31, 2020

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2020	2019	2018	2017	2016
<b>Total Domestic Equity</b>	<b>92,048,838</b>	<b>100.0</b>	<b>12.6</b>	<b>15.9</b>	<b>11.5</b>	<b>13.1</b>	<b>12.8</b>	<b>15.9</b>	<b>27.2</b>	<b>-5.9</b>	<b>19.4</b>	<b>11.5</b>
<i>Dow Jones U.S. Total Stock Market</i>			14.8	20.8	14.4	15.4	13.7	20.8	30.9	-5.3	21.2	12.6
<i>InvMetrics Tff-Hrtly DB US Eq Net Rank</i>			93	68	71	76	39	68	89	34	71	61
<b>Domestic Equity</b>	<b>92,048,838</b>	<b>100.0</b>										
BlackRock Equity Index NL	36,548,000	39.7	12.1	18.4	14.2	15.2	13.9	18.4	31.5	-4.4	21.8	11.9
<i>S&amp;P 500</i>			12.1	18.4	14.2	15.2	13.9	18.4	31.5	-4.4	21.8	12.0
<i>eV US Large Cap Core Equity Net Rank</i>			41	29	20	13	14	29	28	32	46	21
INTECH US Adaptive Volatility	36,905,268	40.1	7.0	14.0	--	--	--	14.0	23.4	--	--	--
<i>Russell 1000</i>			13.7	21.0	--	--	--	21.0	31.4	--	--	--
<i>eV US Large Cap Core Equity Net Rank</i>			95	53	--	--	--	53	91	--	--	--
PanAgora US Small Cap Core Stock Selector	18,595,569	20.2	27.6	14.7	9.5	11.8	--	14.7	26.1	-9.2	10.8	20.3
<i>Russell 2000</i>			31.4	20.0	10.2	13.3	--	20.0	25.5	-11.0	14.6	21.3
<i>eV US Small Cap Core Equity Net Rank</i>			47	51	40	53	--	51	37	36	83	41

**Total Domestic Equity**  
Current Allocation

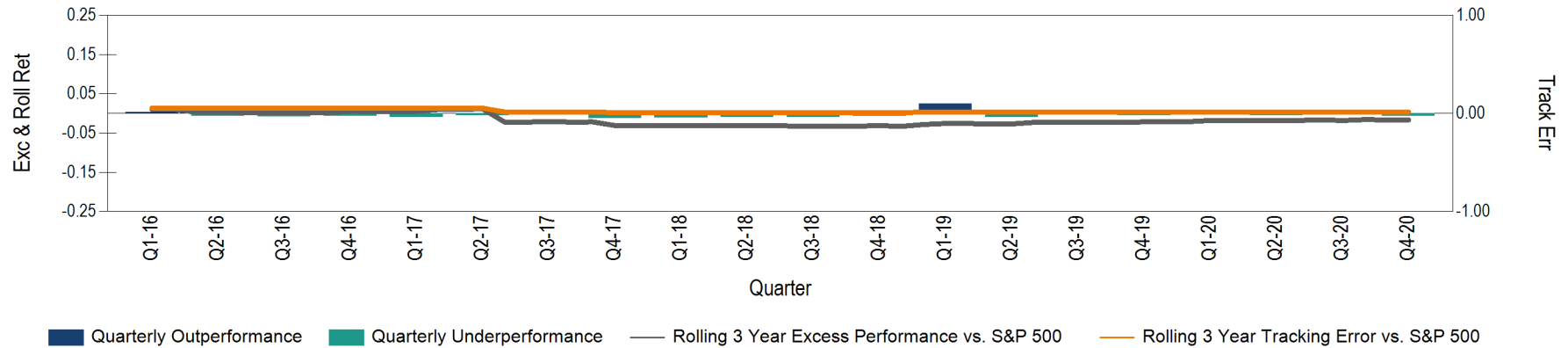


**Domestic Effective Style Map**  
3 Years

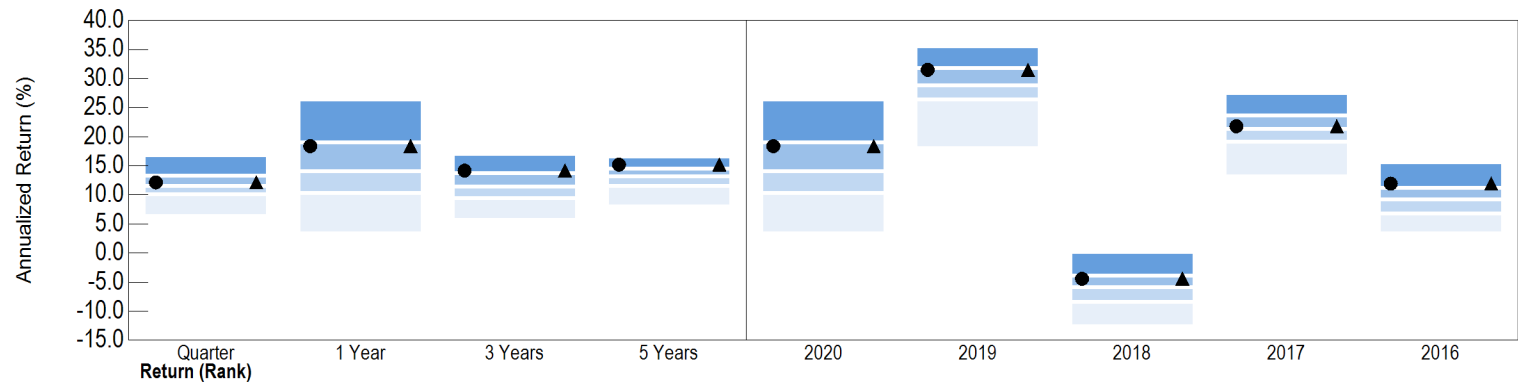


Style map requires 3 years of returns. INTECH US Adaptive Volatility replaced INTECH US Managed Volatility on 8/3/2018.

