# **ECONOMIC OVERVIEW**

Inflationary pressures continued to abate in December, although whether the pace of decline is fast enough to put the Fed on hold in the near-term is anyone's guess. Fed Chair Powell and other FOMC members continued with hawkish rhetoric throughout the month, yet the 50 basis point hike in December did mark a pivot away from the four consecutive  $\frac{3}{4}$  point moves. The dramatic rise in interest rates in 2022 is no doubt beginning to seep into the broader economy and we would expect further economic weakening ahead.

Perhaps the sector hardest hit by higher interest rates has been housing. Although New Home Sales edged up +5.8% MoM in November, Housing Starts fell -0.5%, Building Permits dropped -11.2%, Existing Home Sales were down -7.7% and Pending Home Sales were off by -4.0%. 30-year mortgage rates began the year at just over 3.00%, and finished 2022 at nearly 7%. The S&P CoreLogic CS 20-City home price index dropped -0.52% during October, yet remains up +8.64% year over year. Meanwhile, the National Association of Realtors Monthly Housing Affordability Index fell -33% in 2022, through October

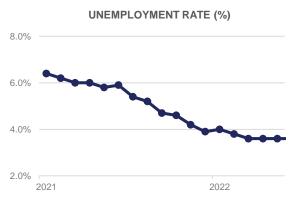
Prices remain the focus for both investors and Fed officials alike. Consumer prices edged up just +0.1% in November, while stripping out the volatile food & energy components, prices rose +0.2% on the month. On an annual basis, CPI is up +7.1%, while Core CPI has risen +6.0% (CPI topped out at +9.0% YoY in June). Wholesale prices were a tad stickier, with PPI up +0.3% MoM (+7.4% YoY) and Core PPI higher by +0.4% MoM (+6.0% YoY). The PCE Deflator edged higher on the month by +0.1% (Core PCE +0.2%), while annually it rose +5.5% (Core PCE +4.7%).

The 3<sup>rd</sup> reading for Q3 GDP came in stronger than expected at +3.2% (expectations were for +2.9%), with Personal Consumption rising +2.3%, versus estimates for a +1.7% rise. Most of the Purchasing Managers surveys in November and early December suggested a U.S. economy more firmly in contraction mode, with readings coming in generally between 45 and 50 across both the Services and Manufacturing Sectors.

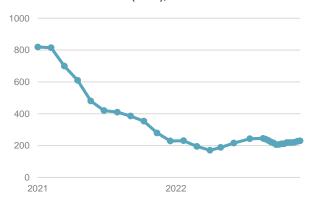
We begin 2023 much the same way we left 2022. The Fed has indicated that short-term rates will rise above 5.0%, the economy is cooling, and most forecasters we read are predicting a recession in the coming 6 to 12 months. Equity markets remain weak, while bond yields and the inverted yield curve are currently suggestive of a coming economic slowdown. In as much as few predicted accurately the events of 2022, we remain open to multiple outcomes. Inflation data, as well as economic growth measures should be closely monitored for evidence of future interest rate hikes. The good news is that employment remains strong for now, likely softening any future economic downturn.

### **KEY DATA POINTS**

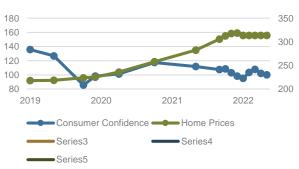
DATA POINT	CURRENT	FOR	PREVIOUS	FOR
Retail Sales ex. Autos MOM %	1.4%	Nov	1.3%	Oct
Housing Starts	1373k	Dec	1418k	Nov
Factory Orders MOM %	2.0%	Nov	1.1%	Oct
Leading Indicators MOM %	-1.0%	Dec	-0.8%	Nov
Unit Labor Costs	3.5%	Q3 2022	10.2%	Q2 2022
GDP QOQ (Annualized)	3.2%	Q3 2022	-0.6%	Q2 2022
Wholesale Inventories	0.8%	Nov	0.8%	Oct
MBA Mortgage Applications	-0.8%	Nov	-0.5%	Oct



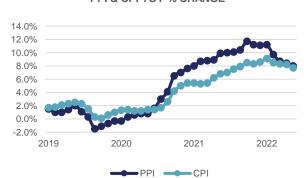
# 4-WK MOVING AVERAGE OF INITIAL CLAIMS (000S), SA



