

CHIEF INVESTMENT OFFICE

## Market Volatility Chart Book

March 2020

The environment that has unfolded is generational and has sparked concerns last experienced during the 2008 global financial crisis. This “crisis” environment includes the integration of three widespread components: Health, Financial, and Economic. We are still in the early stages of assessing the developments in each of these components and data remains very fluid. Policy responses are being developed to address these areas head on and are likely to include further new containment and stimulus measures in the coming weeks. The financial and economic impact of the serious health responses continues to evolve and likely to materialize into the third quarter. Adjustments are likely to be made to the overall level of growth, the size and duration of a contraction in the economy, and the ultimate impact on corporate profits. While this evolves, the capital markets should continue to attempt to price in various scenarios and the magnitude of effect of the policy responses. This is why we believe market bottoms occur over time. It is a process that unfolds as concerns shift from the unknown to stability and then ultimately toward recovery. Market timing is not a successful strategy, in our view. In times of stress disciplined plans for potential portfolio rebalancing can help maintain diversification and prepare for the ultimate recovery phase as the policy responses take root.

In the following pages of the **CIO Market Volatility Chart Book**, we outline specific data related to the COVID-19 outbreak globally, the potential economic effects, the latest policy responses from governments and central banks, an analysis of investor sentiment and, lastly, a message for investors regarding portfolio considerations.

# Important Information

All data, projections and opinions are as of the date of this report and subject to change. Data as of 3/17/2020 and subject to change.

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Please see important disclosure information at the end of this presentation.

# Historic Dislocations in Financial Markets

## What currently happened in the markets?

- The 11-year bull market has recently come to an end, with the fastest move to a bear market in history.
- Bond yields fell to their lowest levels on record.
- Volatility as measured by Chicago Board Options Exchange's CBOE Volatility Index (VIX) spiked to historically high levels.

## What has caused this current market volatility?

- COVID-19 contagion fears and the concern of a sharp economic contraction.
- Saudi-Russia split has led to a collapse in oil prices sparking credit fears.

## What is the potential effect from this volatility?

- Global economic growth is expected to slow to the weakest pace since the 2008 financial crisis with increasing probability of a material economic contraction.
- Globally, policy makers and governments are responding with emergency containment policies and major fiscal and monetary support.

## What should investors consider?

- Ensure investment plans are aligned with your goals and objectives.
- Maintain a diversified portfolio and have rebalancing plans ready to participate in a potential recovery.
- Consider adding to higher-quality investments across and within asset classes as rebalancing plans are implemented. This could also include thematic investments that may benefit from new long-term growth developments in specific sectors and industry groups.

Source: Chief Investment Office as of March 2020.

**Past performance is no guarantee of future results. Please refer to Appendix for Asset Class Proxies, Index Definitions and Important Disclosures.**

# Historic And Rapid Dislocations In Financial Markets

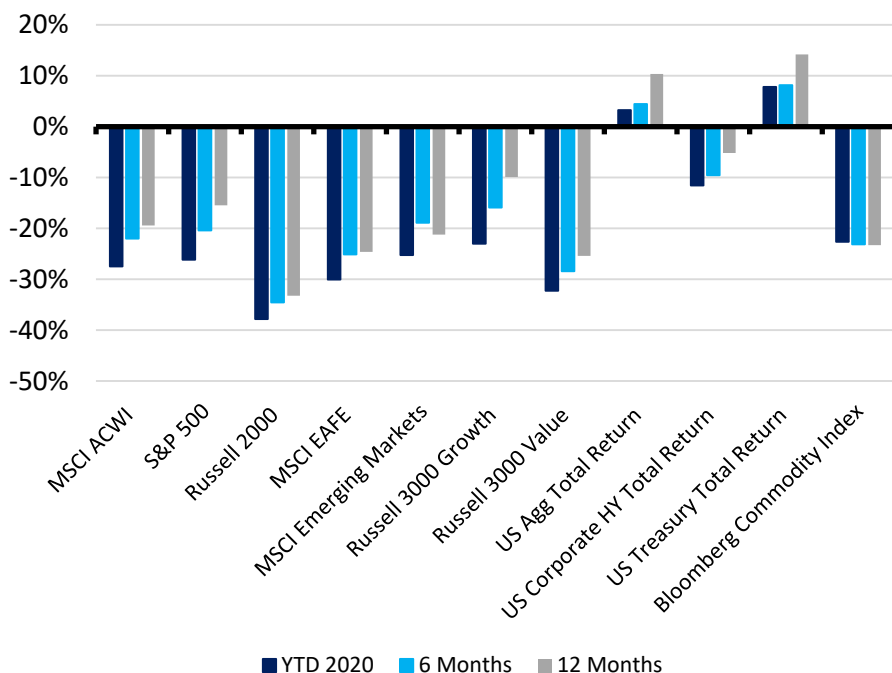
Equity market returns and speed of decline stand out.

Equity markets have now given up all of their gains over the past year while higher-quality fixed income has outperformed.

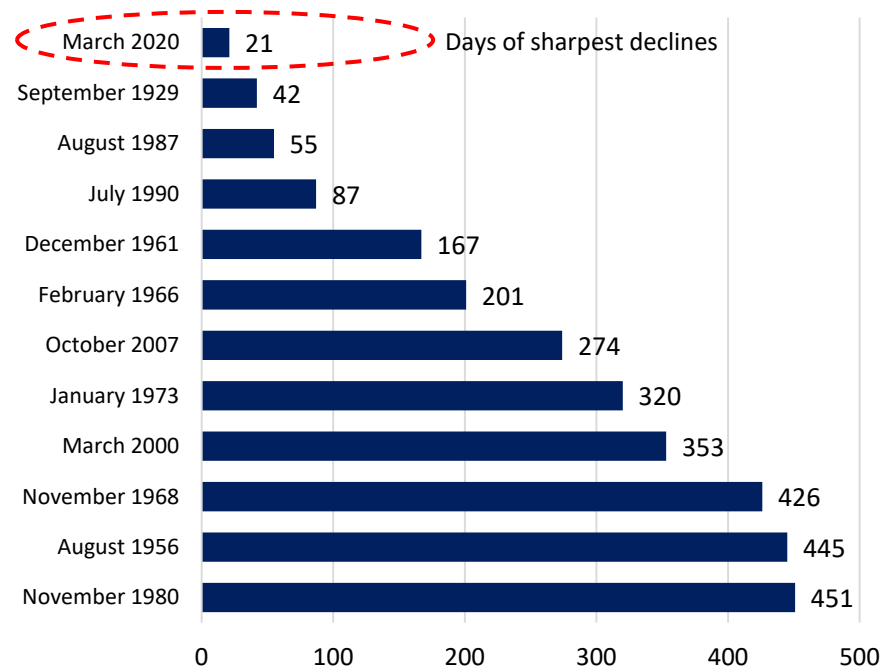
The S&P 500 is now down about 30% from its all time high, officially in bear market territory, and this selloff has been one of the sharpest declines in history.

## Return by Time Period

Percent (%)



## Days from Market Peak to Bear Market (-20%)



Source: Bloomberg data as of March 16, 2020.

Indexes are unmanaged and do not take into account fees or expenses. It is not possible to invest directly in an index.

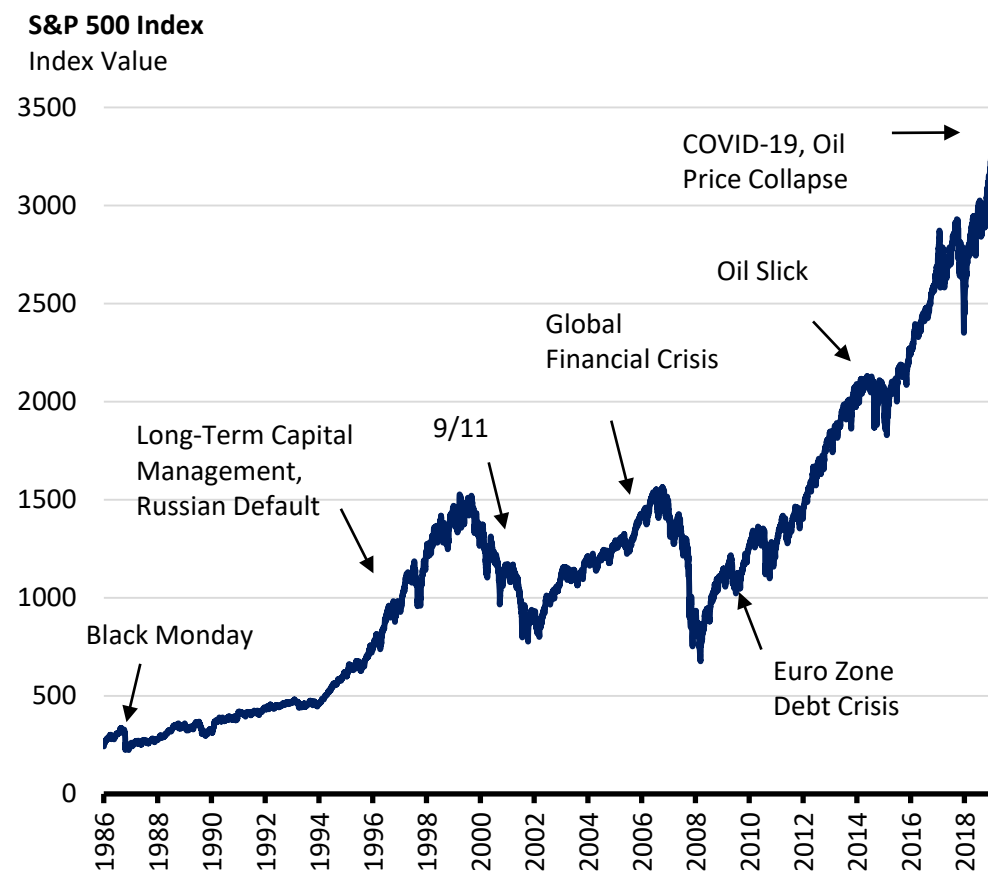
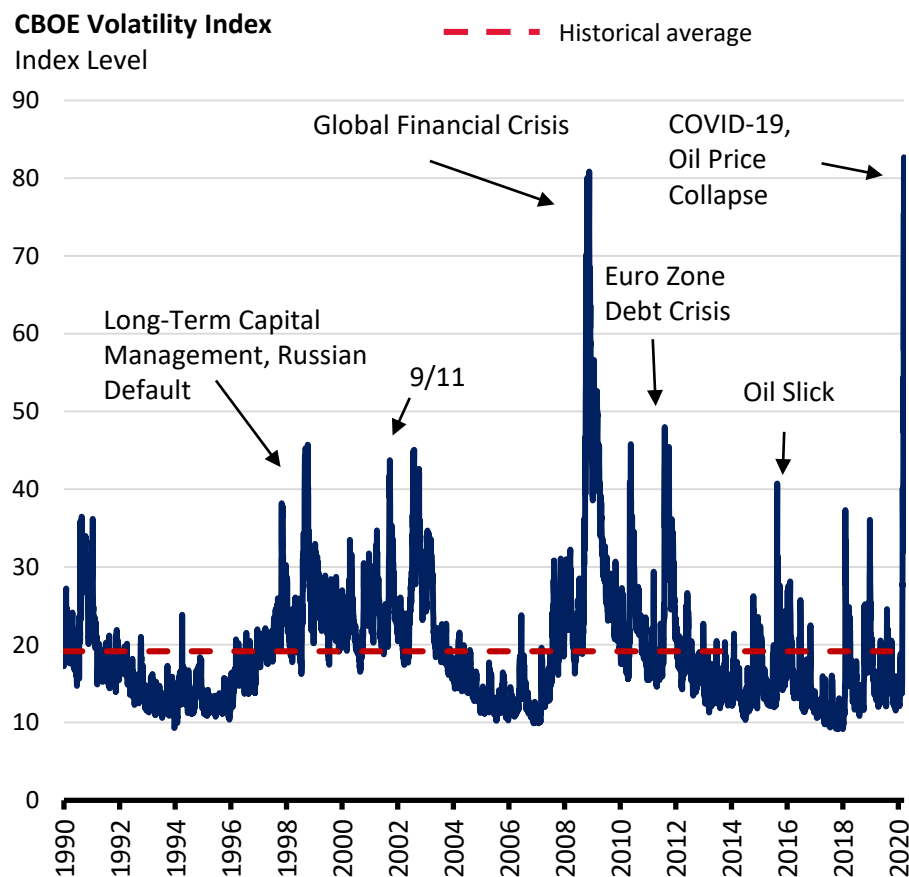
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# Historic And Rapid Dislocations In Financial Markets

Volatility spikes, while unnerving, offer potential opportunities to invest at better prices.

Volatility, as measured by the VIX index, has spiked- but it usually falls rapidly.

Equity returns typically recover after volatility spikes.



