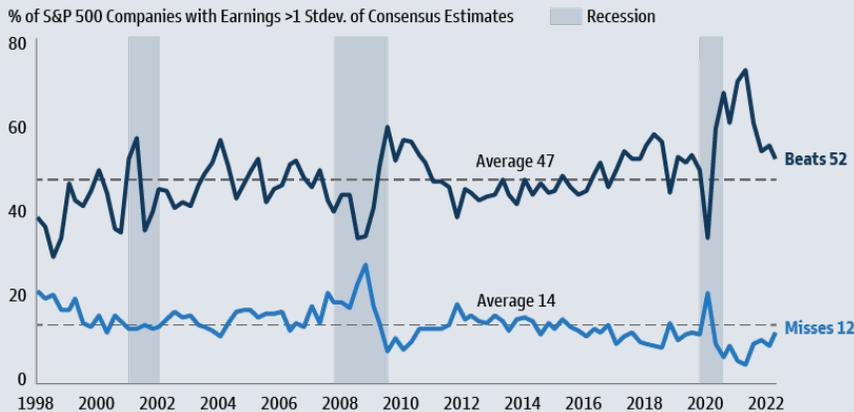


# MARKET MONITOR

## Chart of the Week: Yearning for Earnings



## EQUITIES

US earnings results have generally remained resilient in 2Q 2022 despite a strong US dollar weighing on revenues. With 56% of companies having reported, 52% have beaten consensus earnings estimates by more than one standard deviation, above the historical average of 47%. While corporate earnings strength may moderate given higher inflation and rates, we continue to favor companies that can maintain profitability and stable earnings growth.

Source: Goldman Sachs Global Investment Research. As of July 29, 2022.

## MARKET SUMMARY

**GLOBAL EQUITIES:** Global equities jumped last week as markets anticipated that a US 2Q GDP contraction may foreshadow an end to the Fed's aggressive hiking cycle. In the US, the S&P 500 ended the week up 4.28% as a majority of companies reporting have beat consensus earnings estimates. In Europe, the STOXX 600 climbed to a seven-week high and rose 2.97% with positive news from earnings offsetting the gloomy energy outlook. The FTSE 100 also digested the US GDP print favorably and closed the week up 2.06%.

**COMMODITIES:** Oil prices fluctuated last week amidst a further reduction in Russian gas supply, rising recession concerns, and relatively stable demand. WTI and Brent crude ended last week higher at \$98.62 and \$110.01 per barrel, respectively, on the back of US supply constraints. Gold rallied last week following the Fed's 75 bps rate hike, ultimately finishing up 2.09%.

**FIXED INCOME:** Global sovereign yields fell last week as expectations for aggressive central bank policies softened. The 10-Year US Treasury yield fell -14 bps to 2.64% on the back of the Fed's rate hike and negative US GDP growth while the 2-Year yield fell -9 bps to 2.90%, continuing the 2s10s spread inversion. In Germany, the 10-Year Bund fell to two-month lows as recession fears grew over the EU's emergency plans to curb gas usage.

**FX:** The US dollar depreciated -0.40% against a basket of currencies as investors digested the Fed's rate hike, Chair Powell's dovish comments, and the US economy's second consecutive quarter of contractions. In Europe, the euro and pound sterling appreciated to \$1.0220 and \$1.2175, respectively, despite intensifying energy supply concerns fanning recession fears and expectations of a less aggressive ECB.

## ECONOMIC SUMMARY

**POLICY:** The Fed made its second consecutive 75 bps interest rate hike last week, bringing the funds rate to 2.25-2.50% and marking the fastest tightening since the Fed battled double-digit inflation in the 1980s. The FOMC indicated that future hikes will be determined on a meeting-by-meeting basis, as inflation remains elevated and recent indicators of spending and production have softened while job gains have been robust and unemployment has remained low.

**INFLATION:** The Fed's preferred inflation measure, core PCE, rose 4.8% YoY in June, above consensus expectations and the prior print of 4.7%. In Europe, Euro area flash HICP rose 8.9% YoY in July, above consensus expectations of 8.7%, on the back of broad-based pressures from energy, food, industrial goods, and services. We expect price pressures to remain elevated throughout the year, with particular focus on the supply of Russian gas.