# CONSUMER CONFIDENCE LHS VS. HOME PRICES RHS



PPI & CPI YOY % CHANGE



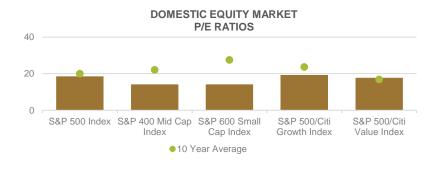


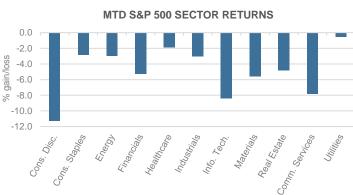
# DOMESTIC EQUITY

U.S. equities declined broadly in December with the benchmark S&P 500 Index losing -5.77% on the month to close at 3,839. Mid- and Small-Caps, as measured by the S&P 400 and 600 Indices followed suit, losing -5.54% and -6.72%, respectively. Growth stocks, as measured by the S&P 500 Growth Index returned -7.62%, led lower by Consumer Discretionary (-11.26%), Information Technology (-8.37%), and Communication Services (-7.84%). Value stocks, as measured by the S&P 500 Value Index, fared better, losing -3.93% on the month. Top performing sectors within the Value Index were largely defensive in nature, including Utilities (-0.53%), Healthcare (-1.91%), and Consumer Staples (-2.82%).

For the year, Large-Caps returned -18.13%, their worst showing since 2008 on the continued anxiety surrounding interest rates, inflation, and the overall direction of the U.S. economy. Mid- and Small-Caps outperformed their Large-Cap peers by a healthy margin. Mid-Caps returned -13.10%, outperforming by more than +500 basis points, while Small-Caps returned -16.15%, outperforming by just under +200 basis points. The outperformance of Mid- and Small-Caps has much to do with their overall sector composition skewing more towards Value versus Growth, and having lower starting valuations compared to many Mega-Cap stocks. As a whole, Value (-5.25%) handily outperformed Growth (-29.41%) on the year. 9 of 11 sectors posted negative returns, led by Growth oriented Communication Services (-39.89%), Consumer Discretionary (-37.03%), and Information Technology (-28.19%). Notable positive performers included Value driven Utilities, which gained +1.56%, and Energy, which returned a staggering +65.72% on the year.

Looking ahead to 2023, all eyes will be on the upcoming corporate earnings season, which is set to kick-off mid-month, for a real-time micro and macro view of the U.S. economy and more importantly the health of the consumer. With fears of recession in 2023 largely a consensus opinion, investors need to reconcile that macro view with the micro happenings at the company level. Earnings estimates for 2023 have come down significantly since the start of 2022, but fears of recession and further downward earnings revisions remain. The S&P 500 trades at a forward P/E of 16.8x, slightly below its 10-year average of 18.4x. On an equal-weighted basis, it trades at 15.1x, a bigger discount. Small-Caps trade at 13x forward earnings, well below their 10-year average of 20.9x. While certain Mega-Cap or Growth stocks may still be overvalued, the average S&P 500 stock, as well as Small-Caps look attractive. Earnings may still be revised lower, and the economy may tip into some sort of recession in 2023, but current valuations appear to reflect a lot of bad news at present levels.





### S&P 500 SECTOR RETURNS

SECTOR	MTD	QTD	YTD	1YR	3YR	5YR	%S&P 500
Consumer Discretionary	-11.26	-10.18	-37.03	-37.03	1.46	6.13	10%
Consumer Staples	-2.82	12.72	-0.62	-0.62	9.30	8.82	8%
Energy	-2.99	22.74	65.43	65.43	19.21	9.17	5%
Financials	-5.27	13.56	-10.57	-10.57	5.82	6.35	11%
Healthcare	-1.91	12.80	-1.95	-1.95	11.95	12.52	16%
Industrials	-3.00	19.18	-5.51	-5.51	8.31	7.32	9%
Information Technology	-8.37	4.74	-28.19	-28.19	11.60	15.78	26%
Materials	-5.56	15.05	-12.28	-12.28	10.47	7.44	3%
Real Estate	-4.83	3.82	-26.21	-26.21	1.80	5.87	3%
Communication Services*	-7.84	-1.38	-39.89	-39.89	-3.33	0.95	8%
Utilities	-0.53	8.64	1.56	1.56	6.31	9.57	3%