Source: Bloomberg data as of March 16, 2020.

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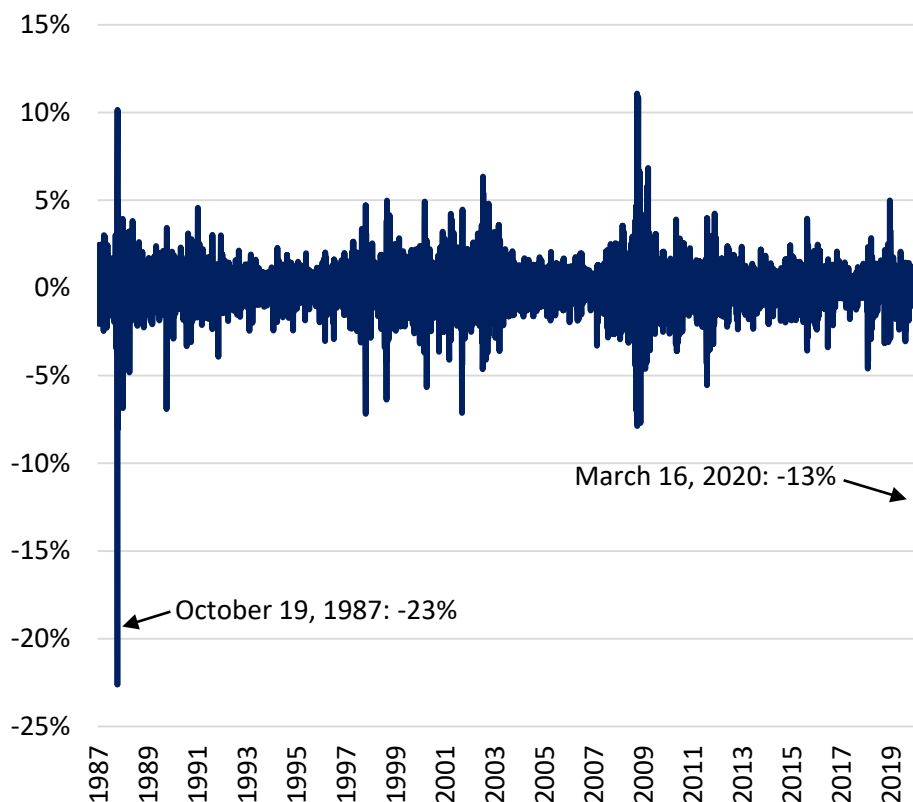
# A Day for the Record Books

Extraordinary policy responses, including monetary and fiscal stimulus, are being put in place to help the recovery.

The Dow Jones Industrial Average experienced its worst day since 1987 amid growing fears of the effect of the COVID-19 outbreak on the economy.

## Dow Jones Industrial Average

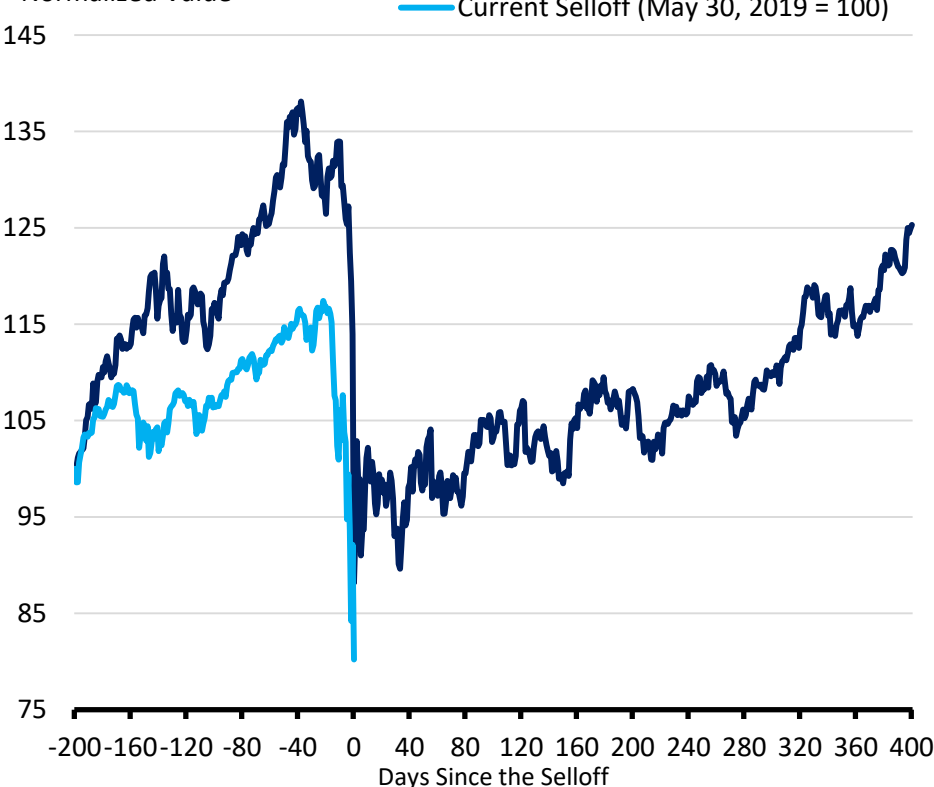
Daily Percent Change



History shows that equities can recover from even the most severe market selloffs.

## Dow Jones Industrial Average

Normalized Value\*



\*adjusting values measured on different scales to a notionally common scale, often prior to averaging.

Source: Chief Investment Office and Bloomberg data as of March 16, 2020.

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# Time In The Market Matters

Missing the 10 best days in any decade has negatively affected equity returns.

- Indiscriminately pulling back from the market due to the market volatility could negatively impact your investment and financial plan.
- In the 2010s, investors who had missed the 10 best days of returns would have only realized 95% gains vs. 190% for the full decade.
- Going back to the 1930s, if an investor had missed the ten best days of each decade, their return would have been 91% versus 14,962% (including the ten best days).

**Excluding the 10 best days of performance per decade for the S&P 500 drastically cuts down returns.**

Decade	Price Return	Excluding Best 10D Per Decade
1930	-42%	-79%
1940	35%	-14%
1950	257%	167%
1960	54%	14%
1970	17%	-20%
1980	227%	108%
1990	316%	186%
2000	-24%	-62%
2010	190%	95%
Since 1930	14,962%	91%

Source: BofA Global Research. Data as of February 14, 2020.

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# THE CRISES BACKGROUND AND CONTEXT



# Market Selloff Catalyst One: COVID-19 Outbreak

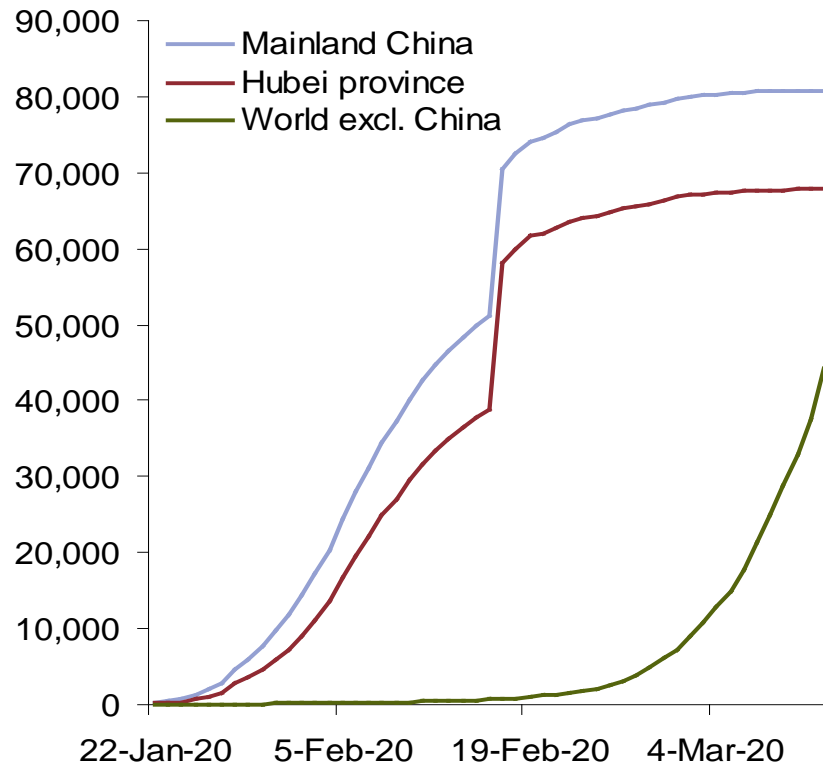
Market volatility has risen with new global COVID-19 cases surpassing the new cases of this virus in China.

The COVID-19 (Coronavirus) pandemic began in December 2019 with the emergence of the severe acute respiratory syndrome Coronavirus 2 (SARS-CoV-2) in Wuhan, Hubei province in China. The total number of cases confirmed in China surged from late January, but had begun to slow by mid-February.

As China's new cases daily rate slowed, a rising number of global cases — led by Korea, Italy and Iran — was accompanied by a pickup in market volatility. On February 24, new non-China cases surpassed those within China, alongside the first day of 3%-plus declines for the S&P 500 equity index.