Rolling Annualized Excess Performance and Tracking Error



BlackRock Equity Index NL vs. eV US Large Cap Core Equity Net Universe

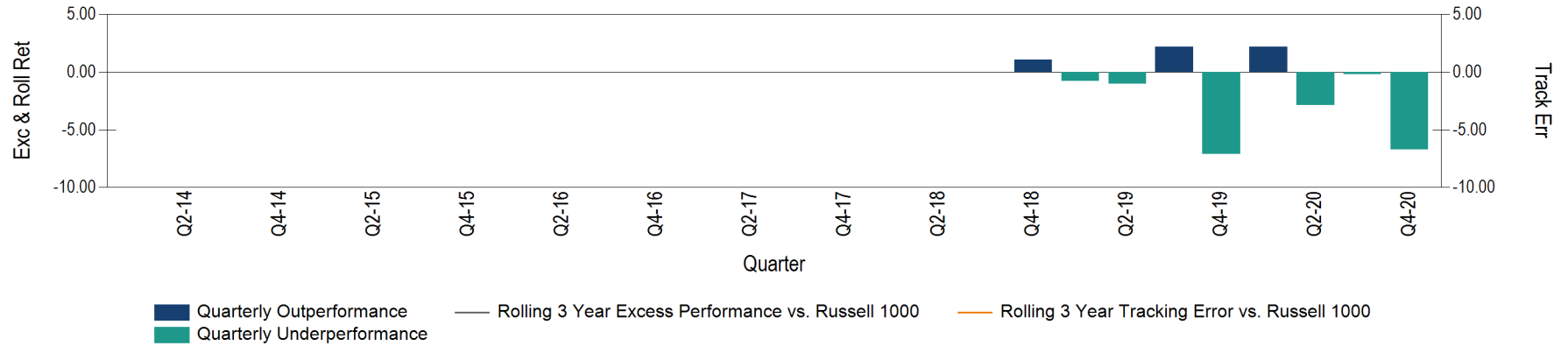


	Quarter	1 Year	3 Years	5 Years	2020	2019	2018	2017	2016
<b>5th Percentile</b>	16.7	26.4	17.0	16.5	26.4	35.5	0.1	27.4	15.6
<b>25th Percentile</b>	13.3	19.1	13.8	14.6	19.1	31.9	-3.8	23.7	11.3
<b>Median</b>	11.6	14.1	11.5	13.2	14.1	28.9	-5.8	21.4	9.3
<b>75th Percentile</b>	10.2	10.4	9.5	11.6	10.4	26.5	-8.3	19.2	6.9
<b>95th Percentile</b>	6.4	3.5	5.8	8.0	3.5	18.1	-12.5	13.2	3.4
<b># of Portfolios</b>	216	216	207	191	216	203	189	188	177
● <b>BlackRock Equity Index NL</b>	12.1 (41)	18.4 (29)	14.2 (20)	15.2 (13)	18.4 (29)	31.5 (28)	-4.4 (32)	21.8 (46)	11.9 (21)
▲ <b>S&amp;P 500</b>	12.1 (41)	18.4 (29)	14.2 (19)	15.2 (13)	18.4 (29)	31.5 (28)	-4.4 (32)	21.8 (46)	12.0 (21)

# INTECH US Adaptive Volatility Performance Summary (Net of Fees)

Period Ending: December 31, 2020

### Rolling Annualized Excess Performance and Tracking Error



### INTECH US Adaptive Volatility vs. eV US Large Cap Core Equity Net Universe

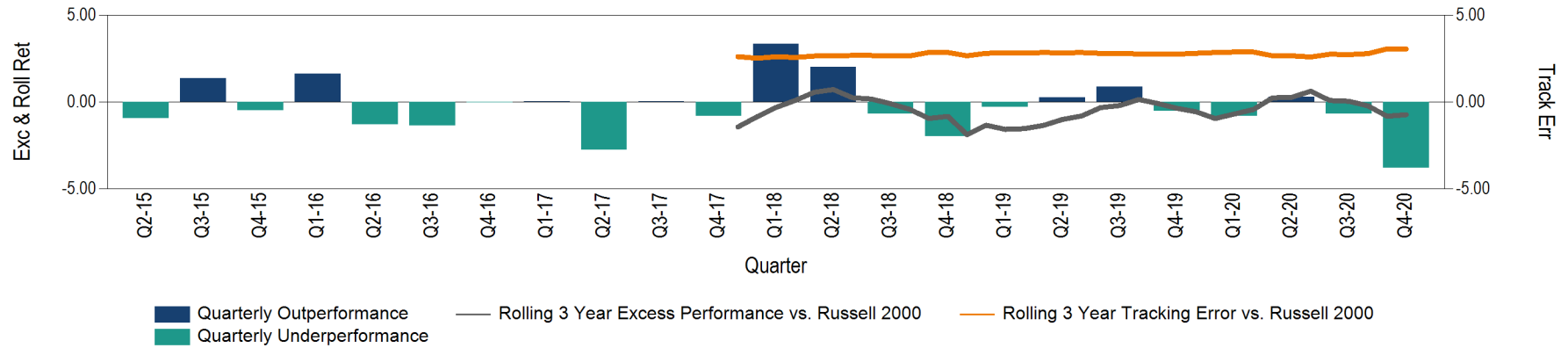


INTECH US Adaptive Volatility replaced INTECH US Managed Volatility on 8/3/2018.