\*The S&P 500 Communication Services Sector was reclassified from the Telecommunications Sector on September 21st. 2018

# DOMESTIC EQUITY RETURNS

NAME	MTD	QTD	YTD	1YR	3YR	5YR
S&P 500 Index	-5.77	7.55	-18.13	-18.13	7.64	9.40
S&P 400 Mid Cap Index	-5.54	10.76	-13.10	-13.10	7.20	6.67
S&P 600 Small Cap Index	-6.72	9.16	-16.15	-16.15	5.74	5.82
S&P 500/Citi Growth Index	-7.62	1.44	-29.41	-29.41	7.53	10.26
S&P 500/Citi Value Index	-3.93	13.57	-5.25	-5.25	6.23	7.55

# S&P 500 FACTOR RETURNS

NAME	MTD	QTD	YTD	1YR	3YR	5YR
S&P 500 Quality	-4.96	11.38	-15.62	-15.62	8.33	9.66
S&P 500 Momentum	-3.34	13.51	-10.51	-10.51	12.13	12.20
S&P 500 Equal Weight	-4.71	11.64	-11.45	-11.45	9.01	9.10
S&P 500 High Beta	-8.54	8.96	-20.31	-20.31	12.19	9.96
S&P 500 Low Volatility	-1.72	11.27	-4.59	-4.59	5.49	8.58



# INTERNATIONAL EQUITY

International equities posted mixed results during the final month of 2022. Developed Markets (DM), as measured by the MSCI EAFE Index returned +0.11% during the month of December while Emerging Markets (EM), as measured by the MSCI EM Index fell -1.51%. International exposure provided some downside protection as the MSCI ACWI ex USA Index outperformed the S&P 500, losing only -0.75% during the month.

Beijing's early-December decision to undo tight COVID-19 restrictions was welcomed by Investors across the world. However, following a few weeks of positive market performance in China, Investors began taking profits as COVID-19 infections began to rise and hospitals became overwhelmed. The MSCI China Index gained +5.20% (in USD terms) during the month, but fell a staggering -21.72% for the year. Although China makes up nearly 1/3 of the MSCI EM Index, the broad EM Index still fell during the month. In USD terms, Taiwan fell -4.51%, India fell -4.73% and Mexico fell -5.70%.

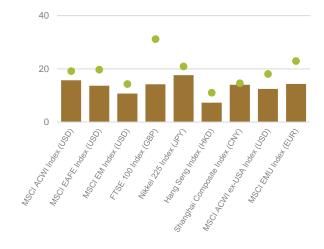
Regionally, the Eurozone, as measured by the MSCI EMU Index fell -3.55% in EUR terms but gained 0.16% in USD terms. European countries continued to be exposed to strong geopolitical risks while monetary conditions continued to deteriorate as the ECB signaled that it will continue with rate hikes in an effort to curb inflation. The key risk to Europe has mainly been their energy supply given that Russia has stopped the bulk of its flow to the region. Both prudent judgement to fill their gas reserves with liquefied natural gas from the US over the summer and a relatively mild autumn & start to the winter months has limited the risk of energy rationing which has reduced the probability of a severe recession.

To the east, the Bank of Japan stunned market participants with an unexpected change to a core tenant of its monetary policy. The central bank said that it would allow for 10-year bond yields to fluctuate by plus or minus 0.5 percentage points of its target of zero instead of the previous band of plus or minus 0.25 percentage points. This action caused the Yen to jump roughly 4 percentage points to about ¥131.2 against the US Dollar and sent stocks in Tokyo lower with the Nikkei 225 Index falling -6.57% in JPY terms and -0.60% in USD terms during the month of December.

At the sector level, five of the eleven MSCI ACWI ex U.S. sectors posted positive returns during the month with Communication Services leading the way, up +3.01%. For the year, only the Energy sector posted positive returns, gaining +9.08%.