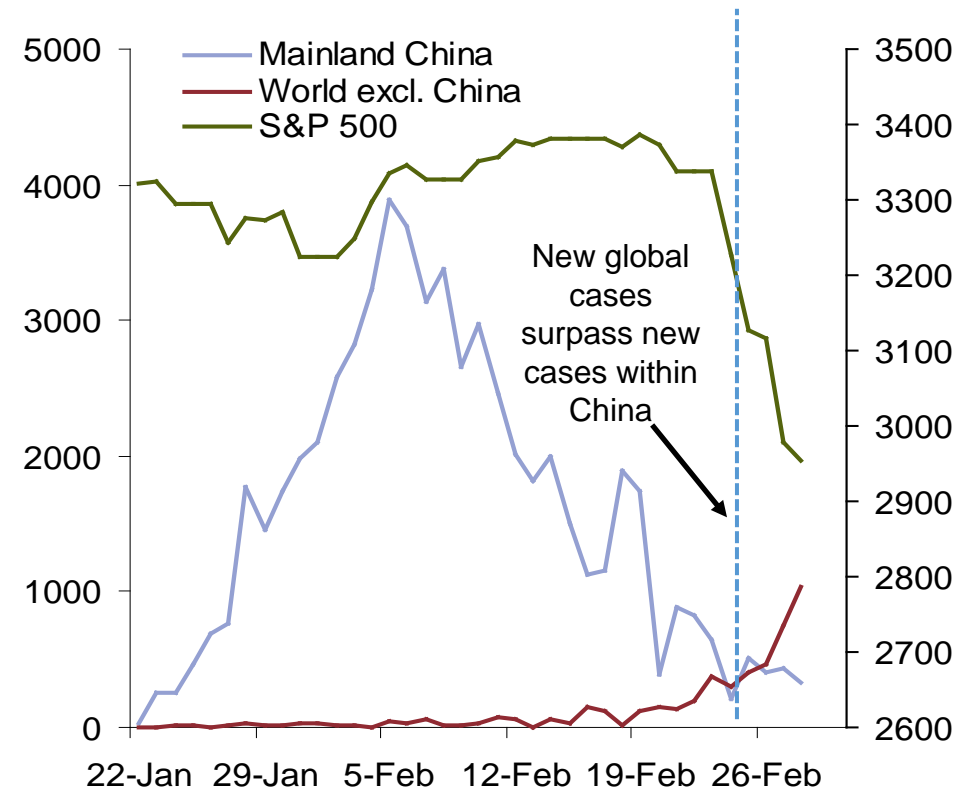
**Total COVID-19 cases**

Total number



**New daily COVID-19 cases**

Total number

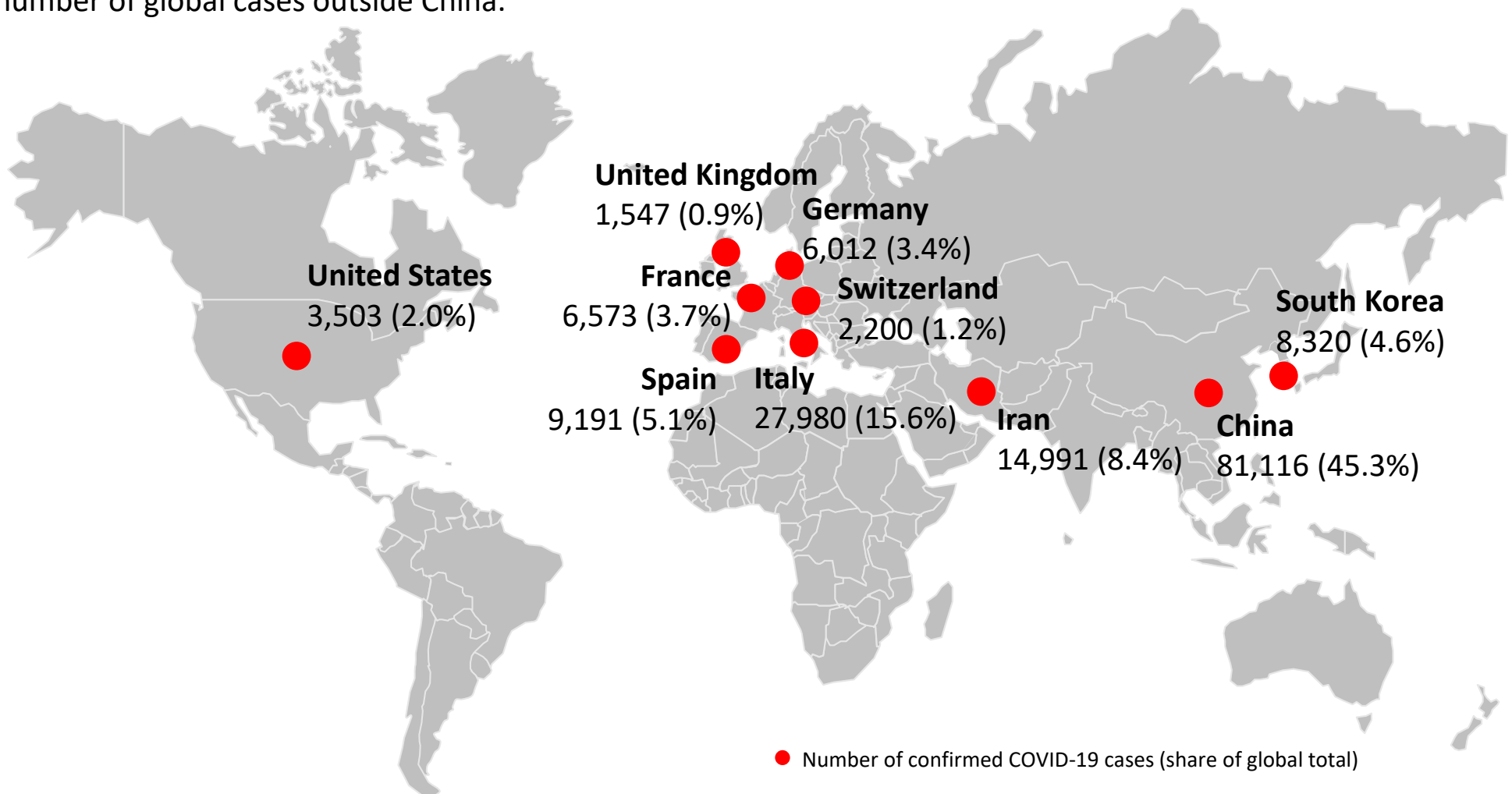


Source: World Health Organization: left side as of March 12, 2020; right side as of February 28, 2020. February 17, 2020 data for mainland China new daily cases interpolated due to change in calculation methodology. Indexes are unmanaged and do not take into account fees or expenses. It is not possible to invest directly in an index.

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# Global View of the COVID Outbreak

The COVID-19 epidemic has now spread to over 140 countries across Asia, Europe, North America, South America, the Middle East and Africa, but the more than 179,000 cases counted globally so far remain highly concentrated. However, China itself still accounts for around 50% of the global total, and nine countries (Italy, Iran, Korea, France, Spain, Germany, Switzerland, the U.S. and the UK) account for around 80% of the total number of global cases outside China.



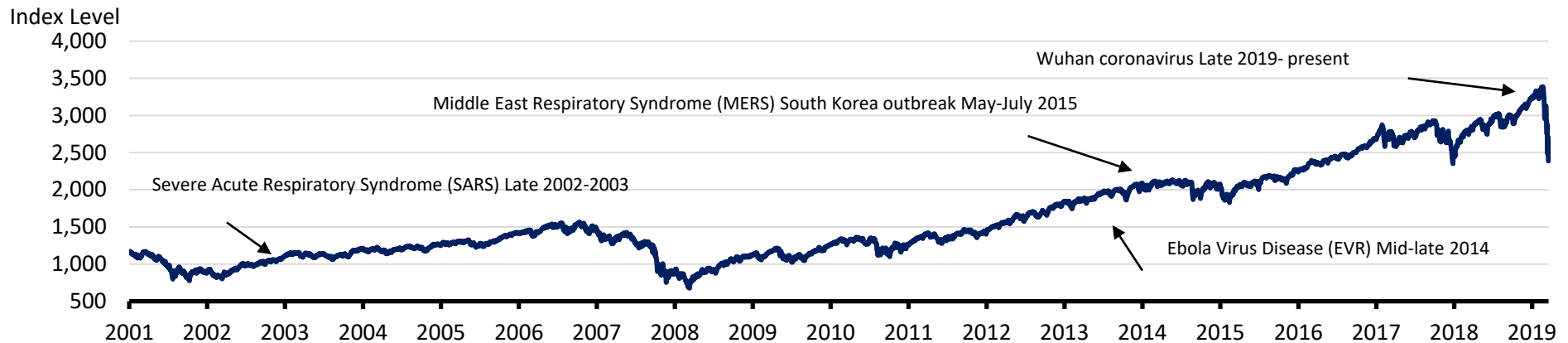
Source: World Health Organization and Chief Investment Office as of March 17, 2020.

# Market Selloff Catalyst One: COVID-19 Outbreak (cont'd)

## Market reactions to previous epidemics.

Events such as epidemics are rarely baked into base-case assumptions and introduce uncertainty for the financial markets, often leading to broad selling of risk assets and to a considered “flight to safety”. The severity and duration of the epidemic can increasingly pressure stocks and bond yields, but historically asset prices have typically reverted back to the fundamentals. Comparison to previous epidemics should be limited in that the current pandemic has been global in nature.

### S&P 500 Index



What	Where	Cases	Economic Effect	Definitions below	Markets During*	Markets After (3 months**)
<b>Severe Acute Respiratory Syndrome (SARS) Late 2002-2003</b>	17 countries, mostly Southeast Asia	8,098	Greater effect in China-weaker consumer spending and growth but bounce back in subsequent quarters	S&P 500 10Y Treasury WTI – Crude Oil VIX	-14% -68bsp 48% 50%	24% -42bps -17% -39%
<b>Middle East Respiratory Syndrome (MERS) South Korea outbreak May-July 2019</b>	27 countries, mainly Arabian Peninsula and South Korea	2,494 globally	South Korea gross domestic product (GDP) decline of 0.5% in 2Q2015, 20% decline in retail sales from May through July, central bank rate cut of 25bps.	S&P 500 10Y Treasury WTI – Crude Oil VIX	-4% -36bps -23% 67%	-2% -9bps -2% -15%
<b>Ebola Virus Disease (EVR) Mid-late 2014</b>	10 countries, mainly West Africa	28,652	Negligible affects to U.S growth	S&P 500 10Y Treasury WTI – Crude Oil VIX	-7% -48bps -22% 139%	7% -42bps -43% -15%
<b>Wuhan Coronavirus (COVID-19) Late 2019 – present</b>	60+ countries, throughout Asia, Europe and U.S.	150,000+	2020 Global GDP expectations cut to 2.2%	S&P 500 10Y Treasury WTI – Crude Oil VIX	-30% -120bps -55% 583%	TBD

Sources: Chief Investment Office; Center for Disease Control; World Health Organization; Johns Hopkins CSSE; Statistics Korea; BofA Global Research. Data as of March 16, 2020. \*From peak/trough  
\*\* From equity trough. 10-Year Treasury; WTI-West Texas Intermediate; CBOE VIX, bps= basis points.

Past performance is no guarantee of future results. Please refer to appendix for asset class proxies and index definitions

# Market Selloff Catalyst Two: Oil Price Slump

Russian concern over rising U.S. market share causes breakdown in talks with Organization of the Petroleum Exporting Countries (OPEC) and a slump in oil prices.

The oil price fall of 2014-2016 led Russia to join forces with OPEC to manage surging global supply. But after two rounds of production cuts in 2018 and 2019, Russia rejected further cuts in March 2020 given concerns over rising U.S. market share. Saudi Arabia in turn raised its production target in an effort to force Russia back to negotiations, causing a plunge in prices.

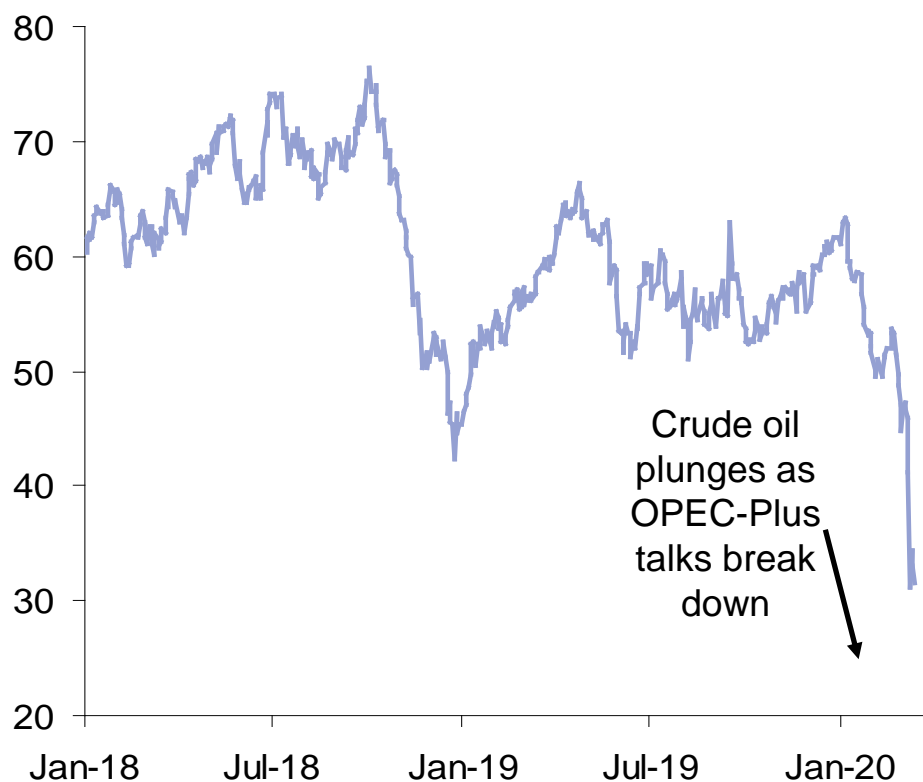
## Recent developments: Russia and OPEC

Date	Event
<b>November 30, 2016</b>	Russia participates in oil production cuts alongside OPEC member countries as part of a new OPEC-Plus alliance.
<b>December 7, 2018</b>	OPEC-Plus agrees to reduce oil production by 1.2 million barrels per day (mbpd).
<b>December 6, 2019</b>	OPEC-Plus cuts oil output further to a new reduction target of 2.1 mbpd.
<b>March 5, 2020</b>	OPEC proposes additional cuts of 1.5 mbpd in response to slower demand amid the COVID-19 outbreak.
<b>March 6, 2020</b>	Russia declines to participate in the additional cuts proposed by OPEC, causing a 10% one-day fall in the WTI crude price.
<b>March 7, 2020</b>	Saudi Arabia announces plans to raise output above 10 mbpd in April from a February-end level of 9.7 mbpd. WTI crude falls by 24.6% on the next trading day.

The current oil collapse leaves prices at their lowest levels since early 2016, down 50% from their January peak. A supply glut on top of slower global demand due to the COVID-19 outbreak should keep prices low and put pressure on smaller U.S. producers with weaker balance sheets. Low prices may also lead to cutbacks in investment spending on exploration and production.

## WTI crude oil price

U.S. dollars



Source: Chief Investment Office and Bloomberg data as of March 12, 2020.

## Market Selloff Catalyst Two: Oil Price Slump (cont'd)

Major recent oil price declines.

The oil market has experienced several large price declines over recent decades. These have typically been either demand-driven or supply-driven, but the current price fall has been driven by both demand and supply factors. In addition to longer-term structural demand weakness from the push toward greater efficiency, alternative fuel sources and electrification in transportation, could make the current slump more protracted. Equity market returns have varied over the course of past oil price declines, but with the U.S. now more dependent on energy output as the world's largest oil producer, a prolonged period of low prices would likely be a greater headwind.