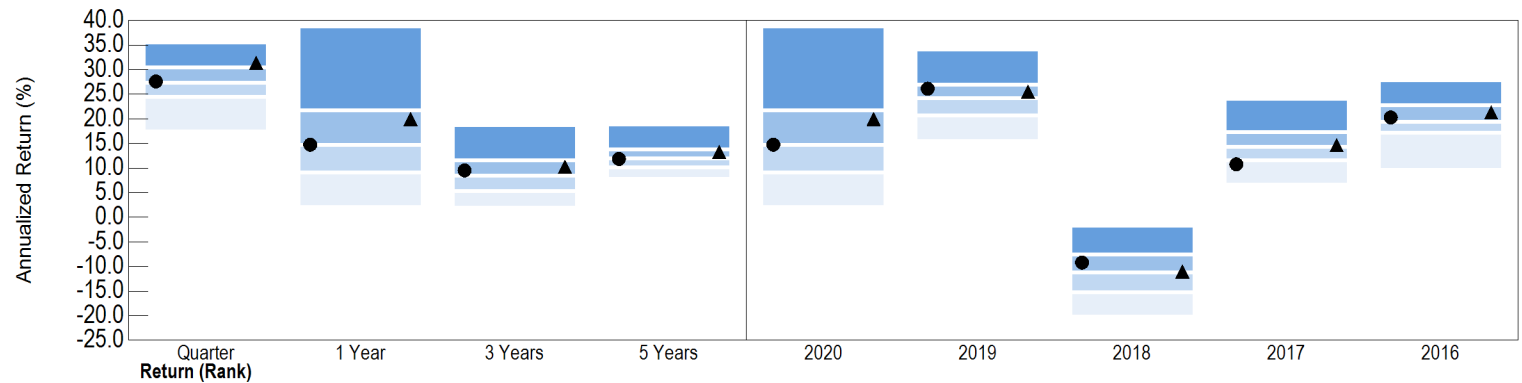
# PanAgora US Small Cap Core Stock Selector Performance Summary (Net of Fees)

Period Ending: December 31, 2020

### Rolling Annualized Excess Performance and Tracking Error



### PanAgora US Small Cap Core Stock Selector vs. eV US Small Cap Core Equity Net Universe



	Quarter	1 Year	3 Years	5 Years	2020	2019	2018	2017	2016
<b>5th Percentile</b>	35.4	38.8	18.7	18.8	38.8	34.1	-1.8	24.1	27.8
<b>25th Percentile</b>	30.5	21.8	11.6	13.9	21.8	27.0	-7.5	17.3	22.8
<b>Median</b>	27.4	14.8	8.6	12.0	14.8	24.3	-11.1	14.4	19.5
<b>75th Percentile</b>	24.6	9.1	5.4	10.3	9.1	20.7	-15.1	11.6	17.3
<b>95th Percentile</b>	17.4	2.1	2.1	7.8	2.1	15.5	-20.1	6.7	9.7
<b># of Portfolios</b>	113	113	111	104	113	112	113	106	99
● PanAgora US Small Cap Core Stock Selector	27.6 (47)	14.7 (51)	9.5 (40)	11.8 (53)	14.7 (51)	26.1 (37)	-9.2 (36)	10.8 (83)	20.3 (41)
▲ Russell 2000	31.4 (15)	20.0 (30)	10.2 (33)	13.3 (35)	20.0 (30)	25.5 (41)	-11.0 (50)	14.6 (46)	21.3 (34)

# International Equity

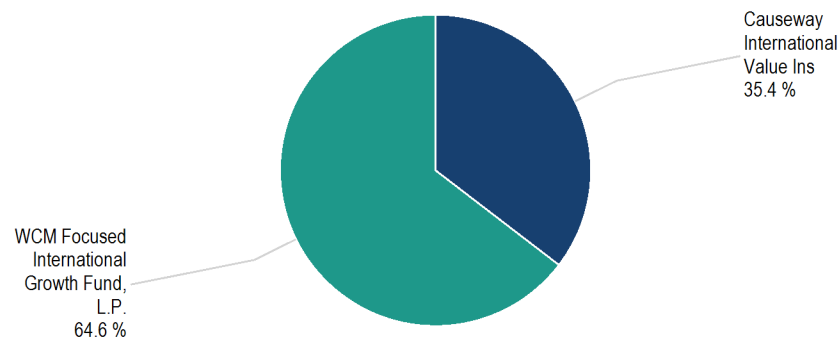
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# Total International Equity Performance Summary (Net of Fees)

Period Ending: December 31, 2020

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2020	2019	2018	2017	2016
<b>Total International Equity</b>	<b>73,716,567</b>	<b>100.0</b>	<b>20.7</b>	<b>21.7</b>	<b>10.6</b>	<b>11.6</b>	<b>5.9</b>	<b>21.7</b>	<b>27.8</b>	<b>-13.0</b>	<b>26.6</b>	<b>0.9</b>
<i>Total Public Int'l Equity Benchmark (MSCI ACWI ex US IMI)</i>			17.2	11.1	4.8	9.0	5.3	11.1	21.6	-14.8	27.8	4.4
<i>InvMetrics Tft-Hrtly DB ex-US Eq Net Rank</i>			13	13	7	12	33	13	10	14	71	82
<b>International Equity</b>	<b>73,716,567</b>	<b>100.0</b>										
WCM Focused International Growth Fund, L.P.	47,603,873	64.6	17.3	33.1	18.7	--	--	33.1	35.7	-7.4	31.1	--
<i>MSCI ACWI ex USA</i>			17.0	10.7	4.9	--	--	10.7	21.5	-14.2	27.2	--
<i>eV ACWI ex-US All Cap Growth Eq Net Rank</i>			32	35	14	--	--	35	12	1	71	--
Causeway International Value Ins	26,112,694	35.4	27.3	5.4	1.0	--	--	5.4	20.1	-18.6	27.2	--
<i>MSCI EAFE</i>			16.0	7.8	4.3	--	--	7.8	22.0	-13.8	25.0	--
<i>Foreign Large Value MStar MF Rank</i>			2	22	36	--	--	22	22	91	14	--