● 10 Year Average

# MSCI ACWI EX U.S. SECTOR RETURNS

SECTOR	MTD	QTD	YTD	1YR	3YR	5YR	% of ACWI
Energy	-3.72	13.46	9.08	9.08	2.34	2.84	10%
Healthcare	0.92	14.06	-12.51	-12.51	1.94	5.12	8%
Utilities	0.06	10.47	-3.76	-3.76	3.89	7.02	6%
Information Technology	-5.84	13.47	-34.32	-34.32	3.49	5.27	9%
Materials	-1.28	16.52	-10.57	-10.57	6.37	3.92	8%
Financials	0.44	15.67	-6.67	-6.67	1.68	0.77	19%
Consumer Discretionary	-0.67	14.72	-21.42	-21.42	-3.05	-1.28	11%
Communication Services*	3.01	12.01	-21.31	-21.31	-4.12	-2.55	6%
Real Estate	-O.17	10.53	-20.38	-20.38	-10.96	-5.93	2%
Industrials	-0.81	17.34	-18.04	-18.04	1.09	1.87	12%
Consumer Staples	0.48	9.78	-11.58	-11.58	0.03	1.06	9%

### \*The MSCI ACWI Ex U.S. Communication Services Sector was reclassified on November 30th, 2018

### INTERNATIONAL EQUITY RETURNS

NAME	MTD	QTD	YTD	1YR	3YR	5YR
MSCI ACWI Index (USD)	-3.91	9.86	-17.96	-17.96	4.51	5.76
MSCI EAFE Index (USD)	0.11	17.40	-13.92	-13.92	1.44	2.12
MSCI EM Index (USD)	-1.51	9.62	-19.94	-19.94	-2.42	-1.10
FTSE 100 Index (GBP)	-1.49	8.68	4.57	4.57	3.12	3.23
Nikkei 225 Index (JPY)	-6.57	0.75	-7.38	-7.38	5.32	4.81
Hang Seng Index (HKD)	6.38	15.03	-12.56	-12.56	-8.38	-4.90
Shanghai Composite Index (CNY)	-1.84	2.32	-12.81	-12.81	2.85	1.04
MSCI ACWI ex-USA Index (USD)	-0.75	14.32	-15.57	-15.57	0.57	1.40
MSCI EMU Index (EUR)	-3.55	12.83	-11.70	-11.70	2.69	3.83
MSCI China Index (USD)	5.20	12.87	-21.72	-21.72	-7.34	-4.45
MSCI Canada Index (USD)	-4.90	6.03	-5.78	-5.78	7.34	6.53
MSCI EM ex-China (USD)	-4.27	7.98	-19.26	-19.26	0.00	0.35



# FIXED INCOME

On Wednesday, December 14th, the Federal Reserve increased the Federal Funds Target Rate by 50 basis points to 4.25% to 4.50%. This met market expectations for a hike in rates, but of a lesser magnitude than the recent spate of 75 basis point increases.

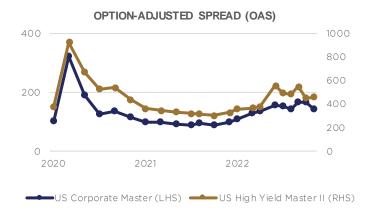
Even as the magnitude of interest rate increases tapered slightly, the Federal Reserve's expectations for future interest rate levels rose. The Fed's expectations for future inflation increased as well, even as we have experienced a recent reduction in price pressures.

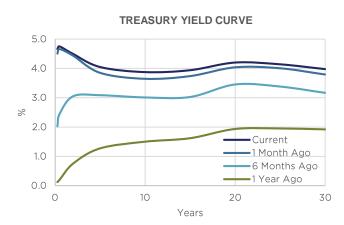
Yields across the Treasury curve moved broadly higher in December, reversing some of the decline experienced in November. The rising yields pushed bond prices lower, creating negative returns for all tracked indices except for Municipal Bonds and Emerging Market exposures. Bond returns for the year are in the red without exception, as interest rates moved up so significantly that coupon income could not help offset the negative price impact.

Global Treasury bonds logged the worst performance in December, followed by High Yield bonds due to slight spread widening impacting valuations. Investment grade bonds and U.S. Treasury bonds turned in very similar performance, down close to half a percent. Municipal bonds and Emerging Market bonds turned in positive performance in December. Municipal bonds performed the best for the year, the only index to avoid a double digit decline.

2023 begins with bonds offering their most attractive risk/return proposition in roughly fifteen years. The increase in inflation in 2022 caused global central banks to reverse course and implement more restrictive monetary policy through higher interest rates and declining bond purchases or Quantitative Tightening (QT).

The shape of the yield curve remains concerning, with short-term yields exceeding long-term yields. Historically, when the 3 month Treasury yield exceeds the 10 year Treasury yield (as it does now), that is a recessionary signal. The academic who created this recession indicator, Cam Harvey of Duke University, has said that this time may be different, perhaps the current signal is a false positive. Time will tell.