### Recent oil price declines and drivers

Dates	Oil price change (peak-to-trough)	Cause	S&P 500 price change during oil decline
<b>November 1985 – March 1986</b>	-67%	OPEC raises output to regain market share from Alaska and North Sea (supply-driven)	+20%
<b>October 1990 – February 1991</b>	-57%	Gulf War related price spike reverses on U.S. military successes (supply-driven)	+24%
<b>October 1997 – December 1998</b>	-53%	Asian financial crisis (demand-driven)	+21%
<b>September 2000 – November 2001</b>	-53%	Technology sector bust and U.S. economy falls into recession (demand-driven)	-21%
<b>July 2008 – December 2008</b>	-78%	Global financial crisis (demand-driven)	-31%
<b>July 2014 – March 2015</b>	-60%	OPEC fills production quota alongside rising U.S shale output (supply-driven)	+4%
<b>June 2015 – February 2016</b>	-57%	Weakening of demand growth in China (demand-driven)	-13%
<b>January 2020 – present</b>	-55%	OPEC-Plus raises production as global demand weakens (supply-driven + demand driven)	-27%

Source: Chief Investment Office and Bloomberg data as of March 16, 2020.

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# ECONOMIC IMPACT AND POLICY RESPONSES: ASSET CLASS AND EQUITY MARKET PERFORMANCE

# Impact On Economic Growth

Gross domestic product (GDP) growth in the U.S. and globally is expected be weaker in 2020.

Four reasons for downgrade global growth:

1. COVID-19 spread outside China.
2. Slow public health response globally.
3. Monetary policy response needs to be accompanied by fiscal response.
4. “Oil war” between Saudi Arabia and OPEC.

We expect that the ongoing COVID-19 outbreak will likely cause a global recession in 2020, with economic growth expected to move sharply lower across all major economies.

## Summary of Real GDP Growth Forecasts

	2020 Old <sup>E*</sup>	2020 New <sup>E*</sup>	Bloomberg Consensus* *
<b>Global</b>	<b>2.2</b>	<b>0.3</b>	<b>2.6</b>
United States	1.2	-0.8	1.5
Euro Area	0.0	-1.7	0.6
China	4.6	1.5	5.3
Developed Markets	0.4	-1.3	1.7
Emerging Markets	3.3	1.4	4.1
Emerging Asia	4.2	2.1	n.a.
Emerging EMEA	1.9	0.6	n.a.
Latin America	0.9	-1.4	1.8

**All forecasts are subject to further adjustment based on the duration and severity of this virus outbreak and subsequent policy adjustments.**

\*E=Estimate

\*\*Bloomberg Consensus are likely stale and should move lower in the next round of surveys.

Source: BofA Global Research, Bloomberg. Data as of March 19, 2020.

**Past performance is no guarantee of future results.**

# Global Monetary and Fiscal Response

Central banks, global policy makers and governments have provided monetary and fiscal support.

Globally, targeted fiscal stimulus is being rolled out.

	Rate cuts	Spending Increases	Tax Cuts	Market Support	Bank Measures
China	X	X	X	X	X
South Korea		X			
Italy		X	X		
Japan		X		X	
United States	X	X			
Singapore		X			
Hong Kong		X	X		
Australia	X				
Malaysia	X	X	X		
Thailand		X		X	X
Canada	X			X	
UAE *					X
Vietnam		X	X		
Indonesia	X		X	X	X
United Kingdom		X			

\*United Arab Emirates.

Concrete actions taken or announced.

Sources: Central banks; John Hopkins CSSE; Press reports; The economist, and Chief Investment Office as of March 15, 2020.



# Health, Monetary and Fiscal Response in the U.S.

U.S policy makers and U.S. governments have provided monetary and fiscal support.

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## Health Response

- The first wave of fiscal response came in the form of an \$8.3 billion package in part to fund research to develop a vaccine.
- The Administration's declaration of a state of emergency (the Stafford Act) frees up Federal Emergency Management Association (FEMA) funds of over \$40 billion.
- State and local government efforts toward containment and deterring the spread of the virus

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## Monetary Policy Response

- In an emergency meeting the Federal Reserve (Fed) cut rates to zero and initiated a \$700 billion quantitative easing (QE) program, purchasing Treasuries and Mortgage Backed Securities (MBS). In addition the Fed is:
  - Improving discount window borrowing terms
  - Easing regulatory burden on banks
  - Opening up emergency dollar swap line facilities along with other central banks
- The Fed added extensive liquidity and lending facilities — Commercial Paper Funding Facility (CPFF) and Primary Dealer Credit Facility (PDCF).

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## Fiscal Response

- The \$8.3 billion package mentioned was more of a health response than fiscal stimulus.
- House Bill H.R. 6201 Families First Coronavirus Response Act (around \$100 billion) pending a vote with the Senate includes:
  - Paid Sick and Family Leave
  - Enhanced Unemployment Benefits
  - Increased Federal Medicaid Match
  - Food Stamp Enhancement
  - Free COVID-19 Testing

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## What else?

- A fiscal package in the \$500 billion to \$1 trillion range is possible that could include:
  - A payroll tax holiday
  - Low interest loans to small businesses
  - Industry relief
  - State and Local aid
  - Infrastructure spending
- Other stimulus includes waving student loan interest, purchasing oil for Strategic Petroleum Reserve (SPR), delayed tax filing

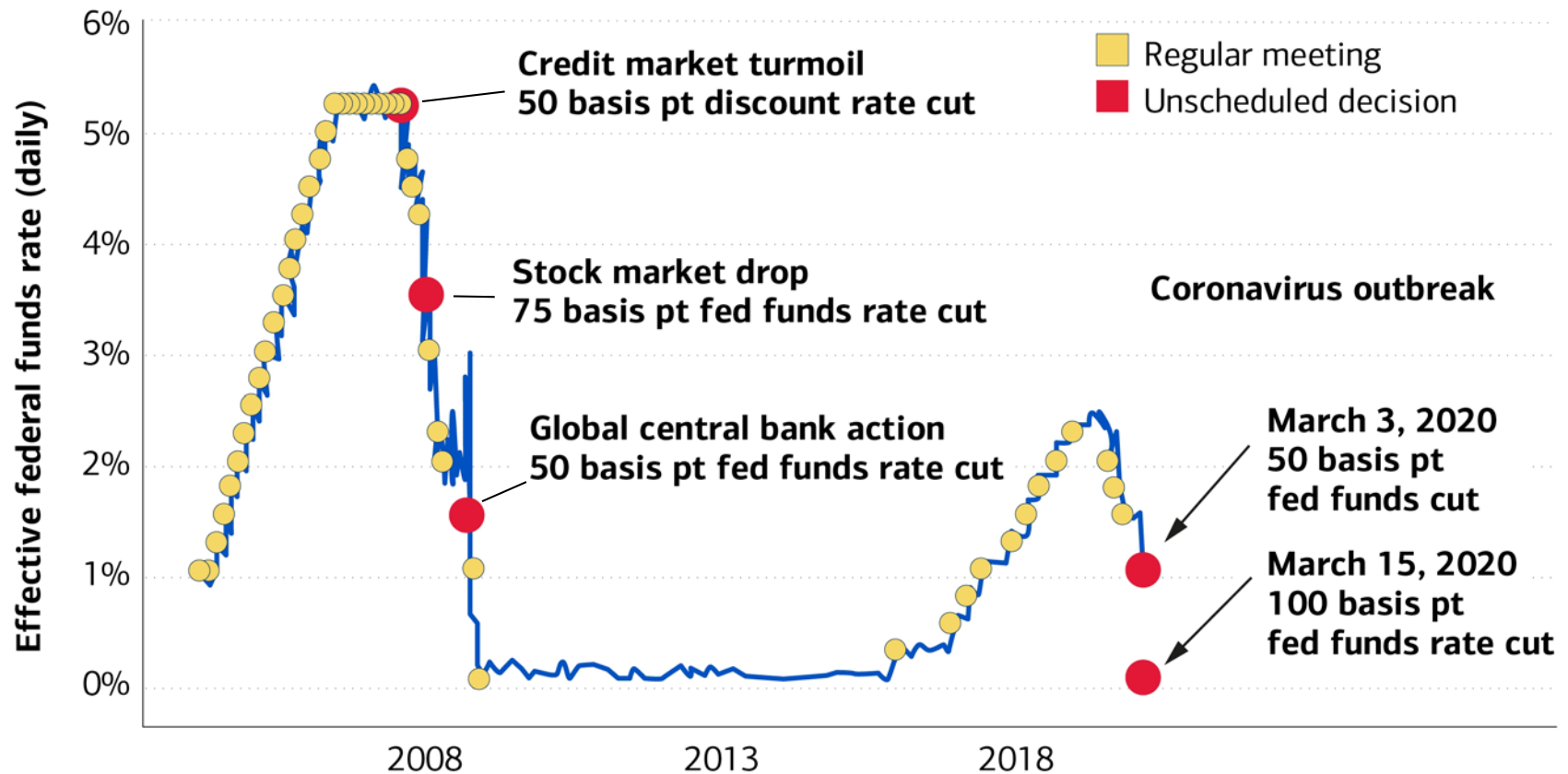
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Sources: Congress.gov; Federal Open Market Committee; Bloomberg; and Chief Investment Office as of March 17, 2020.

# The Fed Has Acted Swiftly to Help Mitigate COVID-19 Effect

The Fed has currently cut its policy rate to zero and reinstated its QE program in an effort to cushion the impact from the COVID-19 on the economy and ensure that financial markets are operating smoothly. We expect policymakers, both fiscal and monetary, to implement stimulus measures aimed at supporting the areas of the economy that have been most directly affected by this outbreak.

## Federal Reserve Rate Moves



Sources: Federal Reserve, New York Fed, St. Louis Fed and Chief Investment Office as of March 15, 2020.

# Historical Dislocations: Asset Class Performance During Previous Recessions

Recessions have historically led to steep losses for equities in the U.S. and globally, on average by 36% and 43% respectively. As the market perceives an elevated risk of recession, more defensive assets like Treasuries, Cash and Gold have tended to outperform. To help improve compound returns over time, well diversified portfolios should include growth assets such as equities and volatility dampening assets such as bonds.

* NBER Recessions		S&P 500 Drawdowns		Percent Return						
Peak	Trough	Peak	Trough	U.S. Equities	International Equities	Treasurys	Corporate Credit	Gold	Treasury Bills	Commodities**
Dec-07	Jun-09	Oct-07	Mar-09	-56.8%	-60.9%	15.4%	-7.6%	25.0%	2.9%	-39.5%
Mar-01	Nov-01	Mar-00	Oct-02	-49.1%	-51.0%	31.4%	25.6%	12.3%	11.0%	5.8%
Jul-90	Mar-91	Jul-90	Oct-90	-19.9%	-17.1%	0.8%	-0.7%	6.8%	2.0%	23.3%
Jul-81	Nov-82	Nov-80	Aug-82	-27.1%	–	24.0%	15.9%	-46.0%	29.5%	-48.5%
Jan-80	Jul-80	Feb-80	Mar-80	-17.1%	–	-4.9%	-7.4%	-30.4%	1.0%	-18.0%
Nov-73	Mar-75	Jan-73	Oct-74	-48.2%	–	–	–	137.5%	–	217.2%
			Average Percent Return	U.S. Equities	International Equities	Treasurys	Corporate Credit	Gold	Treasury Bills	Commodities**
				-36.4%	-43.0%	13.3%	5.2%	17.5%	9.3%	-6.1%

\*National Bureau of Economic Research.

\*\*Commodities uses the median to account for outliers associated with oil crises in the 1970s and in 1990. Note: Calculations are based on the dates of the max drawdowns for the S&P 500 occurring around recessions, using daily data where available and monthly data otherwise. International Equities measured by the MSCI ACWI ex U.S. U.S. equities measured by the S&P 500. Treasuries measured by the Bloomberg Barclays U.S. Treasury Total Return Index. Corporate Credit Measured by the ICE BofA U.S. Corporate Index. Gold is Spot Gold. Treasury Bills are the ICE BofA U.S. 3-Month Treasury Bill Index (monthly). Commodities are the Bloomberg Commodity Index.

Sources: Chief Investment Office and Bloomberg as of December 2019.

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# Historical Dislocations: Recent Examples in the Equity Market

Exogenous shocks could have major negative impacts on equities, but markets have historically rebounded once uncertainty abates and fundamentals start to improve.