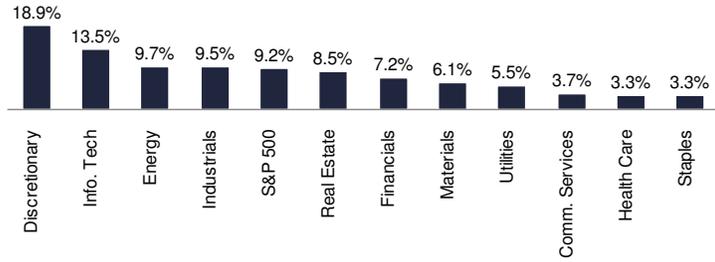
**GROWTH:** The US economy shrank by more than expected to -0.9% annualized in 2Q 2022 on the back of a decrease in inventories and slowing spending and investment. The print marked the second consecutive negative GDP quarter, meeting a shorthand definition of recession. However, strength in other recession indicators, such as employment, may prevent the National Bureau of Economic Research from officially declaring a recession during the first two quarters of 2022. In the Euro area, 2Q GDP grew 0.7% YoY, above consensus expectations of 0.1% and reflecting a stronger-than-expected post-Omicron rebound. We expect to see a modest downturn as growth moderates in the second half of the year.

**LABOR:** US Initial Jobless Claims fell 5k to 256k for the week ending July 23, breaking a three-week streak of increases.