### U.S. TREASURY YIELDS

PERIOD	3MOS	1YR	5YR	10YR	20YR	30YR
Current	4.66	4.49	4.05	3.87	4.20	3.98
1 Month Ago	4.50	4.43	3.85	3.65	4.04	3.79
6 Months Ago	2.03	3.05	3.09	3.01	3.45	3.17
1 Year Ago	0.12	0.76	1.27	1.50	1.94	1.92

### CENTRAL BANK ACTIVITY

NAME	CURRENT	1 MTH AGO	6 MTHS AGO	1 YR AGO
Fed Funds Rate	4.50	4.00	1.75	0.25
Bank of Japan Target Rate	0.10	0.10	0.10	0.10
European Central Bank Rate	2.50	2.00	0.00	0.00
Bank of England Base Rate	3.50	3.00	1.25	0.25

### **FIXED INCOME RETURNS**

NAME	MTD	QTD	YTD	1YR	3YR	5YR
Bloomberg Barclays US Government Index	-0.50	0.72	-12.32	-12.32	-2.57	-0.06
Bloomberg Barclays US Agg Index	-0.45	1.87	-13.01	-13.01	-2.71	0.02
Bloomberg Barclays US Corporate Index	-0.44	3.63	-15.76	-15.76	-2.88	0.45
Bloomberg Barclays US Corporate High Yield Index	-0.62	4.17	-11.19	-11.19	0.05	2.31
Bloomberg Barclays EM USD Agg Index	0.85	6.59	-15.26	-15.26	-3.89	-O.41
Bloomberg Barclays Global Agg Treasuries USD Index	-1.62	0.07	-10.80	-10.80	-2.73	0.29
Bloomberg Barclays Municipal Index	0.29	4.10	-8.53	-8.53	-0.77	1.25



# ALTERNATIVE INVESTMENTS

Alternative investments were mainly negative for December but produced positive results overall for 2022. Commodities, as measured by the Bloomberg Commodity Index, finished the month down -2.80% but were up +13.75% for the year. Commodities were one of only 2 major asset classes, the other being cash, that produced gains in 2022. The strong performance was also in sharp contrast to global equities and bonds which finished the year deep in negative territory.

Gold continued its strong performance from November and finished the month up +3.14%. The soft metal rose +9.84% during the quarter, helped recently by hopes of a less hawkish Fed in 2023. It's flat performance for the year may be viewed somewhat disappointing as an inflation hedge, however the relative performance looks favorable compared to most other investments during the period.

The Russia-Ukraine War triggered a global energy crisis early in the year that still hasn't been fully resolved and has caused a shakeup in the global energy market. Oil had an extremely volatile year, with WTI crude oil rising +64.34% in the first six months of the year before declining -19.01% in the second half

The Russia-Ukraine War also influenced food commodity prices as Ukraine is an important grain producer and exporter. In addition to the reduced food supply from Ukraine, adverse weather conditions in Latin America, Southeast Asia, and the US also hurt wheat production. However, some of the agricultural crops gave up gains in the second half of the year, similar to oil.

China's U-turn in COVID policy is one of the biggest wildcards going into 2023 for commodities as China went from a Zero-COVID policy to economic re-opening in recent weeks. China is a major importer of oil and other commodity inputs so increased demand will have to be weighed against a potential rise in mass infections and the slowing global economic outlook.

Hedge funds had a relatively muted December in terms of performance, with five out of nine strategies tracked posting small, positive returns on average. For the year, Macro funds were the top performing strategies, up +3.77%. Convertible Arbitrage strategies were the worst performers, down -12.40% on average in 2022.