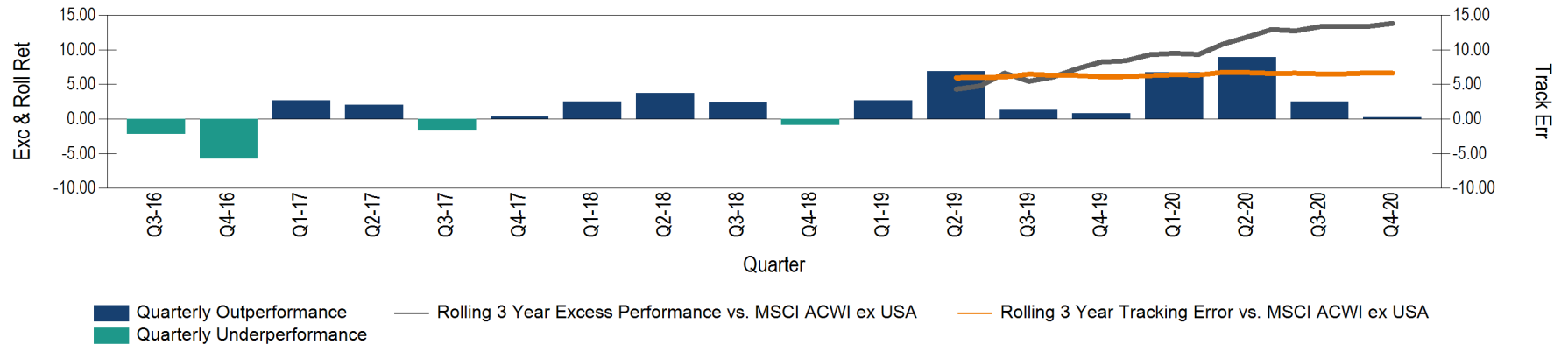
Total International Equity  
Current Allocation



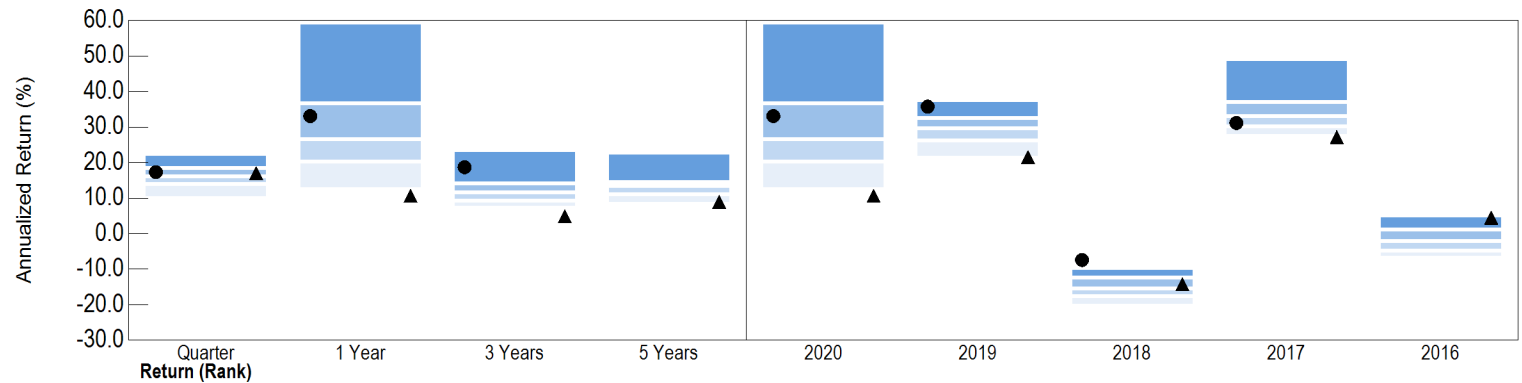
WCM Focused International Growth Fund, L.P.  
Performance Summary (Net of Fees)

Period Ending: December 31, 2020

Rolling Annualized Excess Performance and Tracking Error



WCM Focused International Growth Fund, L.P. vs. eV ACWI ex-US All Cap Growth Eq Net Universe

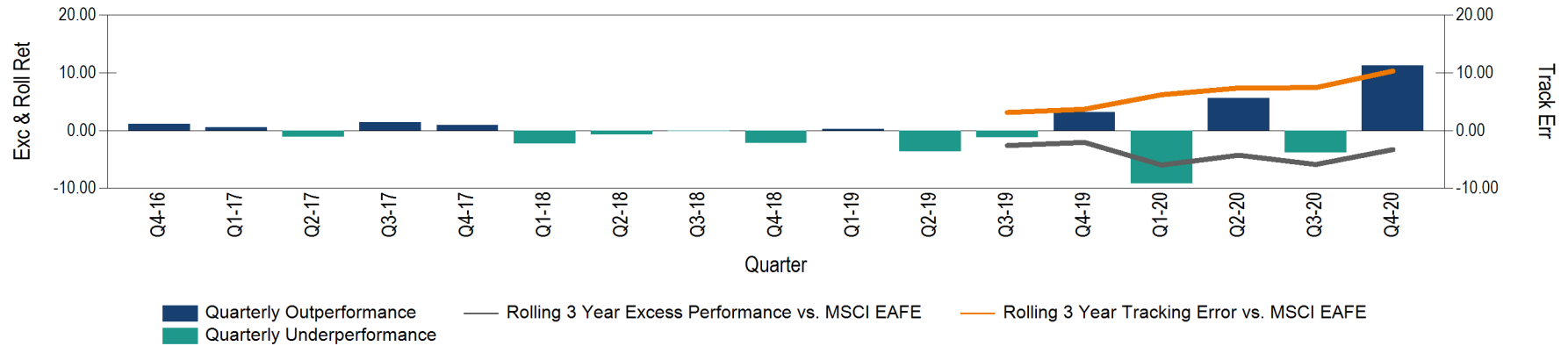


	Quarter	1 Year	3 Years	5 Years	2020	2019	2018	2017	2016
<b>5th Percentile</b>	22.3	59.4	23.4	22.8	59.4	37.5	-9.7	49.1	5.0
<b>25th Percentile</b>	18.6	36.8	14.2	14.6	36.8	32.7	-12.3	37.2	1.2
<b>Median</b>	16.2	26.7	11.8	13.6	26.7	29.7	-15.3	33.2	-2.0
<b>75th Percentile</b>	14.1	20.3	9.4	11.3	20.3	26.2	-17.5	30.4	-4.7
<b>95th Percentile</b>	10.0	12.6	7.3	8.5	12.6	21.5	-20.2	27.5	-6.6
<b># of Portfolios</b>	33	33	32	30	33	32	26	27	25
● WCM Focused International Growth Fund, L.P.	17.3 (32)	33.1 (35)	18.7 (14)	-- (-)	33.1 (35)	35.7 (12)	-7.4 (1)	31.1 (71)	-- (-)
▲ MSCI ACWI ex USA	17.0 (41)	10.7 (97)	4.9 (99)	8.9 (94)	10.7 (97)	21.5 (96)	-14.2 (49)	27.2 (96)	4.5 (8)