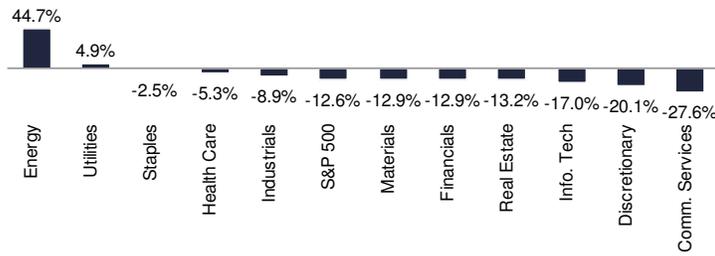
## MARKET WATCH

### S&P 500 INDEX SECTOR RETURNS

MONTH-TO-DATE, AS OF 07/29/22

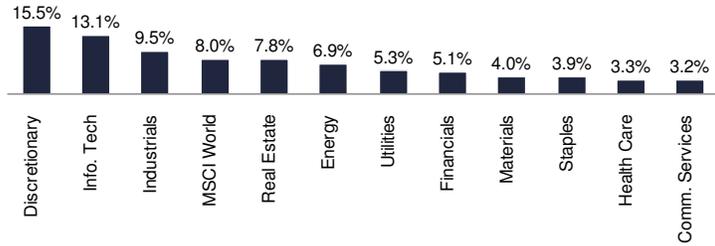


YEAR-TO-DATE, AS OF 07/29/22

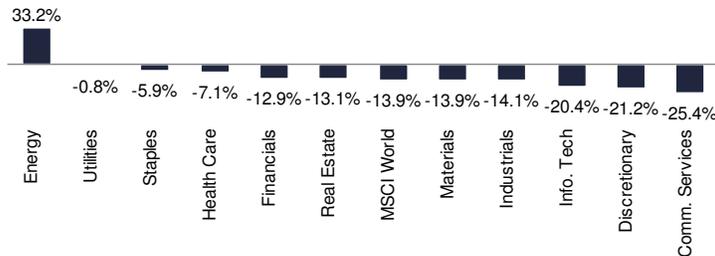


### MSCI WORLD INDEX SECTOR RETURNS

MONTH-TO-DATE, AS OF 07/29/22



YEAR-TO-DATE, AS OF 07/29/22



## ECONOMIC WATCH

Monday, August 1	Tuesday, August 2	Wednesday, August 3	Thursday, August 4	Friday, August 5	Critical Future Events
Euro area Manuf. PMI (Cons: 49.6, Prior: 49.6) UK Manuf. PMI (Cons: 52.2, Prior: 52.2) Euro area Unempl. (Cons: 6.6%, Prior: 6.6%) ISM Manuf. (Cons: 52.0, Prior: 53.0)	US JOLTS (Cons: 11.000M, Prior: 11.254M)	Euro area Composite PMI (Cons: 49.4, Prior: 49.4) US Services PMI (Cons: -, Prior: 47.0) ISM Non-Manuf. (Cons: 53.5, Prior: 55.3)	BoE Rate Decision (Cons: 1.50%, Prior: 1.25%) US IJC (Cons: 255k, Prior: 256k)	Nonfarm Payrolls (Cons: 250k, Prior: 372k) US Unempl. (Cons: 3.6%, Prior: 3.6%)	ECB Meeting – Sep 8 BoE Meeting – Sep 15 FOMC Meeting – Sep 20-21

Source: Bloomberg and Goldman Sachs Asset Management. For style performance, Large, Mid, and Small for US Equity refer to the Russell 1000, Russell Midcap, and Russell 2000 indices, respectively. Value refers to companies with lower price-to-book ratios and lower expected growth values, and Growth refers to higher price-to-book ratios and higher forecasted growth values. For US Fixed Income, Government, Corporate, and High Yield refer to the Bloomberg Treasury, Bloomberg Corporate Credit, and Bloomberg High Yield indices, respectively. Short, Intermediate, and Long refer to the Short, Intermediate, and Long segments of their respective curves. For European Fixed Income, Government, Corporate, and High Yield refer to the Bloomberg Euro Treasury Index, the Bloomberg Euro Corporate Index, and the Bloomberg Euro High Yield Index, respectively. Quality returns refers to the credit quality of asset classes ranging from Government, highest quality, to High Yield, lowest quality. Since August 24, 2021, the Barclays indices are branded "Bloomberg indices". Please see end disclosures for footnotes. **Past performance does not guarantee future results, which may vary.**

### Style Performance

US EQUITY SIZE & STYLE RETURNS

Month-to-Date (as of 07/29/22)			Year-to-Date			
Value	Core	Growth		Value	Core	Growth
6.63%	9.31%	12.00%	Large	-7.08%	-13.58%	-19.44%
8.61%	9.87%	12.24%	Medium	-9.02%	-13.83%	-22.56%
9.68%	10.44%	11.20%	Small	-9.30%	-15.43%	-21.55%

MSCI WORLD SIZE & STYLE RETURNS

Month-to-Date (as of 07/29/22)			Year-to-Date			
Value	Core	Growth		Value	Core	Growth
4.12%	7.90%	11.82%	Large	-7.37%	-13.80%	-20.27%
6.83%	8.17%	9.84%	Medium	-11.73%	-16.29%	-22.50%
7.86%	9.11%	10.43%	Small	-9.83%	-15.51%	-21.39%

US FIXED INCOME MATURITY AND QUALITY RETURNS

Month-to-Date (as of 07/29/22)			Year-to-Date			
Short	Intermed.	Long		Short	Intermed.	Long
0.79%	1.34%	2.67%	Government	-3.43%	-4.54%	-19.15%
1.51%	2.37%	4.81%	Corporate	-4.17%	-6.81%	-19.03%
4.43%	5.87%	6.75%	High Yield	-5.71%	-8.51%	-19.10%

EUROPEAN FIXED INCOME MATURITY AND QUALITY RETURNS

Month-to-Date (as of 07/29/22)			Year-to-Date			
Short	Intermed.	Long		Short	Intermed.	Long
0.69%	3.16%	8.30%	Government	-1.65%	-5.86%	-16.44%
1.68%	5.54%	12.03%	Corporate	-2.26%	-9.09%	-16.44%
5.08%			High Yield	-10.09%		