Market Event	Description	S&P 500 Drawdown	EPS* Contraction	Length of Drawdown (Days)	Length until Recovery (Days)
1987: Black Monday	Black Monday has been attributed to numerous factors such as expectations that the Federal Reserve (Fed) would raise rates, technical program trading strategies impacting liquidity and difficulty in obtaining reliable information. The Fed swiftly acted to provide liquidity to the financial system and support market confidence.	(21%)	14%	49	321
1998: Russian Default and LTCM Collapse	The Asian financial crisis led to a global spike in risk aversion amongst investors, exacerbated by the Russian financial crisis, which negatively impacted Russia's foreign exchange reserves and resulted in the Russian government and central bank devaluing their domestic currency and defaulting on their debt. A massive financial package from the International Monetary Fund (IMF) and World Bank helped to stabilize the economy, and the Fed cutting rates boosted investors sentiment.	(19%)	0%	45	84
2000-2002: Dot-Com Bubble	Low interest rates and the emergence of the internet contributed to euphoria in many parts of the equity market, as investors assigned excessively high valuations to technology companies which in many cases were not viable.	(49%)	(10%)	929	1694
2001: September 11 Attacks	The September 11 attacks were a series of coordinated terrorist attacks against the United States. This resulted in a significant drag on consumer confidence and retail sales in the months to follow. Continued rate cuts from the Fed helped cushion the impact.	(12%)	(0%)	11	20
2008-2009: Global Financial Crisis	As the Fed hiked interest rates in the mid 2000s, adjustable-rate mortgages became more expensive, housing inventory began to stockpile, home prices declined and sales rolled over. As that happened, many borrowers began to default on their mortgages, and many investors (including major banks) faced steep losses with many either declaring bankruptcy or needing bailouts from the government.	(57%)	(32%)	517	1480
2011-2012: Euro Zone Debt Crisis	Sovereign debt crises spread throughout peripheral Europe in the years after the Financial Crisis, particularly in Greece, Ireland and Portugal, requiring bailouts by the European Union and IMF. Contagion later spread to larger European economies such as Spain and Italy as government leaders were forced to address structural reforms with limited success.	(19%)	5%	157	144
2015-2016 Oil Slick	Oil prices began to decline in the middle of 2014 as U.S. oil production surged, while slowing growth in China weighed on global demand. It wasn't until U.S. producers started scaling back production and reports emerged that OPEC may freeze production that prices eventually rebounded from \$26/barrel, helping the broader equity market.	(14%)	(3%)	266	151
2018 Recession Scare	Concerns over the ongoing U.S.-China trade war and rate hikes from the Federal Reserve pushed the U.S. economy to the brink of recession, as the yield curve flattened sharply and high yield credit spreads spiked to over 5 percent. With U.S. equities down roughly 20 percent, Fed Chair Jerome Powell was forced to pivot away from overly tight policy and eventually cut rates to sustain the expansion.	(20%)	6%	95	120

Note: Drawdowns for the S&P 500 for Black Monday and 9/11 are based on the day before the event. \*Earnings Per Share (EPS) Contraction captures the fluctuations in earnings growth from peak to trough, as does the change in 10-year treasury yields. The length of recovery is illustrated as the number of days it takes the broad equity market (S&P 500) to reach or surpass its previous peak from the trough level. The subsequent twelve month return depicts the performance since the equity market troughed

Sources: Chief Investment Office and Bloomberg March 12, 2020.

Indexes are unmanaged and do not take into account fees or expenses. It is not possible to invest directly in an index.

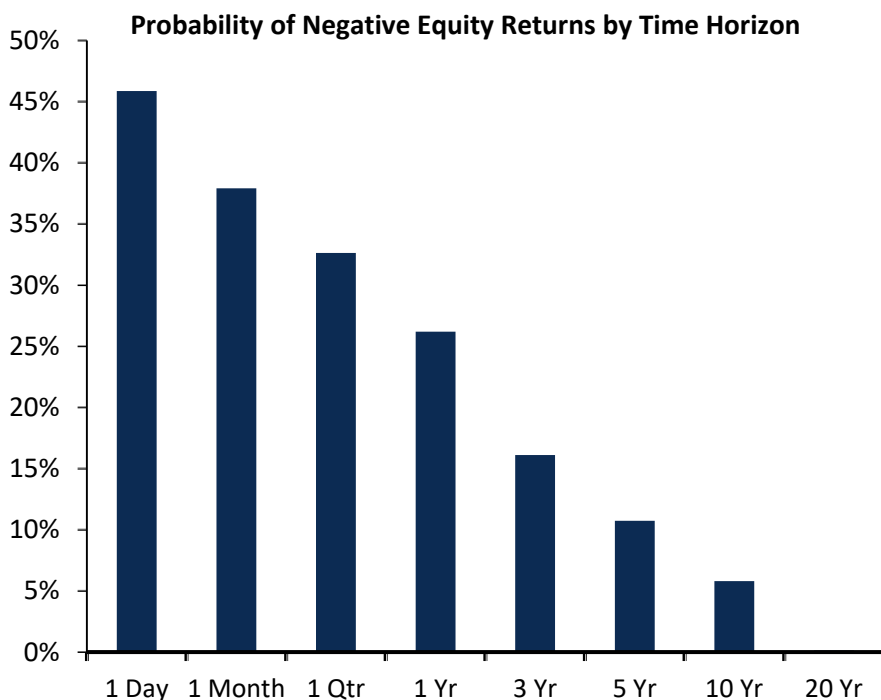
Past performance is no guarantee of future results. Please refer to Appendix for Asset Class Proxies, Index Definitions and Important Disclosures.

# EQUITY AND FIXED INCOME MARKETS, LONG TERM CONTEXT & DIVERSIFICATION

# Equity Markets: Short-Term versus Long-Term

Long term equity returns have historically been positive and the increase in dividend yield alongside the decline in bond yield have historically made equities an attractive option.

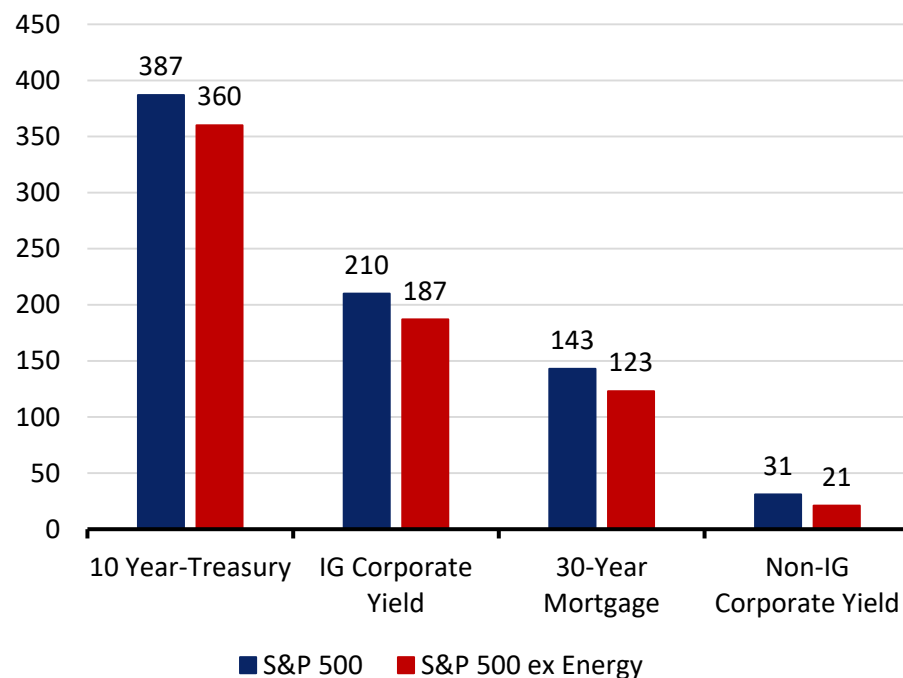
For equity investors, to help loss avoidance is time: As time horizons lengthen, the probability of losing money in equities tends to decrease.



As interest rates continue to move lower, a larger share of the U.S. equity market can potentially earn investors a higher yield than fixed income but at a higher risk.

## Number of Stocks with Dividend Yields Above...

Number of Stocks



Note: Equity market data goes back to 1929.

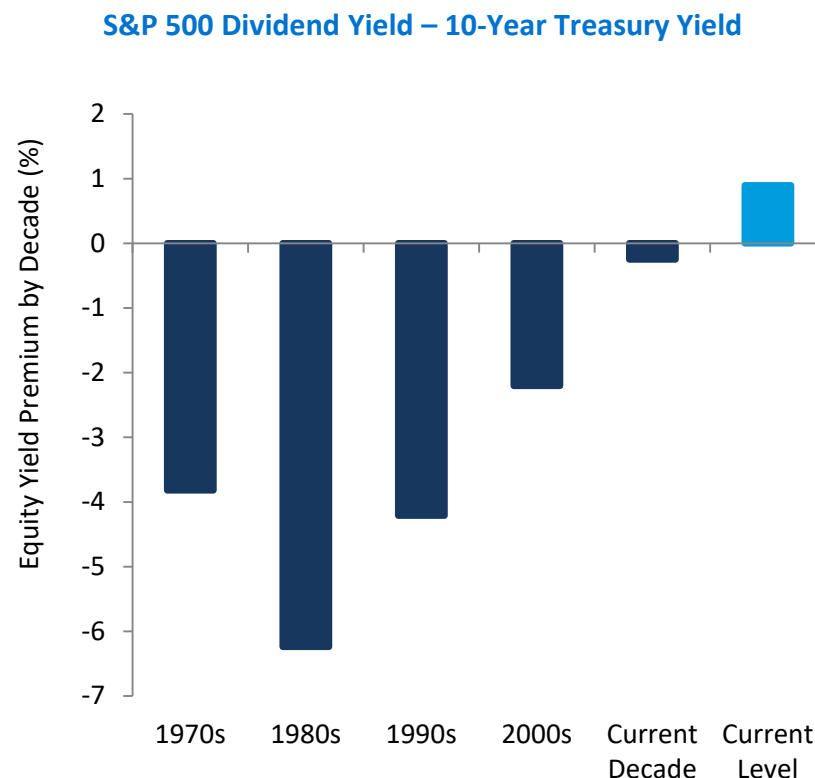
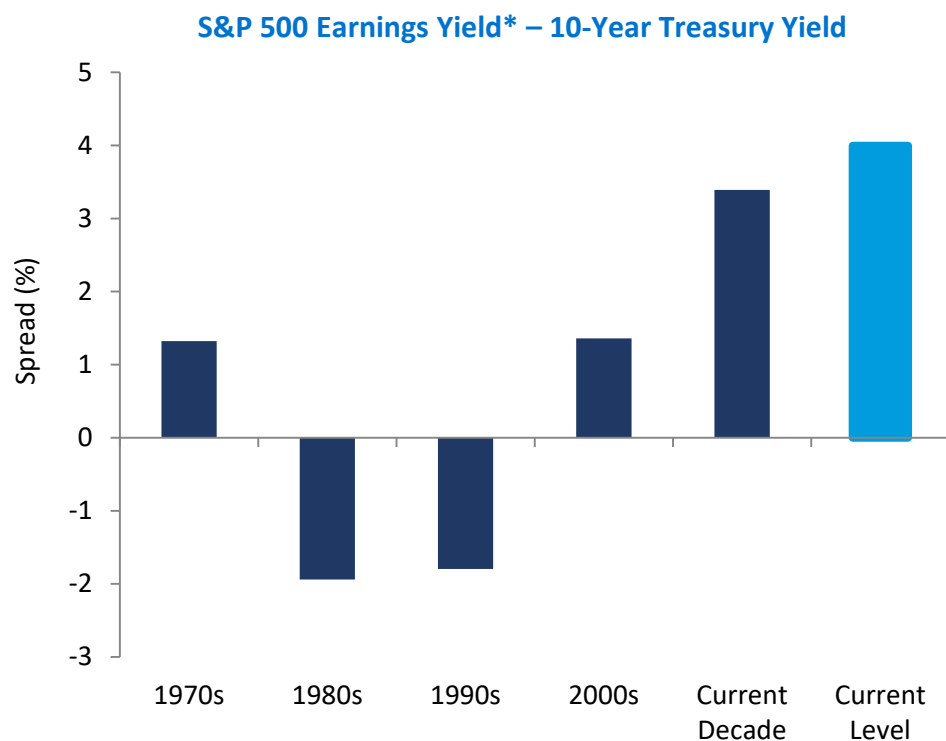
Sources: Chief Investment Office and BofA Global Research as of March 12, 2020.

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# Asset Class Valuation: Equities Have Become Attractive Relative to Fixed Income

The equity risk premium, measured as the spread between the S&P 500's earnings yield and the 10-year Treasury yield, remains well above its long-term average. Investors currently earn a higher yield from dividends than from the 10-year Treasury. According to BofA Global Research, 94% of the time that this happens, stocks historically outperformed bonds over the next 12 months (by about 20 percentage points (ppt) on average).



\*Earnings Yield reflects the reciprocal of the trailing price-to-earnings (P/E) ratio.

Sources: Chief Investment Office, BofA Global Research and Bloomberg as of February 28, 2020.