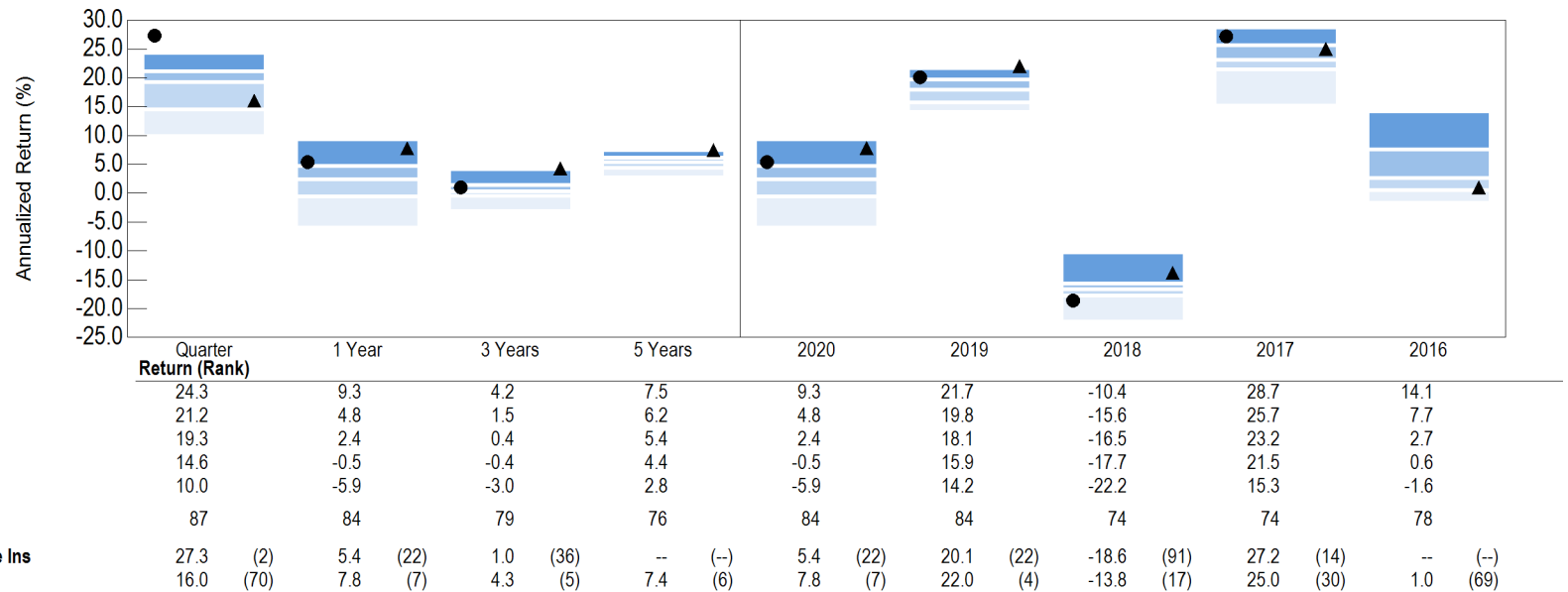
# Causeway International Value Ins Performance Summary (Net of Fees)

Period Ending: December 31, 2020

### Rolling Annualized Excess Performance and Tracking Error



### Causeway International Value Ins vs. Foreign Large Value MStar MF Universe





## Domestic Fixed Income

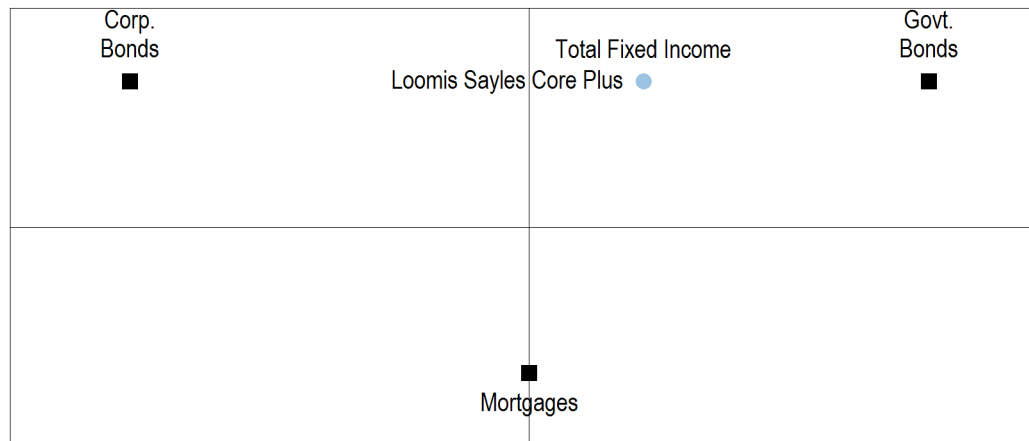
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Total Fixed Income  
Performance Summary (Net of Fees)