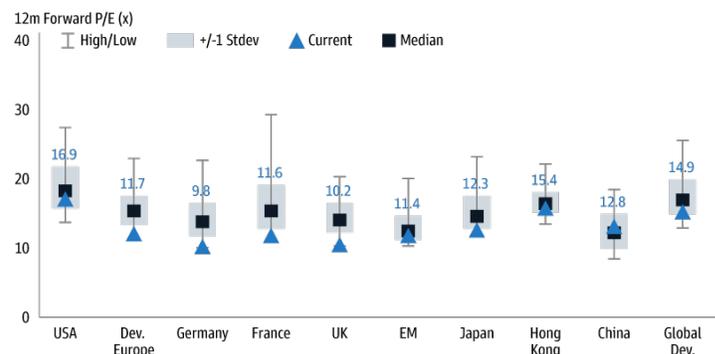
**WEEKLY MARKET RECAP**

INDEX RETURNS				
	1 WEEK	MTD	QTD	YTD
<b>EQUITIES</b>				
S&P 500	4.28%	9.22%	9.22%	-12.58%
DJ Industrial Average	2.97%	6.82%	6.82%	-8.60%
Russell 2000	4.35%	10.44%	10.44%	-15.43%
Russell Midcap	4.35%	9.87%	9.87%	-13.83%
STOXX Europe 50 (€)	3.10%	7.47%	7.47%	-11.28%
STOXX Europe 600 (€)†	2.97%	7.74%	7.74%	-8.39%
MSCI EAFE Small Cap	2.13%	6.62%	6.62%	-19.45%
FTSE 100 (£)	2.06%	3.67%	3.67%	2.66%
DAX (€)	1.74%	5.48%	5.48%	-15.11%
FTSE MIB (€)	5.63%	5.68%	5.68%	-15.04%
CAC 40 (€)†	3.73%	8.98%	8.98%	-7.95%
SWISS MKT (CHF)	0.45%	3.77%	3.77%	-11.08%
TOPIX (¥)	-0.79%	3.72%	3.72%	-1.23%
Hang Seng (HKD)	-2.20%	-7.32%	-7.32%	-11.78%
MSCI World	3.63%	7.97%	7.97%	-13.94%
MSCI China Free†	-4.10%	-8.92%	-8.92%	-15.11%
MSCI EAFE	2.11%	4.99%	4.99%	-15.22%
MSCI EM	0.42%	-0.16%	-0.16%	-17.61%
MSCI Brazil (BRL)	4.74%	4.90%	4.90%	1.31%
MSCI India (INR)	2.60%	9.78%	9.78%	-0.96%
MSCI Russia (RUB)	0.00%	0.00%	0.00%	-100.00%
<b>FIXED INCOME</b>				
Bloomberg Aggregate	0.64%	2.44%	2.44%	-8.16%
Bloomberg Euro Aggregate	1.40%	1.57%	1.57%	-17.95%
Bloomberg US High Yield	1.53%	5.90%	5.90%	-9.12%
Bloomberg Euro High Yield (€)	1.19%	5.08%	5.08%	-10.09%
Bloomberg Muni Aggregate	0.92%	2.64%	2.64%	-6.58%
Bloomberg TIPS	2.04%	4.53%	4.53%	-5.57%
JPM EMBI Gbl. Divers.	2.43%	2.89%	2.89%	-18.01%
JPM GBI-EM Gbl. Divers.	2.13%	0.29%	0.29%	-14.28%
<b>OTHER</b>				
DJ US Real Estate	4.97%	8.87%	8.87%	-12.93%
FTSE EPRA/NAREIT Dvlpd. Ex-US	2.34%	6.32%	6.32%	-15.07%
S&P GSCI	4.45%	-0.04%	-0.04%	35.74%
Alerian MLP *	8.03%	12.41%	12.41%	23.69%
US Dollar Index	-0.40%	1.15%	1.15%	10.86%
VIX	-7.38%	-25.71%	-25.71%	23.87%

COMMODITIES				
	07/29/22	06/30/22	03/31/22	12/31/21
WTI Oil (\$/barrel)	\$98.62	\$105.76	\$100.28	\$75.21
Brent Oil (\$/barrel)	\$110.01	\$114.81	\$107.91	\$77.78
Gold (\$/oz)	\$1781.80	\$1827.50	\$1954.00	\$1831.00
Natural Gas (\$/mmBtu)	\$8.23	\$5.42	\$5.64	\$3.73