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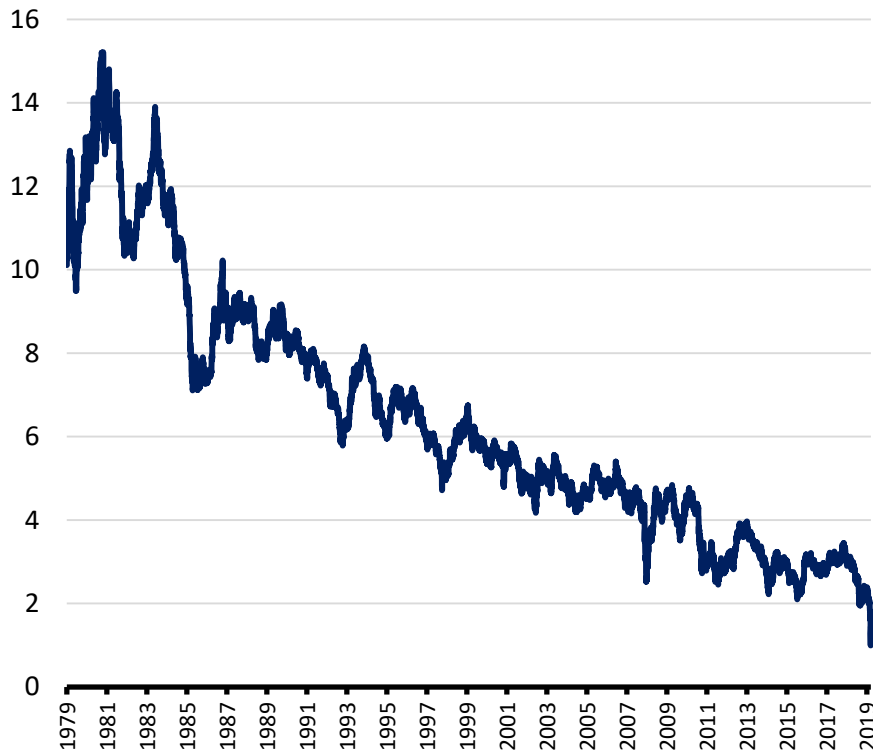


# Fixed Income: Treasury Yields Touched Historical Lows while Muni-Treasury Ratios Rose

The 30-year Treasury yield has currently fallen to an all-time low. They produced compelling returns during the equity sell-off and acted as a hedge in diversified portfolios. Going forward, while their hedging qualities remain, returns may be challenged

## 30- Year Treasury Yield

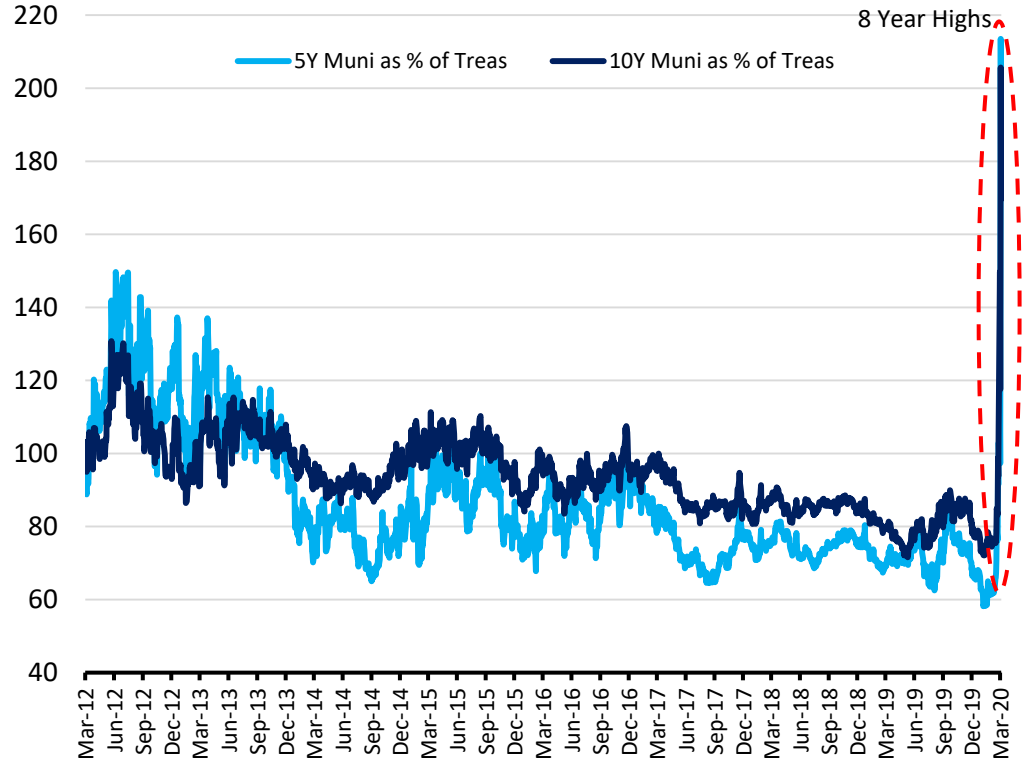
Percent (%)



Municipals bonds lost their “flight-to-quality” status, as the year-long+ trend of fund inflows was broken, and individual investors became large net sellers of municipals after yields had hit all-time lows. In combination with the current record low in Treasury yields, this has pushed municipal-Treasury ratios close to all-time highs, highlighting the value for tax-sensitive investors

## Muni-to-Treasury Yield Ratios Recently Hit 8 Year Highs

Ratio



Sources: (Left) Note: data represents monthly return through February for the Bloomberg Barclays US Treasury Total Return Index. Bloomberg; Chief Investment Office. Data as of March 12, 2020. (Right) Bloomberg. Data as of March 13, 2020.

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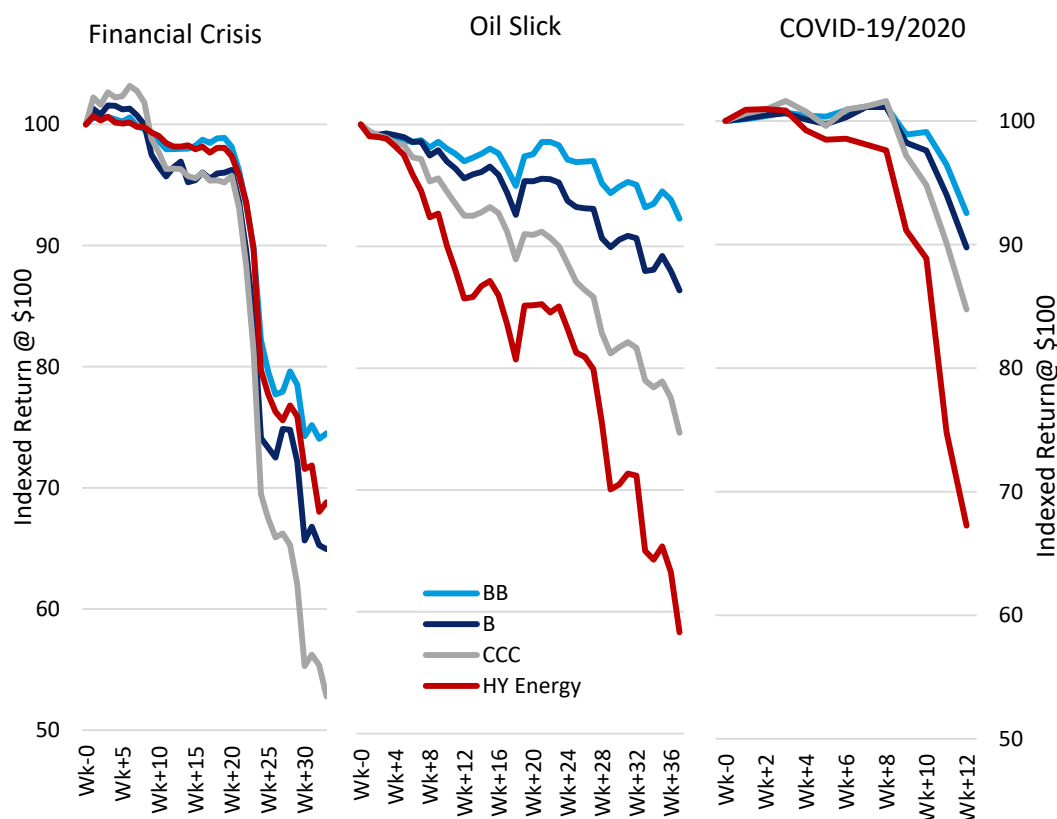


# Fixed Income: High Yield Spreads Have Widened as in Prior Crises and Returns Have Suffered

The high yield (HY) market has seen significant widening in credit spreads although somewhat limited in the context of other recent major market disruptions. One of the primary drivers of these wider spreads has been the Energy sector driven by the oil price decline which we anticipate will result in material declines in credit quality, ratings downgrades and increased defaults in this sector.

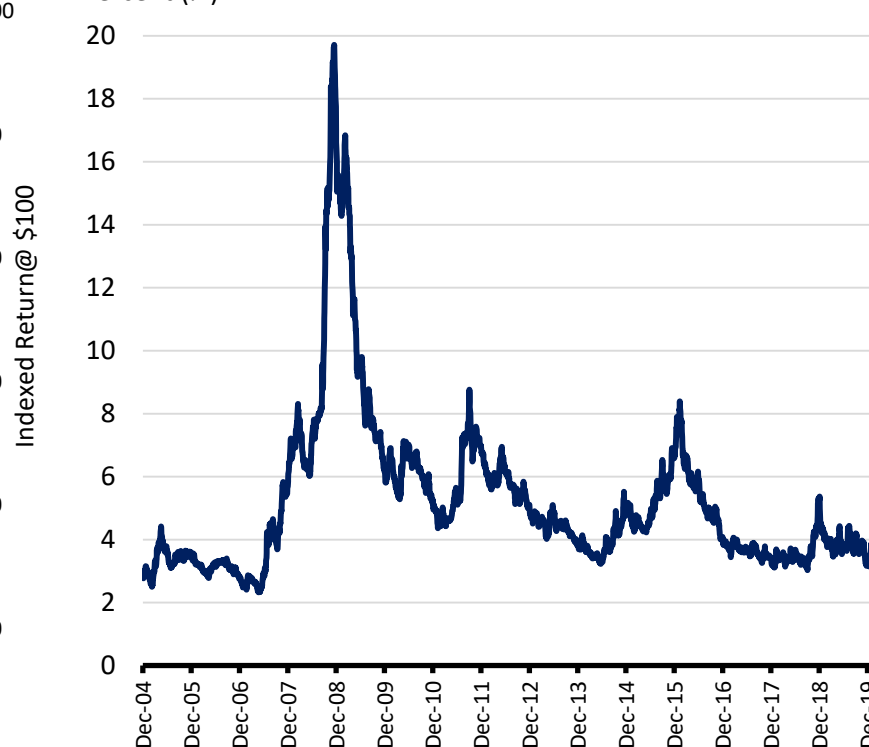
The velocity and magnitude of drops within various HY sectors – notably in energy – has rivaled the moves during the 2008 financial crisis.

However, while these are similar spread/yield levels witnessed during recessionary fears – the European Sovereign Debt Crisis 2011/2012, the Oil Slick of 2015/2016 – we are nowhere near the levels seen during the systemic panic of 2008.



**High Yield Option Adjusted Spread (OAS)**

Percent (%)



Source: Bloomberg. Data as of March 12, 2020.

Indexes are unmanaged and do not take into account fees or expenses. It is not possible to invest directly in an index.

**Past performance is no guarantee of future results. Please refer to Appendix for Asset Class Proxies, Index Definitions and Important Disclosures.**

# Major Investment Themes Influenced by COVID-19 Outbreak

We expect market returns across a range of sectors and industry groups to be influenced by a number of major investment themes as COVID-19 crisis continues to develop, and as financial markets eventually begin to stabilize and recover. Many relate to growth of the digital economy in Healthcare, Consumer and Industrial activity.

## Investment themes for the COVID-19 crisis

Theme	Drivers	Sectors/Industry groups
<b>Global healthcare spending</b>	Demand for medical services, higher hospital equipment levels to build demand surge capacity, health infrastructure in underdeveloped systems (Asia, Middle East, Africa)	Healthcare providers and services, emerging market healthcare sector, healthcare equipment and supplies
<b>Medical technology</b>	Remote patient care, advanced devices and equipment for diagnosis and monitoring	Healthcare technology, healthcare equipment and supplies, life sciences tools and services
<b>Genomics</b>	Use of advanced techniques in disease treatment, pathogen genome sequencing, improved drug development capacity	Biotechnology, pharmaceuticals
<b>Robotics and automation</b>	Shorter supply chains, operation of factories, transportation systems, retail, and essential services with less labor dependence	Electronic equipment, instruments and components, application software, electrical components and equipment
<b>Cloud computing</b>	Increased reliance on telecommuting, distance learning in education, need to process and store larger data volumes	Information technology, systems software
<b>Digital media and entertainment</b>	Online gaming, video streaming, social networking, digital media, virtual reality demand with more social distancing	Communication services, interactive media and services
<b>Online retail</b>	Demand for online ordering and delivery across a range of consumer categories including household products, food, consumer staples	Internet and direct marketing retail

Sources: Chief Investment Office and BofA Global Research as of March 2020.