## **SPOT RATES**

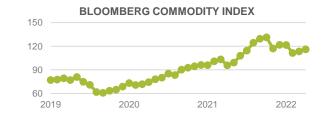
DESCRIPTION	CURRENT	1 MTH AGO	3 MTHS AGO	6 MTHS AGO	1 YR AGO
CAD / USD	1.36	1.35	1.36	1.29	1.27
JPY / USD	130.26	134.31	144.55	135.28	115.32
USD / GBP	1.21	1.23	1.13	1.21	1.35
USD / EUR	1.06	1.05	0.98	1.04	1.13

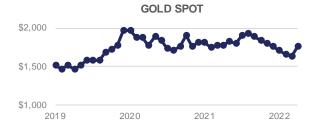
### **HEDGE FUNDS**

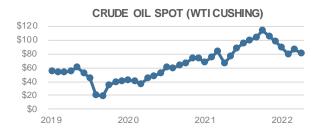
NAME	MTD	QTD	YTD	1YR	3YR	5YR
Global Hedge	-0.05%	0.17%	-4.40%	-4.40%	1.84%	1.34%
Convertible Arbitrage	-0.54%	2.54%	-12.40%	-12.40%	1.56%	1.97%
Equity Hedge (L/S)	-0.08%	1.68%	-3.20%	-3.20%	4.26%	2.55%
Equity Market Neutral	1.19%	1.32%	0.08%	0.08%	-1.00%	-1.57%
Event Driven	-0.20%	-2.01%	-7.27%	-7.27%	0.43%	-0.42%
Macro	0.08%	-2.17%	3.77%	3.77%	2.23%	1.72%
Merger Arbitrage	0.73%	2.41%	-0.39%	-0.39%	2.61%	1.21%
Relative Value Arbitrage	0.03%	2.35%	-7.70%	-7.70%	0.05%	1.07%
Absolute Return	0.49%	-0.30%	0.85%	0.85%	1.85%	1.89%

Note: Price Return, Returns as of 12/30/2022











### **COMMODITIES**

	MTD	QTD	YTD	1 Year	3 Year	5 Year
Dollar	-1.83%	-6.79%	6.23%	6.23%	1.71%	1.46%
всом	-2.80%	1.18%	13.75%	13.75%	11.72%	5.05%
Gold	3.14%	9.84%	-0.28%	-0.28%	6.33%	6.95%
WTI	-O.71%	3.54%	40.49%	40.49%	18.31%	11.46%
FTSENAREIT	-4.97%	4.14%	-24.95%	-24.79%	0.40%	4.55%



If you have any questions or comments, please feel free to contact any member of our investment team:

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S&P 500 Index (SPX) – Standard and Poor's 500 Index is a capitalization-weighted index of 500 stocks. The index is designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries.

S&P 500 Sector Indices (S5COND, S5CONS, S5ENRS, S5FINL, S5HLTH, S5INDU, S5INFT, S5MATR, S5TELS, S5UTIL, S5RLST) – The S&P 500 is broken down into eleven sub-indices according to the Global Industry Classification Standard (GICS) sectors. These eleven sectors include Consumer Discretionary, Consumer Staples, Energy, Financials, Health Care, Industrials, Information Technology, Materials, Communication Services, Utilities, and Real Estate

S&P 400 Mid Cap Index (MID) – Standard and Poor's Mid Cap 400 Index is a capitalization-weighted index, which measures the performance of the mid-range sector of the U.S. stock market.

S&P 600 Small Cap Index (SML) – Standard & Poor's Small Cap 600 Index is a capitalization-weighted index that measures the performance of selected U.S. stocks with a small market capitalization.

S&P 500/Citigroup Growth Index (SGX) – The S&P 500/Citigroup Growth Index is a market capitalization weighted index. All the stocks in the underlying parent index are allocated into value or growth. Stocks that do not have pure value or pure growth characteristics have their market caps distributed between the value & growth indices.

S&P 500/Citigroup Value Index (SVX) – The S&P 500/Citigroup Value Index is a market capitalization-weighted index. All the stocks in the underlying parent index are allocated into value or growth. Stocks that do not have pure value or pure growth characteristics have their market caps distributed between the value & growth indices.

MSCI AC World Index (MXWD) – The MSCI AC World Index is a free float-weighted equity index. The index includes both emerging and developed world markets.

MSCI EAFE Index (MXEA) – The MSCI EAFE Index is a capitalization-weighted index that monitors the performance of stocks from developed markets in Europe, Australia-Asia, and the Far East.

MSCI Emerging Market Index (MXEF) – The MSCI Emerging Market Index is a free-float weighted index that is designed to measure the equity performance of international emerging markets.

FTSE 100 Index (UKX) – The FTSE 100 Index is a capitalization weighted index of the 100 most highly capitalized companies traded on the London Stock Exchange. The equities use an investability quotient weighting in the index calculation.