CURRENCIES				
	07/29/22	06/30/22	03/31/22	12/31/21
Euro (\$/€)	1.0220	1.0481	1.1070	1.1386
Pound (\$/£)	1.2175	1.2182	1.3135	1.3535
Japanese Yen (¥/\$)	133.34	135.57	121.61	115.03
Swiss Franc (CHF/€)	0.9729	0.9995	1.0213	1.0378
Chinese Yuan Renminbi (CNY/\$)	6.7442	6.6993	6.3460	6.3797

RATES & SPREADS				
	07/29/22	06/30/22	03/31/22	12/31/21
<b>RATES</b>				
Fed Funds Target	2.50%	1.75%	0.50%	0.25%
Secured Overnight Financing Rate *	2.28%	1.50%	0.29%	0.05%
ECB Depo Rate	-0.00%	-0.50%	-0.50%	-0.50%
3-Month US Dollar Libor	2.79%	2.29%	0.96%	0.21%
US Treasuries 2-Year	2.90%	2.92%	2.28%	0.73%
US Treasuries 10-Year	2.64%	2.97%	2.32%	1.50%
US Treasury 2-10 Slope	-0.26%	0.05%	0.04%	0.77%
German Bunds 2-Year	0.28%	0.65%	-0.07%	-0.62%
German Bunds 10-Year	0.82%	1.34%	0.55%	-0.18%
Japanese Govt Bonds 10-Year	0.18%	0.23%	0.22%	0.07%
UK Gilts 10-Year	1.86%	2.23%	1.61%	0.97%
Swiss Govt Bonds 10-Year	0.44%	1.07%	0.60%	-0.14%
French OATs 10-Year	1.38%	1.92%	0.98%	0.20%
Italian BTPs 10-Year	3.02%	3.26%	2.04%	1.17%
Spanish Bonos 10-Year	1.92%	2.42%	1.44%	0.56%
<b>SPREADS</b>				
HY Corp. Spread (bps)	465	569	321	283
Bank Loan Spread (bps) *	603	658	449	439
IG Corp. Spread (bps)	143	156	115	92
EMD Spread (bps)	548	554	409	376

**Global Equity Valuations**


Goldman Sachs Asset Management and Bloomberg as of close of trading on June 30, 2022. Chart data shows next 12 month P/E ratio from July 2012 to the current period. 12m forward P/E(x) refers to price-to-earnings ratio for the next 12 months, which is a valuation measure applied to respective broad equity indices. Please see additional disclosures at the end of this presentation.

Weekly Market Recap Notes:

All data is denominated in USD unless noted otherwise.

† Data is released weekly, as of Monday.

If data displays an asterisk:

\* Data is lagged by 1 day.

\*\* Data is lagged by 2 days.

Source: Goldman Sachs Asset Management. **Past performance does not guarantee future results, which may vary. Please see end disclosures for footnotes.**

## IMPORTANT INFORMATION

### Page 1 Chart of the Week Notes:

The chart shows the percentage of S&P 500 companies that have beaten and missed consensus earnings per share (EPS) estimates by one standard deviation or more. Latest data reflects 2Q 2022 earnings results as of July 29, 2022. "2Q" refers to quarter two. "Stdev." refers to standard deviation, which is a measure of the dispersion of a set of data from its mean.

### Page 1 Market Summary Notes:

"US 2Q GDP" refers to the advance estimate of US Gross Domestic Product growth for 2Q, year-over-year. "Fed" refers to the Federal Reserve. "WTI" stands for West Texas Intermediate crude oil, a common US benchmark for oil prices. "Brent" is a global benchmark for oil prices worldwide. "Bps" refers to basis points, which are one hundredth of a percent. "2s10s spread inversion" refers to the 2-Year Treasury yield being higher than the 10-Year Treasury yield. "EU" refers to the European Union. "Dovish" refers to more accommodative monetary policy. "ECB" refers to the European Central Bank.

### Page 1 Economic Summary Notes:

"FOMC" refers to the Federal Open Market Committee. "Core PCE" refers to the US Personal Consumption Expenditures Price Index excluding food and energy, year-over-year. "YoY" refers to year-over-year. "Euro area flash HICP" refers to the Euro area Harmonized Index of Consumer prices, year-over-year. "Euro area 2Q GDP" refers to Euro area Gross Domestic Product growth for 2Q, year-over-year. "US Initial Jobless Claims" refers to the number of people filing to receive unemployment insurance benefits for the week ending July 23.