Period Ending: December 31, 2020

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2020	2019	2018	2017	2016
<b>Total Fixed Income</b>	<b>63,272,441</b>	<b>100.0</b>	<b>2.1</b>	<b>11.3</b>	<b>6.6</b>	<b>6.6</b>	<b>5.3</b>	<b>11.3</b>	<b>9.4</b>	<b>-0.4</b>	<b>5.6</b>	<b>7.5</b>
<i>Total Fixed Income Benchmark (BBgBarc Aggregate)</i>			0.7	7.5	5.3	4.4	3.8	7.5	8.7	0.0	3.5	2.6
<i>InvMetrics Tff-Hrtly DB US Fix Inc Net Rank</i>			35	2	3	2	7	2	28	75	18	9
<b>Fixed Income</b>	<b>63,272,441</b>	<b>100.0</b>										
Loomis Sayles Core Plus	63,272,441	100.0	2.1	11.3	6.6	--	--	11.3	9.4	-0.4	--	--
<i>BBgBarc US Aggregate TR</i>			0.7	7.5	5.3	--	--	7.5	8.7	0.0	--	--
<i>eV US Core Plus Fixed Inc Net Rank</i>			48	9	11	--	--	9	63	40	--	--

Fixed Income Style Map  
3 Years



Loomis Sayles Core Plus replaced Loomis Sayles Full Discretion 3/21/2017.

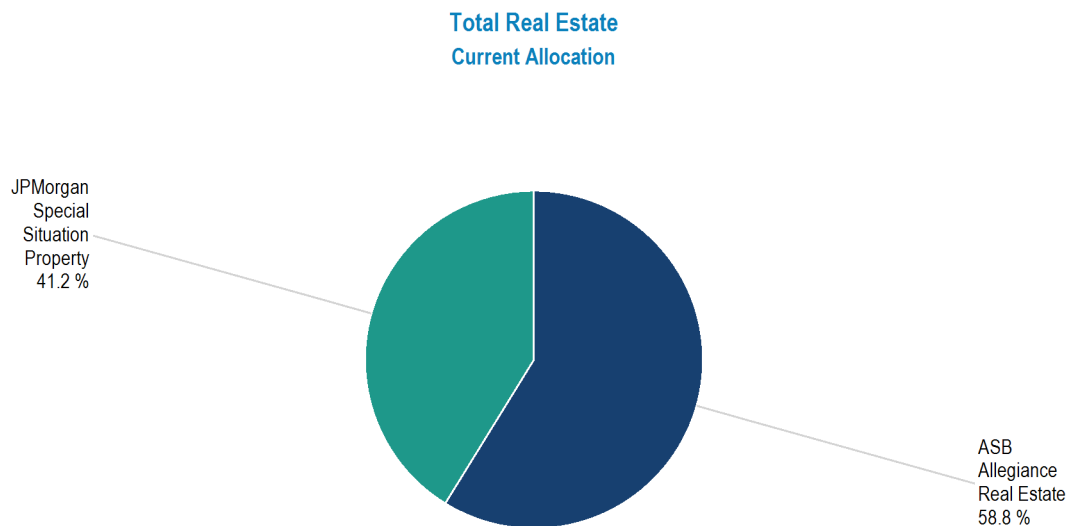
## Alternatives

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# Total Real Estate Performance Summary (Net of Fees)

Period Ending: December 31, 2020

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2020	2019	2018	2017	2016
<b>Total Real Estate</b>	<b>37,253,570</b>	<b>100.0</b>	<b>1.5</b>	<b>2.3</b>	<b>4.9</b>	<b>5.0</b>	<b>9.6</b>	<b>2.3</b>	<b>4.6</b>	<b>7.8</b>	<b>5.0</b>	<b>5.4</b>
<i>NCREIF ODCE Net</i>			<i>1.1</i>	<i>0.3</i>	<i>4.0</i>	<i>5.3</i>	<i>8.9</i>	<i>0.3</i>	<i>4.4</i>	<i>7.4</i>	<i>6.7</i>	<i>7.8</i>
<b>Real Estate</b>	<b>37,253,570</b>	<b>100.0</b>										
ASB Allegiance Real Estate	21,896,147	58.8	1.1	2.4	4.5	4.4	--	2.4	4.2	7.1	3.9	4.5
<i>NCREIF ODCE Net</i>			<i>1.1</i>	<i>0.3</i>	<i>4.0</i>	<i>5.3</i>	<i>--</i>	<i>0.3</i>	<i>4.4</i>	<i>7.4</i>	<i>6.7</i>	<i>7.8</i>
JPMorgan Special Situation Property	15,357,423	41.2	2.0	2.0	5.5	6.6	--	2.0	5.0	9.6	7.9	8.7
<i>NCREIF-ODCE</i>			<i>1.3</i>	<i>1.2</i>	<i>4.9</i>	<i>6.2</i>	<i>--</i>	<i>1.2</i>	<i>5.3</i>	<i>8.3</i>	<i>7.6</i>	<i>8.8</i>



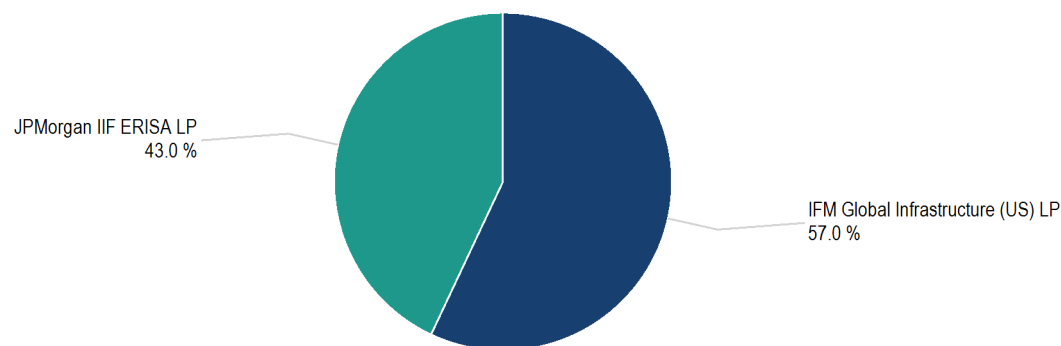
Invesco Real Estate II liquidated 9/1/2019.