Nikkei 225 Stock Average Index (NKY) – The Nikkei-225 Stock Average is a price-weighted average of 225 top-rated Japanese companies listed in the First Section of the Tokyo Stock Exchange.

Hang Seng Index (HSI) - The Hang Seng is a free-float capitalization-weighted index of selected companies from the Stock Exchange of Hong Kong. The components of the index are divided into four sub-indexes: Commerce and Industry, Finance, Utilities, and Properties.

Shanghai Stock Exchange Composite Index (SHCOMP) - The Shanghai Stock Exchange Composite Index is a capitalization weighted index. The index tracks the daily price performance of all A-shares and B-shares listed on the Shanghai Stock Exchange.

MSCI USA Extended ESG Focus Index - The Index is designed to maximize exposure to positive environmental, social and governance (ESG) factors while exhibiting risk and return characteristics similar to those of the MSCI USA Index.

MSCI EAFE Extended ESG Focus Index - The Index is designed to maximize exposure to positive environmental, social and governance (ESG) factors while exhibiting risk and return characteristics similar to those of the MSCI EAFE Index.

MSCI Emerging Markets Extended ESG Focus Index - The Index is designed to maximize exposure to positive environmental, social and governance (ESG) factors while exhibiting risk and return characteristics similar to those of the MSCI Emerging Markets Index.

MSCI ACWI ex USA Index (MXWDU) – The MSCI ACWI ex USA Index is a free-float weighted index.

MSCI ACWI ex USA Sector Indices - The MSCI ACWI ex USA Index is broken down into eleven sub-indices according to the Global Industry Classification Standard (GICS) sectors. These eleven sectors include Consumer Discretionary, Consumer Staples, Energy, Financials, Health Care, Industrials, Information Technology, Materials, Communication Services, Utilities, and Real Estate.

MSCI EMU Index (MXEM) - The MSCI EMU (European Economic and Monetary Union) Index is a free-float weighted equity index.

Bloomberg Barclays Global Treasuries USD Hedged Index (LGTRTRUH) – The Bloomberg Barclays Global Treasury Index tracks fixed-rate, local currency government debt of investment grade countries. The index represents the treasury sector of the Global Aggregate Index and contains issues from 37 countries denominated in 24 currencies.

Bloomberg Barclays Municipal Bond Index (LMBITR) – The Bloomberg Barclays Municipal Bond Index covers the USD denominated long-term tax exempt bond market. The index has four main sectors: state and local general obligation bonds, revenue bonds, insured bonds, and pre-refunded bonds.

Bloomberg Barclays U.S. Government Index -Bloomberg Barclays US Government Bond Index is compromised of the US Treasury and US Agency Indices. The index includes US dollardenominated, fixed-rate, nominal US Treasuries and US agency debentures (securities issued by US government owned or government sponsored entities, and debt explicitly guaranteed by the US government). Bloomberg Barclays EM Hard Currency Aggregate Index (LG20TRUU) - The Bloomberg Barclays Emerging Markets Hard Currency Aggregate Index is a hard currency Emerging Markets debt benchmark that includes USD-denominated debt from sovereign, quasisovereign, and corporate EM issuers.

Bloomberg Barclays U.S. Aggregate Bond Index (LBUSTRUU) - The Bloomberg Barclays US Aggregate Bond Index is a broad-based benchmark that measures the investment grade, US dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, MBS (agency fixed-rate and hybrid ARM pass-through), ABS and CMBS (agency and non-agency).

Bloomberg Barclays U.S. Corporate Index (LUACTRUU) - The Bloomberg Barclays US Corporate Bond Index measures the investment grade, fixed-rate, taxable corporate bond market. It includes USD denominated securities publicly issued by US and non-US industrial, utility and financial issuers.

Bloomberg Barclays U.S. Corp High Yield Index (LFTR ML U.S. Corporate Index (COAO) – The Bloomberg Barclays US Corporate High Yield Bond Index measures the USD denominated, high yield, below-investment grade fixed-rate corporate bond market.

S&P Green Bond Select Index (SPGRSLLT) - The S&P Green Bond Select Index is a market value-weighted subset of the S&P Green Bond Index that seeks to measure the performance of green-labeled bonds issued globally, subject to stringent financial and extra-financial eligibility criteria.

ML U.S. Corporate Index (COAO) – The Merrill Lynch U.S. Corporate Index tracks the performance of U.S. dollar denominated investment grade corporate debt publicly issued in the U.S. domestic market.