### Page 2 Style Performance Notes:

For US Fixed Income, Government, Corporate, and High Yield refer to the Bloomberg US Treasury, the Bloomberg US Corporate Credit, and the Bloomberg US High Yield indices, respectively. For European Fixed Income, Government, Corporate, and High Yield refer to the Bloomberg Euro Treasury Index, the Bloomberg Euro Corporate Index, and the Bloomberg Euro High Yield Index, respectively. Short, Intermediate, and Long refer to the Short, Intermediate, and Long segments of their respective curves. Quality returns refers to the credit quality of asset classes ranging from Government, highest quality, to High Yield, lowest quality. Since August 24, 2016, the Barclays indices are co-branded "Bloomberg Barclays indices".

### Page 2 Economic Watch Notes:

"Euro area Manuf. PMI" refers to Markit Eurozone Manufacturing Purchasing Managers' Index. "UK Manuf. PMI" refers to the United Kingdom Manufacturing Purchasing Managers' Index. "Euro area Unempl." refers to the Euro area Unemployment Rate. "ISM Manuf." refers to the US Institute for Supply Management's Manufacturing Index. "US JOLTS" refers to the US Job Openings and Labor Turnover Survey. "Euro area Composite PMI" refers to the Markit Eurozone Composite Purchasing Managers' Index. "US Services PMI" refers to the Markit US Services Purchasing Managers' Index. "ISM Non-Manuf." refers to the US Institute for Supply Management's Non-Manufacturing Index. "BoE Rate Decision" refers to the Bank of England's interest rate decision. "US IJC" refers to the number of people filing to receive unemployment insurance benefits for the week ending July 30. "Nonfarm Payrolls" refers to US Nonfarm Payrolls. "US Unempl." refers to the US Unemployment Rate. "ECB Meeting" refers to the European Central Bank's meeting. "BoE Meeting" refers to the Bank of England's Monetary Policy Committee meeting. "FOMC Meeting" refers to the Federal Reserve's Federal Open Market Committee meeting.

### Page 3 Global Equity Valuations Chart Notes:

Earnings are forward looking Bloomberg estimates of operating earnings per share over the next four quarters, which may exclude one-time extraordinary gains and losses. Please see index disclosures for additional definitions on the indices.

USA is represented by the MSCI USA Index, Dev. Europe is represented by MSCI Europe Index, Germany is represented by MSCI Germany Index, France is represented by MSCI France Index, UK is represented by MSCI UK Index, EM is represented by MSCI EM Index, Japan is represented by MSCI Japan Index, Hong Kong is represented by MSCI Hong Kong Index, China is represented by MSCI China Index, Global Dev. is represented by MSCI World Index.

### Risk Considerations

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## Index Benchmarks

### Equities

The **S&P 500 Index** is the Standard & Poor's 500 Composite Stock Prices Index of 500 stocks, an unmanaged index of common stock prices. The **Dow Jones Industrial Average Index** is a price-weighted average of 30 actively traded blue-chip stocks. The **Russell 1000 Index** is a market-cap weighted index that measures the performance of the 1,000 largest companies in the Russell 3000 Index. The **Russell Mid Cap Index** measures the performance of the 800 smallest companies in the Russell 1000 Index, which represent approximately 30% of the total market capitalization of the Russell 1000 Index. The **Russell 2000 Index** is an unmanaged index of common stock prices that measures the performance of the 2000 smallest companies in the Russell 3000 Index. The **MSCI EAFE Index** is a free-float weighted equity index, which covers developed markets countries in Europe, Australasia, Israel, and the Far East. The **MSCI Emerging Markets (EM) Index** is a free float-adjusted market capitalization index that captures large and mid-cap representation across five EM countries in Latin America. The **STOXX Europe 600 Index** is derived from the STOXX Europe Total Market Index (TMI) and is a subset of the STOXX Global 1800 Index. With a fixed number of 600 components, the STOXX Europe 600 Index represents large, mid and small capitalization companies across 18 countries of the European region. The **Japan TOPIX Index** is a capitalization-weighted index of the largest companies and corporations that are found in the First Section of the Tokyo Stock Exchange.