# Diversification Helps Especially in Times of Stress

U.S. Oriented Investor

Historical Asset Class Performance

Key market index returns, 2010 – 2019 - highest to lowest

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
US SCG 29.08%	Govt FI 9.19%	EM Equity 18.23%	US SCG 43.30%	US LCV 13.45%	US LCG 5.67%	US SCV 31.74%	EM Equity 37.28%	Intl FI 3.17%	US LCG 36.39%
US SCV 24.51%	Corp FI 7.51%	US SCV 18.05%	US SCV 34.52%	US LCG 13.05%	Mtge FI 1.46%	High Yield FI 17.34%	US LCG 30.21%	Cash 1.87%	US SCG 28.48%
EM Equity 18.88%	Mtge FI 6.14%	US LCV 17.50%	US LCG 33.48%	Intl FI 9.07%	Intl FI 1.35%	US LCV 17.34%	Intl Eq 24.21%	Inflation 1.68%	US LCV 26.54%
US LCG 16.71%	High Yield FI 4.50%	Intl Eq 16.41%	US LCV 32.53%	CIO Mod. Alloc. 7.95%	Govt FI 0.84%	US SCG 11.32%	US SCG 22.17%	Mtge FI 1.00%	Intl Eq 22.49%
US LCV 15.51%	Intl FI 4.04%	High Yield FI 15.44%	Intl Eq 21.02%	Corp FI 7.51%	Inflation 0.73%	EM Equity 11.19%	US LCV 13.66%	Govt FI 0.83%	US SCV 22.39%
High Yield FI 15.24%	Inflation 2.96%	US LCG 15.27%	CIO Mod. Alloc. 17.05%	Mtge FI 6.07%	CIO Mod. Alloc. 0.18%	CIO Mod. Alloc. 8.05%	CIO Mod. Alloc. 13.30%	US LCG -1.51%	CIO Mod. Alloc. 19.00%
CIO Mod. Alloc. 12.33%	US LCG 2.64%	US SCG 14.58%	High Yield FI 7.38%	Govt FI 5.88%	Cash 0.05%	US LCG 7.08%	US SCV 7.84%	Corp FI -2.25%	EM Equity 18.42%
Corp FI 9.52%	CIO Mod. Alloc. 2.08%	CIO Mod. Alloc. 11.79%	Inflation 1.51%	US SCG 5.60%	Corp FI -0.63%	Corp FI 5.96%	High Yield FI 7.48%	High Yield FI -2.26%	High Yield FI 14.40%
Intl Eq 8.95%	US LCV 0.39%	Corp FI 10.37%	Intl FI 1.33%	US SCV 4.22%	US SCG -1.38%	Intl FI 5.19%	Corp FI 6.48%	CIO Mod. Alloc. -4.78%	Corp FI 14.23%
Mtge FI 5.67%	Cash 0.10%	Intl FI 6.59%	Cash 0.07%	High Yield FI 2.45%	Intl Eq -3.04%	Intl Eq 2.75%	Intl FI 2.51%	US LCV -8.27%	Intl FI 7.57%
Govt FI 5.61%	US SCG -2.92%	Mtge FI 2.59%	Mtge FI -1.39%	Inflation 0.76%	US LCV -3.83%	Inflation 2.07%	Mtge FI 2.45%	US SCG -9.31%	Govt FI 6.95%
Intl FI 3.28%	US SCV -5.50%	Govt FI 2.19%	Corp FI -1.46%	Cash 0.03%	High Yield FI -4.55%	Mtge FI 1.67%	Govt FI 2.42%	US SCV -12.86%	Mtge FI 6.51%
Inflation 1.50%	Intl Eq -12.21%	Inflation 1.74%	EM Equity -2.60%	EM Equity -2.19%	US SCV -7.47%	Govt FI 1.15%	Inflation 2.24%	Intl Eq -14.09%	Inflation 2.41%
Cash 0.13%	EM Equity -18.42%	Cash 0.11%	Govt FI -3.21%	Intl Eq -4.32%	EM Equity -14.92%	Cash 0.33%	Cash 0.86%	EM Equity -14.58%	Cash 2.28%

Sources: Morningstar Direct & CIA System. Income and dividends are included in all returns figures. Excludes alternative investments. CIO Moderate Allocation represents GWIM ISC Strategic Asset Allocation for Tier 0 (Highest Liquidity) Moderate U.S. Investor. \*Data as of December 31, 2019. Results shown are based on an index and are illustrative; they assume reinvestment of income and no transaction costs or taxes. Indexes are unmanaged and do not take into account fees or expenses. It is not possible to invest directly in an index.

Past performance is no guarantee of future results.

Please refer to asset class disclosures, risk disclosures and index definitions at the end of this presentation.

## OUR INVESTMENT VIEW

# Economic Effect and Portfolio Considerations

## Economic Effect

### Short Term

- U.S. GDP expected to contract sharply in Q2 of this year, but expect recovery later in the calendar year.
- We expect global GDP growth to drop effectively to zero this year, matching the major recessions of 1982 and 2009.
- When economies come back on on-line growth will likely surge but the level of GDP will remain well below its old trend into 2021.
- New regime of higher volatility and economic uncertainty
- Expect U-shaped recovery towards end of year and into 2021.
- Fed cuts policy rate by 100 bps to 0%-0.25%.
- Fiscal policy is ramped up globally.

### Long Term

- COVID-19 spread and oil price war may accelerate the impact of the 2018-19 trade war through a major change to the global supply chain.
- Stimulus placed in the economy to move from “cushion” status to “tailwind” later in the year.
- Potential changes in consumer behaviors could include greater awareness to health and wellness, expansion of experiential culture, greater use of digitalization and virtualization.
- Global governments and corporations increase risk mitigation practices, waste management, climate control initiatives, infrastructure investments, new capital expenditures and new productivity initiatives.

## Portfolio Considerations

- Have portfolio rebalancing plans ready during the bottoming process, which may include shifting exposure back to strategic and tactical weights across and within asset classes. Maintain a diversified portfolio.
- Prefer U.S. Large-Cap equities and Investment-Grade corporates.
- Due to the magnitude of the correction and significant drop in bond yields, equities are more attractive as largest returns in equities tend to come after large corrections. Demographic wave likely to increase allocations to equities in search of total returns given the record low yields in fixed income.
- Due to historically low yields, investment-grade bonds, particularly treasuries, will act as a portfolio dampener rather than a return generator.
- Long-term themes to focus on include artificial intelligence, robotics, climate change solutions, cybersecurity, emerging market healthcare, e-commerce, cloud computing etc.
- **Investment actions to consider:** review investment goals, manage portfolios for tax efficiency, consider an increase in the role of active investing\*, when investing for yield be aware of the sensitivity of many yield-generating instruments to the impact of rising interest rates, use the natural liquidity of a portfolio (cash flow from stock dividends, bond coupons and other income flows) to help meet spending needs.

\*Active management refers to a portfolio management strategy where the manager makes specific investments with the goal of outperforming an investment benchmark index or target return.  
Sources: Chief Investment Office as of March 2020.

Please refer to Appendix for Asset Class Proxies, Index Definitions and Important Disclosures.

# As Markets Face Uncertainty, Its Important To Have a Strategy

Trying to select a bottom in equity markets when fear is at its highest levels is not a successful strategy, in our view. We should stay with the facts and gain more insight into the severity and duration of this virus outbreak.

We believe it's time in the market that is rewarded, not timing the market. And view rebalancing as a process, not a single point in time.

Environments of greatest uncertainty are usually when diversification begins to show its largest potential strength.

We believe it is important to let the volatility subside in the near-term but given our current view that equity markets are likely to recover with additional policy responses and as some signs emerge that the economy could benefit from recent stimulus, we will look for opportunities to rebalance portfolios and stay diversified over the coming weeks and months.

# APPENDIX

# Asset Class Proxies

Asset Class	Index	Index Description
Inflation	IA SBBI US Inflation	The Consumer Price Index for All Urban Consumers, or CPI-U, is used by IA SBBI to measure inflation, which is the rate of change of consumer goods prices. All inflation measures are constructed by the U.S. Department of Labor, Bureau of Labor Statistics, Washington.
Cash	IA SBBI US 30 Day TBill TR USD & BAML U.S. Treasury Bills 3 months	For the IA SBBI U.S. Treasury Bill Index, the CRSP U.S. Government Bond File is the source from 1926 to 1976. Each month a one-bill portfolio containing the shortest-term bill having not less than one month to maturity is constructed. (The bill's original term to maturity is not relevant). The ICE BofA US 3-Month Treasury Bill Index is comprised of a single issue purchased at the beginning of the month and held for a full month. At the end of the month that issue is sold and rolled into a newly selected issue. The issue selected at each month-end rebalancing is the outstanding Treasury Bill that matures closest to, but not beyond, three months from the rebalancing date. To qualify for selection, an issue must have settled on or before the month-end rebalancing date.
US Large Cap Growth	Russell 1000 Growth Total Return	Russell 1000 Growth Total Return measures the performance of the large-cap growth segment of the U.S. equity universe. It includes those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.
US Large Cap Value	Russell 1000 Value Total Return	Russell 1000 Value Total Return measures the performance of the large-cap value segment of the U.S. equity universe. It includes those Russell 1000 companies with lower price-to-book ratios and lower expected growth values.
US Small Cap Growth	Russell 2000 Growth Total Return	Russell 2000 Growth Total Return measures the performance of the broad growth segment of the U.S. equity universe. It includes those Russell 2000 companies with higher price-to-book ratios and higher forecasted growth values.
US Small Cap Value	Russell 2000 Value Total Return	Russell 2000 Value Total Return measures the performance of the large-cap value segment of the U.S. equity universe. It includes those Russell 2000 companies with lower price-to-book ratios and lower expected growth values.
International Equity	MSCI Daily TR Net World Ex USA USD	The MSCI World ex USA Index captures large and mid cap representation across 22 of 23 Developed Markets (DM) countries – excluding the United States. The index covers approximately 85% of the free float-adjusted market capitalization in each country.
Emerging Markets	MSCI Daily TR Net EM USD	The MSCI Emerging Markets (EM) Index captures large and mid cap representation across 23 Emerging Markets countries and targets coverage of approximately 85% of the free float adjusted market capitalization in each country.
North America	MSCI Daily TR Net North America	The MSCI North America Index is designed to measure the performance of the large and mid cap segments of the US and Canada markets. The index covers approximately 85% of the free float-adjusted market capitalization in the US and Canada.
Developed Europe ex-UK	MSCI Daily TR Net Europe Ex U.K. USD	The MSCI Europe ex UK Index captures large and mid cap representation across 14 Developed Markets (DM) countries in Europe. The index covers approximately 85% of the free float-adjusted market capitalization across European Developed Markets excluding the UK.
UK	MSCI Daily TR Net UK USD	The MSCI United Kingdom Index is designed to measure the performance of the large and mid cap segments of the UK market. The index covers approximately 85% of the free float-adjusted market capitalization in the UK.
Japan	MSCI Daily TR Net Japan USD	The MSCI Japan Index is designed to measure the performance of the large and mid cap segments of the Japanese market. The index covers approximately 85% of the free float-adjusted market capitalization in Japan.
Global Corporates	ICE BofA Global Broad Market Corp (Hedged)	The ICE BofA Global Corporate Index tracks the performance of investment grade corporate debt publicly issued in the major domestic and euro-bond markets. Qualifying securities must have an investment grade rating (based on an average of Moody's, S&P and Fitch), at least 18 months to final maturity at the time of issuance, at least one year remaining term to final maturity as of the rebalancing date and a fixed coupon schedule.
Global Mortgages	ICE BofA Global Broad Market Collateralized (Hedged)	The ICE BofA Global Collateralized Index tracks the performance of investment grade securitized and collateralized debt, including mortgage backed, asset backed, commercial mortgage backed, covered bond, and US mortgage pass-through securities publicly issued in the major domestic and euro-bond markets. Qualifying securities must have an investment grade rating (based on an average of Moody's, S&P and Fitch).
Global HY / EM	ICE BofA Global HY Country External Corp & Govt + ICE BofA Global High Yield (Unhedged)	(i) The ICE BofA Global High Yield Country External Corporate & Government Index tracks the performance of USD and EUR denominated emerging market debt, including sovereign, quasi-government and corporate securities. (ii) The ICE BofA Global High Yield Index tracks the performance of USD, CAD, GBP and EUR denominated below investment grade corporate debt publicly issued in the major domestic or euro-bond markets.



# Methodology

CIO Balanced Return

Strategic Asset Allocation

The model performance represented within this presentation reflects investment returns which incorporate CIO tactical asset allocation and investment manager changes made overtime (known here as “The Reference Model”). Inception of the Reference Model is April 1, 2008. Changes to The Reference Model’s composition of investments (both asset class weightings and specific investment strategies) are tracked continuously utilizing FactSet® to calculate monthly performance and to effectuate any necessary changes. Modifications to The Reference Model’s asset class weights or investment strategies typically occur at the month-end closest to that of the announced change. ISC GWIM ISC makes all tactical asset allocation decisions and CIO Portfolio Management team makes all fund selection decisions.