ML U.S. High Yield Index (HOAO) – The Merrill Lynch U.S. High Yield Index tracks the performance of U.S. dollar denominated below investment grade corporate debt publicly issued in the U.S. domestic market.

FTSE NAREIT All REITs Index (FNAR) – The FTSE NAREIT All REITs Index is a free float adjusted market capitalization-weighted index that includes all tax qualified REITs listed in the NYSE, AMEX, and NASDAQ National Market.

Bloomberg Commodity Index (BCOM) – Bloomberg Commodity Index (BCOM) is calculated on an excess return basis and reflects commodity futures price movements. The index rebalances annually weighted 2/3 by trading volume and 1/3 by world production and weightcaps are applied at the commodity, sector and group level for diversification. Roll period typically occurs from 6th-10th business day based on the roll schedule.

U.S. Dollar Index (DXY) - The U.S. Dollar Index (USDX) indicates the general int'l value of the USD. The USDX does this by averaging the exchange rates between the USD and 6 major world currencies. The ICE US computes this by using the rates supplied by some 500 banks.

HFRX Global Hedge Fund Index (HFRXGL) – The HFRX Global Hedge Fund Index is designed to be representative of the overall composition of the hedge fund universe. It is comprised of all eligible hedge fund strategies.

HFRX Convertible Arbitrage Index (HFRXCA) – The HFRX Convertible Arbitrage Index is designed to reflect the general performance of strategies in which the investment thesis is predicated on realization of a spread between related instruments in which one or multiple components of the spread is a convertible fixed income instrument.

HFRX Distressed Securities Index (HFRXDS) – The HFRX Distressed Securities Index is designed to reflect the general performance of strategies focused on corporate fixed income instruments, primarily on corporate credit instruments of companies trading at significant discounts to their value at issuance of obliged (par value) at maturity as a result of either formal bankruptcy pro

HFRX Macro Index (HFRXM) – The HFRX Macro Index reflects the general performance of strategies in which the investment process is predicated on movements in underlying economic variables and the impact these have on equity, fixed income, hard currency, and commodity markets.

HFRX Equity Hedge Index (HFRXEH) – The HFRX Equity Hedge Index is designed to reflect the general performance of strategies that maintain both long and short positions in primarily equity and equity derivative securities. A wide variety of investment processes can be employed to arrive at an investment decision, including both quantitative and fundamental techniques. Strategies can be broadly diversified or narrowly focused.

HFRX Equity Market Neutral Index (HFRXEMN) – The HFRX Equity Market Neutral Index is designed to reflect the general performance of strategies that employ sophisticated quantitative techniques of analyzing price data to ascertain information about future price movement and relationships between securities.

HFRX Event Driven Index (HFRXED) – The HFRX Event Driven Index reflects the general performance of strategies that maintain positions in companies currently or prospectively involved in corporate transactions of a wide variety including, but not limited to, mergers, restructurings, financial distress, tender offers, shareholder buybacks, debt exchanges, security issuance, or other capital structure adjustments.

HFRX Merger Arbitrage Index (HFRXMA) – The HFRX Merger Arbitrage Index reflects the general performance of strategies which employ an investment process primarily focused on opportunities in equity and equity related instruments of companies which are current engaged in a corporate transaction.

HFRX Relative Value Arbitrage Index (HFRXRVA) – The HFRX Relative Value Arbitrage Index reflects the general performance of strategies that maintain positions in which the investment thesis is predicated on realization of a valuation discrepancy in the relationship between multiple securities.

### **Economic Data Sources:**

PPI & CPI - Bureau of Labor Statistics

**Unemployment Rate** - Bureau of Labor Statistics

**Consumer Confidence** – Conference Board

SP/Case-Shiller Composite 20 - Case-Shiller

Industrial Production - Federal Reserve

Capacity Utilization - Federal Reserve

Retail Sales - U.S. Census Bureau

**Housing Starts** - U.S. Department of Commerce

Factory Orders - U.S. Census Bureau

Leading Indicators - Conference Board

**Unit Labor Costs** - Bureau of Labor Statistics

GDP - Bureau of Economic Analysis

Wholesale Inventories - U.S. Census Bureau

**MBA Mortgage Applications -** Mortgage Bankers Association

4-Week Moving Average of Initial Claims, SA - Bureau of Labor Statistics

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