The **German DAX** is a capitalization-weighted blue chip stock market index consisting of the 30 major German companies trading on the Frankfurt Stock Exchange. The **Shanghai Composite** is a market capitalization weighted index of all A-shares and B-shares that trade on the Shanghai Stock Exchange. **Euro Stoxx 50 Index**, Europe's leading Blue-chip index for the Eurozone, provides a Blue-chip representation of supersector leaders in the Eurozone. The **Financial Times Stock Exchange (FTSE) 100 Index** is an index of the 100 companies listed on the London Stock Exchange with the highest market capitalization. **FTSE MIB Index** is composed of 40 Italian equities and seeks to replicate the broad sector weights of the Italian stock market. **CAC 40 Index** is composed of the 40 largest equities listed in France. **SWISS Market Index** is composed of the largest and most liquid stocks traded on the Geneva, Zurich, and Basel Stock Exchanges. **Hang Seng Composite Index** covers about 95% of the total market capitalization of companies listed on the Main Board of the Hong Kong Stock Exchange. The **MSCI World Index** is a broad global equity index that represents large and mid-cap equity performance across 23 developed markets countries. It covers approximately 85% of the free float-adjusted market capitalization in each country. **CSI 300 Index** covers 300 stocks traded in the Shanghai and Shenzhen stock exchanges. The **MSCI China Index** captures large and mid cap representation across China H shares, B shares, Red chips, P chips and foreign listings (e.g. ADRs). With 461 constituents, the index covers about 85% of this China equity universe. Currently, the index also includes Large Cap A shares represented at 5% of their free float adjusted market capitalization. **MSCI Brazil Index** covers about 85% of the total market capitalization of the Brazilian equity universe. **MSCI India Index** covers about 85% of the total market capitalization of the Indian equity universe. **MSCI Russia Index** covers about 85% of the free float-adjusted market capitalization in Russia. The **CBOE Volatility Index (VIX)** is a leading measure of market expectations of near-term volatility conveyed by S&P 500 Index option prices.

#### Fixed Income

The **Bloomberg US Aggregate Bond Index** represents an unmanaged diversified portfolio of fixed-income securities, including US Treasuries, investment-grade corporate bonds, and mortgage-backed and asset-backed securities. The **Bloomberg US High-Yield Index** covers the USD-denominated, non-investment grade, fixed-rate, taxable corporate bond market. The **Bloomberg US Aggregate Municipal Bond Index** is an unmanaged broad-based total return index composed of approximately 8,000 investment grade, fixed rate, and tax-exempt issues, with a remaining maturity of at least one year. The **Bloomberg US High Yield Municipal Bond Index** (formerly the Lehman Brothers High Yield Municipal Bond Index) is an unmanaged index made up of bonds that are noninvestment grade, unrated, or rated below Ba1 by Moody's Investors Service with a remaining maturity of at least one year. The **J.P. Morgan Emerging Markets Bond Index (EMBI Global Index)** is an unmanaged market capitalization Index that tracks total returns for USD-denominated debt instruments issued by emerging market sovereign and quasi-sovereign issuers. The **J.P. Morgan Government Bond Index-Emerging Markets Global Diversified (GBI-EM Global Index)** is a market capitalization Index that tracks the performance of local currency debt issued by emerging market governments. **Bloomberg Euro Aggregate Index** refers to the Bloomberg EuroAgg Index. The index measures the market of investment grade, euro-denominated, fixed-rate bond market, including treasuries, government-related, corporate and securitized issues. Inclusion is based on currency denomination of a bond and not country of risk of the issuer. **Bloomberg Euro High Yield Index** refers to the Bloomberg Euro High Yield 3% Issuer Capped Index. The index measures the of non-investment grade, fixed-rate corporate bonds denominated in USD. Inclusion is based on the currency of issue, and not the domicile of the issuer. The index excludes emerging market debt.