# Total Infrastructure Performance Summary (Net of Fees)

Period Ending: December 31, 2020

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2020	2019	2018	2017	2016
<b>Total Infrastructure</b>	<b>18,453,983</b>	<b>100.0</b>	<b>4.6</b>	<b>5.4</b>	<b>9.0</b>	<b>9.6</b>	<b>7.6</b>	<b>5.4</b>	<b>11.5</b>	<b>10.2</b>	<b>17.9</b>	<b>3.8</b>
<i>CPI + 5%</i>			1.3	6.4	6.9	7.0	6.8	6.4	7.4	7.0	7.2	7.2
<b>Infrastructure</b>	<b>18,453,983</b>	<b>100.0</b>										
IFM Global Infrastructure (US) LP	10,520,897	57.0	4.2	3.1	11.0	12.0	9.1	3.1	14.6	15.8	21.1	6.1
<i>CPI + 5%</i>			1.3	6.4	6.9	7.0	6.8	6.4	7.4	7.0	7.2	7.2
JPMorgan IIF ERISA LP	7,933,087	43.0	5.2	8.4	6.8	7.1	6.0	8.4	8.0	4.2	14.2	1.2
<i>CPI + 5%</i>			1.3	6.4	6.9	7.0	6.8	6.4	7.4	7.0	7.2	7.2

Total Infrastructure  
Current Allocation

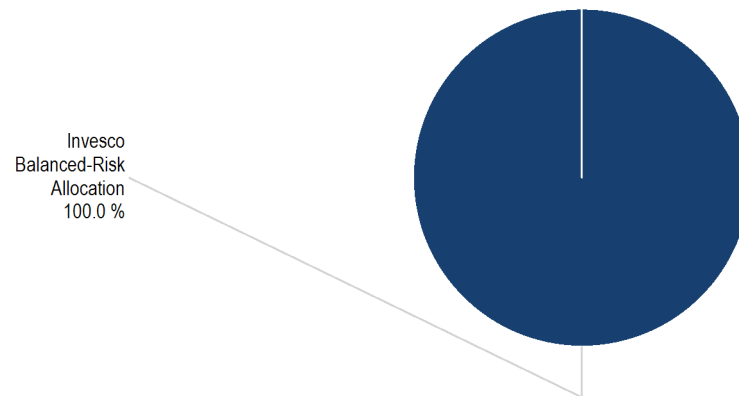


Total Multi-Asset  
Performance Summary (Net of Fees)

Period Ending: December 31, 2020

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2020	2019	2018	2017	2016
<b>Total Multi-Asset</b>	<b>49,988,560</b>	<b>100.0</b>	<b>10.7</b>	<b>10.8</b>	<b>6.5</b>	<b>7.5</b>	<b>6.7</b>	<b>10.8</b>	<b>15.7</b>	<b>-5.8</b>	<b>10.6</b>	<b>7.4</b>
60% MSCI ACWI Net/40% FTSE WGBI			9.9	14.5	8.4	9.5	6.6	14.5	18.2	-5.8	17.1	5.5
eV Global Balanced Net Rank			69	46	66	86	72	46	92	22	99	54
<b>Multi-Asset</b>	<b>49,988,560</b>	<b>100.0</b>										
Invesco Balanced-Risk Allocation	49,988,560	100.0	10.7	10.8	6.5	8.4	6.9	10.8	15.7	-5.8	10.5	12.2
60% MSCI ACWI Net/40% FTSE WGBI			9.9	14.5	8.4	9.5	6.6	14.5	18.2	-5.8	17.1	5.5
FTSE 3-Month T-bill +6%			1.5	6.6	7.6	7.2	6.6	6.6	8.4	8.0	6.9	6.3
eV Global Balanced Net Rank			69	46	66	66	69	46	92	22	99	19

Total Multi-Asset  
Current Allocation

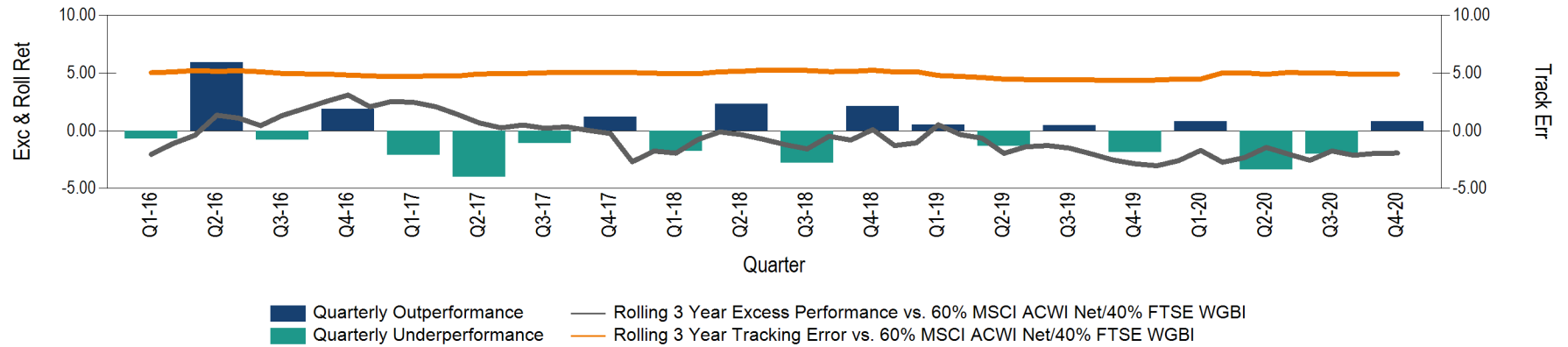


Mellon Dynamic liquidated 5/5/2017.