Policy Benchmark refers to the CIO Balanced Return Low Tax Policy Benchmark. The policy benchmark for a Balanced Return investment objective (as of 02/28/2019) consisted of ICE BofA U.S. Treasury Bill (3 M) (USD Unhedged) Index 2%, Russell Top 200 Index 18%, Russell Mid Cap Index 13%, Russell 2000 Index 8%, MSCI Daily TR Net World Ex USA USD 12%, MSCI Emerging Markets Index (net) 6%, Bloomberg Barclays Capital U.S. Aggregate Index 16%, Bloomberg Barclays Municipal Bond Index 0%, ICE BofA Global Broad Market x U.S. Dollar (USD Hedged) Index 6%, Bloomberg Barclays Global High Yield Index 2%, Bloomberg Barclays Muni High Yield Index 0%, HFRX Global Hedge Fund Index 13%, Bloomberg Commodity Index TR 4%.

# Index Definitions

**Bloomberg Barclays US Aggregate Bond Index** is a market capitalization-weighted index, meaning the securities in the index are weighted according to the market size of each bond type. Most U.S. traded investment grade bonds are represented.

**Bloomberg Commodity Index** is made up of 22 exchange-traded futures on physical commodities, which are weighted to account for economic significance and market liquidity.

**ICE BofA 5-7 Year US Corporate Index** is a subset of The BofA US Corporate Index including all securities with a remaining term to final maturity greater than or equal to 5 years and less than 7 years.

**ICE BofA 5-7 Year US Municipal Securities Index** is a subset of The BofA US Municipal Securities Index including all securities with a remaining term to final maturity between 5-7 years

**ICE BofA 5-7 Year US Treasury Index** is a subset of The BofA US Treasury Index including all securities with a remaining term to final maturity greater than or equal to 5 years and less than 7 years.

**ICE BofA All Maturity All Euro Government Index:** The BofA All Maturity All Euro Government Index tracks the performance of EUR denominated sovereign debt publicly issued by Euro member countries in either the eurobond market or the issuer's own domestic market.

**ICE BofA Global Broad Market Index:** The BofA Global Broad Market Index tracks the performance of investment grade debt publicly issued in the major domestic and eurobond markets, including sovereign, quasi-government, corporate, securitized and collateralized securities.

**ICE BofA Global Emerging Markets Sovereign Index** tracks the performance of U.S. dollar-denominated debt of sovereign issuers domiciled in countries with a BB or lower foreign currency long-term sovereign debt rating

**ICE BofA Global Financial Stress Index** is a Bank of America calculated, cross market measure of risk, hedging demand and investor flows in the global financial system. Levels greater/less than 0 indicate more/less financial market stress than normal. Apart from the headline GFSI, there are three sub-indices, RISK, FLOW and SKEW.

**ICE BofA Global Sovereign Broad Market Index** tracks the performance of local currency-denominated debt of Investment Grade-rated sovereign issuers.

**ICE BofA High Yield Master Index** tracks the performance of below Investment Grade U.S. dollar-denominated corporate bonds publicly issued in the U.S. domestic market. "Yankee" bonds (debt of foreign issuers issued in the U.S. domestic market) are included in the index provided the issuer is domiciled in a country having an Investment Grade foreign currency long-term debt rating (based on a composite of Moody's and S&P).

**ICE BofA Municipal Masters Index** tracks the performance of the Investment Grade U.S. tax-exempt bond market.

**MSCI World ex USA Index** captures large and mid cap representation across 22 of 23 Developed Markets (DM) countries -- excluding the United States. With 1,022 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

**MSCI World Value Index** captures large and mid cap securities exhibiting overall value style characteristics across 23 Developed Markets (DM) countries. The value investment style characteristics for index construction are defined using three variables: book value to price, 12-month forward earnings to price and dividend yield.

**Russell 2000 Index®** measures the performance of the 2,000 smallest companies in the Russell 3000 Index.

**Russell 3000 Growth Index** measures the performance of those Russell 3000 Index companies with higher price-to-book ratios and higher forecasted growth values.

**Russell 3000 Index** is composed of 3000 large U.S. companies, as determined by market capitalization.

**Russell 3000 Value Index** measures the performance of those Russell 3000 Index companies with lower price-to-book ratios and lower forecasted growth values.

**MSCI ACWI ex USA Index** captures large and mid cap representation across 22 of 23 Developed Markets (DM) countries (excluding the US) and 23 Emerging Markets (EM) countries. With 1,854 constituents, the index covers approximately 85% of the global equity opportunity set outside the US.

**MSCI ACWI Index** captures large and mid cap representation across 23 Developed Markets (DM) and 23 Emerging Markets (EM) countries. With 2,484 constituents, the index covers approximately 85% of the global investable equity opportunity set.

**S&P 500 Index**, widely regarded as the best single gauge of the U.S. equities market, includes a representative sample of 500 leading companies in leading industries of the U.S. economy. Although the index focuses on the large-cap segment of the market, with approximately 75% coverage of U.S. equities, it is also an ideal proxy for the total market.

**VIX Index:** The Chicago Board Options Exchange Standard and Poor's Volatility Index, reflects a market estimate of future volatility, based on the weighted average of the implied volatilities for a wide range of strikes

**WTI crude oil** reflects the Bloomberg West Texas Intermediate Crude Oil Spot Price. The price is derived by adding spot market spreads to the NYMEX contract. Units are in U.S. dollars per barrel and is traded intraday.

# Important Disclosures

This material was prepared by the Chief Investment Office (CIO) and is not a publication of BofA Global Research. The views expressed are those of the CIO only and are subject to change. This information should not be construed as investment advice. It is presented for information purposes only and is not intended to be either a specific offer by any Merrill or Bank of America entity to sell or provide, or a specific invitation for a consumer to apply for, any particular retail financial product or service that may be available.

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The GWIM Investment Strategy Committee (GWIM ISC) is responsible for developing and coordinating recommendations for short-term and long-term investment strategy and market views encompassing markets, economic indicators, asset classes and other market-related projections affecting GWIM.

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**Investing involves risk, including the possible loss of principal. Past performance is no guarantee of future results.**

All recommendations must be considered in the context of an individual investor's goals, time horizon, liquidity needs and risk tolerance. Not all recommendations will be suitable for all investors. Asset allocation, diversification and rebalancing do not ensure a profit or protect against loss in declining markets.

Investments have varying degrees of risk. Some of the risks involved with equity securities include the possibility that the value of the stocks may fluctuate in response to events specific to the companies or markets, as well as economic, political or social events in the U.S. or abroad. Small cap and mid cap companies pose special risks, including possible illiquidity and greater price volatility than funds consisting of larger, more established companies. Bonds are subject to interest rate, inflation and credit risks. Municipal securities can be significantly affected by political changes as well as uncertainties in the municipal market related to taxation, legislative changes, or the rights of municipal security holders. Income from investing in municipal bonds is generally exempt from Federal and state taxes for residents of the issuing state. While the interest income is tax-exempt, any capital gains distributed are taxable to the investor. Income for some investors may be subject to the Federal Alternative Minimum Tax. Investments in high-yield bonds (sometimes referred to as "junk bonds") offer the potential for high current income and attractive total return, but involves certain risks. Changes in economic conditions or other circumstances may adversely affect a junk bond issuer's ability to make principal and interest payments. Treasury bills are less volatile than longer-term fixed income securities and are guaranteed as to timely payment of principal and interest by the U.S. government. Mortgage-backed securities are subject to credit risk and the risk that the mortgages will be prepaid, so that portfolio management may be faced with replenishing the portfolio in a possibly disadvantageous interest rate environment. Investments in foreign securities (including ADRs) involve special risks, including foreign currency risk and the possibility of substantial volatility due to adverse political, economic or other developments. These risks are magnified for investments made in emerging markets. Investments in a certain industry or sector may pose additional risk due to lack of diversification and sector concentration. Investments in real estate securities can be subject to fluctuations in the value of the underlying properties, the effect of economic conditions on real estate values, changes in interest rates, and risk related to renting properties, such as rental defaults. There are special risks associated with an investment in commodities, including market price fluctuations, regulatory changes, interest rate changes, credit risk, economic changes and the impact of adverse political or financial factors.

Nonfinancial assets, such as closely-held businesses, real estate, oil, gas and mineral properties, and timber, farm and ranch land, are complex in nature and involve risks including total loss of value. Special risk considerations include natural events (for example, earthquakes or fires), complex tax considerations, and lack of liquidity. Nonfinancial assets are not suitable for all investors. Always consult with your independent attorney, tax advisor, investment manager, and insurance agent for final recommendations and before changing or implementing any financial, tax, or estate planning strategy.

**Alternative investments such as derivatives, hedge funds, private equity funds, and funds of funds can result in higher return potential but also higher loss potential. Changes in economic conditions or other circumstances may adversely affect your investments. Before you invest in alternative investments, you should consider your overall financial situation, how much money you have to invest, your need for liquidity, and your tolerance for risk. Alternative investments are speculative and involve a high degree of risk. An investor could lose all or a substantial amount of his or her investment. There is no secondary market nor is one expected to develop and there may be restrictions on transferring fund investments. Alternative investments may be leveraged and performance may be volatile. Alternative investments have high fees and expenses that reduce returns and are generally subject to less regulation than the public markets. The information provided does not constitute an offer to purchase any security or investment or any other advice.**

**The hedge fund indices shown are provided for illustrative purposes only. They do not represent benchmarks or proxies for the return of any particular security holding or alternative investment. The hedge fund universe from which the components of the indices are selected is based on funds which have continued to report results for a minimum period of time. This prerequisite for fund selection interjects a significant element of "survivor bias" into the reported levels of indices, as generally only successful funds will continue to report for the required period, so that the funds from which the statistical analysis or the performance of the indices to date is derived necessarily tend to have been successful. There can however, be no assurance that such funds will continue to be successful in the future.**

# Important Disclosures (continued)

Alternative Investments are speculative and subject to a high degree of risk. Although risk management policies and procedures can be effective in reducing or mitigating the effects of certain risks, no risk management policy can completely eliminate the possibility of sudden and severe losses, illiquidity and the occurrence of other material adverse effects. Some or all alternative investment programs may not be suitable for certain investors. Many alternative investment products, specifically private equity and most hedge funds, require purchasers to be “qualified purchasers” within the meaning of the federal securities laws (generally, individuals who own at least \$5 million in “investments” and institutional investors who own at least \$25 million in “investments,” as such term is defined in the federal securities laws). No assurance can be given that any alternative investment’s investment objectives will be achieved. In addition to certain general risks, each product will be subject to its own specific risks, including strategy and market risk.

Investors should bear in mind that the global financial markets are subject to periods of extraordinary disruption and distress. During the financial crisis of 2008-2009, many private investment funds incurred significant or even total losses, suspended redemptions or otherwise severely restricted investor liquidity, including increasing the notice period required for redemptions, instituting gates on the percentage of fund interests that could be redeemed in any given period and creating side-pockets and special purpose vehicles to hold illiquid securities as they are liquidated. Other funds may take similar steps in the future to prevent forced liquidation of their portfolios into a distressed market. In addition, investment funds implementing alternative investment strategies are subject to the risk of ruin and may become illiquid under a variety of circumstances, irrespective of general market conditions.

Reference to indices, or other measures of relative market performance over a specified period of time (each, an “index”) are provided for illustrative purposes only, do not represent a benchmark or proxy for the return or volatility of any particular product, portfolio, or security holding. Indices are unmanaged. The figures for the index reflect the reinvestment of dividends but do not reflect the deduction of any fees or expenses which would reduce returns. We strongly recommend that these factors be taken into consideration before an investment decision is made. Neither the Chief Investment Office nor the index sponsor can verify the validity or accuracy of the self reported returns of the managers used to calculate the index returns. The Chief Investment Office does not guarantee the accuracy of the index returns and does not recommend any investment or other decision based on the results presented. The indices referred in the presentation do not reflect the performance of any account or fund managed by Bank of America, Merrill, or their affiliates, or of any other specific fund or account, and do not reflect the deduction of any management or performance fees or expenses. Indices are unmanaged and results shown are not reduced by taxes or transaction costs such as fees. It is not possible to invest directly in an Index.

There may be conflicts of interest relating to the alternative investment and its service providers, including Bank of America Corporation, and its affiliates, who are engaged in businesses and have clear interests other than that of managing, distributing and otherwise providing services to the alternative investment. These activities and interests include potential multiple advisory, transactional and financial and other interests in securities and instruments that may purchase or sell such securities and instruments. These are considerations of which investors in the alternative investments should be aware. Additional information relating to these conflicts is set forth in the offering materials for the alternative investment.

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