#### Other

The **S&P 500 Utilities Sector** comprises those companies included in the S&P 500 that are classified as members of the GICS® utilities sector. The **FTSE EPRA/NAREIT Developed ex US Index** is a subset of the FTSE EPRA/NAREIT Developed Index and is designed to track the performance of listed real estate companies and REITS.

The **S&P GSCI Commodity Index** is a composite index of commodity sector returns, representing an unleveraged, long-only investment in commodity futures that is broadly diversified across the spectrum of commodities. The **S&P 500 Consumer Staples Index** comprises those companies included in the S&P 500 that are classified as members of the GICS® consumer staples sector. The **USD Index** tracks the value of the USD relative to 6 major foreign currencies. The **Housing Starts** refers to US Housing Starts.

#### Commodities

**WTI Oil** refers to West Texas Intermediate (WTI) Crude Oil, a land-locked crude, delivered via pipeline into Cushing, Oklahoma. **Brent Oil** refers to Brent crude oil, a waterborne crude oil produced in the North Sea. **OPEC** refers to the Organization of the Petroleum Exporting Countries. The **Gold Spot** price is quoted as US Dollars per Troy Ounce.

#### Currencies

**Euro (\$/€)** refers to the Euro's exchange rate with the Dollar. **Pound (\$/£)** refers to the British Pound's exchange rate with the US Dollar. **Japanese Yen (¥/\$)** refers to the US Dollar's exchange rate with the Japanese Yen. **Swiss Franc (CHF/€)** refers the Euro's exchange rate with the Swiss Franc. **Chinese Yuan Renminbi (CNY/\$)** refers to the US Dollar's exchange rate with the Chinese Yuan Renminbi.

#### Rates

The **federal funds rate** is the interest rate at which depository institutions lend balances at the Federal Reserve to other depository institutions overnight. The **LIBOR** is the USD-denominated London Interbank Offered Rate, and is the average of interest rates estimated by each of the leading banks in London that it would be charged were it to borrow from other banks. The **2-Year Treasury** is a US Treasury debt obligation that has a maturity of 2 years. The **10-Year Treasury** is a US Treasury debt obligation that has a maturity of 10 years. The **2-10 Treasury Slope** is the difference between the 10-Year Treasury and the 2-Year Treasury. The **Core-Periphery** spreads refers to the spread between sovereign debt yields of core European countries and peripheral European countries. The **German Bunds 2-Year** is a German debt obligation that has a maturity of 2 years. The **German Bunds 10-Year** is a German debt obligation that has a maturity of 10 years. The **Japanese Govt Bonds 2-Year** is a Japanese debt obligation that has a maturity of 2 years. The **Japanese Govt Bonds 10-Year** is a Japanese debt obligation that has a maturity of 10 years. The **UK Gilts 10-Year** is a UK debt obligation that has a maturity of 10 years. The **Swiss Govt Bonds 10-Year** is a Swiss debt obligation that has a maturity of 10 years. The **French OATs 10-Year** is a French debt obligation that has a maturity of 10 years. The **Italian BTPs 10-Year** is an Italian debt obligation that has a maturity of 10 years. The **Spanish Bonos 10-Year** is a Spanish debt obligation that has a maturity of 10 years.

#### Spreads

**High Yield (HY) Corporate Spread** is the Bloomberg US Corporate High Yield Average Option Adjusted Spread (OAS), which measures the spread between the US Treasury yield curve and the Bloomberg US Corporate High Yield curve. The **Bank Loan Spread** is the daily discount margin (3-year life) of the Credit Suisse Leveraged Loan Index, which is designed to mirror the investable universe of the USD-denominated leveraged loan market. The **Investment Grade (IG) Corporate Spread** is the Bloomberg US Aggregate Corporate Average OAS, which measures the spread between the US Treasury yield curve and the Bloomberg US Corporate Average curve. The **EMD Spread** is the J.P. Morgan EMBI Global Diversified Sovereign Spread, which measures the spread between the US Treasury yield curve and the J.P. Morgan EMBI Global Diversified Sovereign curve.

It is not possible to invest in an unmanaged index.

Although certain information has been obtained from sources believed to be reliable, we do not guarantee its accuracy, completeness or fairness. We have relied upon and assumed without independent verification, the accuracy and completeness of all information available from public sources.

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