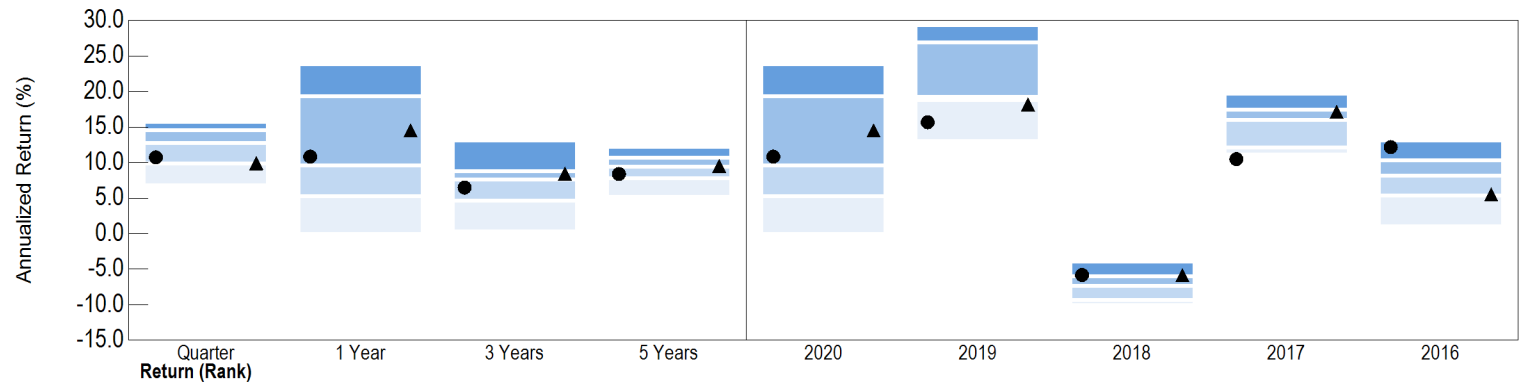
# Invesco Balanced-Risk Allocation Performance Summary (Net of Fees)

Period Ending: December 31, 2020

### Rolling Annualized Excess Performance and Tracking Error



### Invesco Balanced-Risk Allocation vs. eV Global Balanced Net Universe



	Quarter	1 Year	3 Years	5 Years	2020	2019	2018	2017	2016
<b>5th Percentile</b>	15.7	23.8	13.1	12.2	23.8	29.3	-4.0	19.6	13.1
<b>25th Percentile</b>	14.6	19.4	8.8	10.8	19.4	27.0	-6.0	17.5	10.3
<b>Median</b>	12.8	9.6	7.6	9.4	9.6	19.3	-7.3	16.1	8.2
<b>75th Percentile</b>	9.9	5.4	4.7	7.9	5.4	18.8	-9.3	12.2	5.4
<b>95th Percentile</b>	6.9	0.0	0.4	5.2	0.0	13.1	-10.0	11.1	1.1
<b># of Portfolios</b>	10	10	10	8	10	9	10	9	13
<b>● Invesco Balanced-Risk Allocation</b>	10.7 (69)	10.8 (46)	6.5 (66)	8.4 (66)	10.8 (46)	15.7 (92)	-5.8 (22)	10.5 (99)	12.2 (19)
<b>▲ 60% MSCI ACWI Net/40% FTSE WGBI</b>	9.9 (76)	14.5 (33)	8.4 (29)	9.5 (49)	14.5 (33)	18.2 (88)	-5.8 (22)	17.1 (29)	5.5 (68)

**Performance Return Calculations**

Performance is calculated using Modified Dietz and for time periods with large cash flow (generally greater than 10% of portfolio value), Time Weighted Rates of Return (TWRR) methodologies. Monthly returns are geometrically linked and annualized for periods longer than one year.

**Data Source**

Verus is an independent third party consulting firm and calculates returns from best source book of record data. Returns calculated by Verus may deviate from those shown by the manager in part, but not limited to, differences in prices and market values reported by the custodian and manager, as well as significant cash flows into or out of an account. It is the responsibility of the manager and custodian to provide insight into the pricing methodologies and any difference in valuation.

**Illiquid Alternatives**

Due to the inability to receive final valuation prior to report production, closed end funds (including but are not limited to Real Estate, Hedge Funds, Private Equity, and Private Credit) performance is typically reported at a one-quarter lag. Valuation is reported at a one-quarter lag, adjusted for current quarter flow (cash flows are captured real time). Closed end fund performance is calculated using a time-weighted return methodology consistent with all portfolio and total fund performance calculations. For Private Markets, performance reports also include Verus-calculated multiples based on flows and valuations (e.g. DPI and TVPI) and manager-provided IRRs.

**Manager Line Up**

<u>Manager</u>	<u>Fund Incepted</u>	<u>Data Source</u>	<u>Manager</u>	<u>Fund Incepted</u>	<u>Data Source</u>
BlackRock Equity Index NL	4/30/2010	BlackRock	JPMorgan SSP	12/31/2014	JP Morgan
INTECH US Adaptive Volatility	8/3/2018	INTECH	IFM Global Infrastructure (US) LP	1/31/2009	IFM
PanAgora US Small Cap	1/31/2015	PanAgora	JPMorgan IIF ERISA LP	9/30/2010	JP Morgan
WCM Focused International Growth	7/1/2016	WCM	Invesco Balanced-Risk Allocation	1/31/2010	Invesco
Causeway International Value	7/27/2016	US Bank	US Bank Checking Account	N/A	US Bank
Loomis Sayles Core Plus	3/21/2017	Loomis Sayles	US Bank Clearing Account	N/A	US Bank
ASB Allegiance Real Estate	3/31/2015	ASB			

**Policy & Custom Index Composition**

Policy Index: 45% MSCI World, 25% BBgBarc Aggregate, 10% NCREIF-ODCE Net, 20% (60%MSCI ACWI Net/40% CITI WGBI)

Target Asset Allocation Policy: 25% Dow Jones US Total Stock, 20% MSCI ACWI ex US IMI, 20% BBgBarc Aggregate, 10% NCREIF-ODCE, 5% CPI + 5%, and 20% (60%MSCI ACWI Net/40% CITI WGBI).



# Glossary

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**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.

## Disclaimer

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