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Investment Institute

FIRST QUARTER **2021**

Market Charts

Turning data into knowledge

All data shown in the charts as of fourth quarter (Q4) 2020 and reflect the most recent information available. Please see disclosures for the risks associated with the asset classes and for the definitions of market-based and economic indexes.

Contents

Economy highlights

Macro

- We expect the global economy to grow just over 5% in 2021, recovering from a deep recession that sent global GDP (gross domestic product) down an estimated 3.1% in 2020.[1]
- Labor-intensive services industries are playing a more prominent role in the growth cycle in the U.S. and in other parts of the world, leaving jobs and consumer spending driven by them more exposed to the coronavirus's fallout.
- U.S.-China trade tensions are expected to be contained by the incoming Biden administration, easing a headwind to the recovery of world trade.

Domestic

- The U.S. is facing headwinds from a worsening pandemic, leaving it vulnerable to a "soft patch" in economic growth through the early months of 2021.
- We believe one of the main challenges in this economic cycle is the ability to provide enough of a safety net to overcome consumer caution and contain future outbreaks of the pandemic.
- U.S. economic growth is expected to accelerate by spring or summer as the distribution of an effective vaccine heralds the start of a post-pandemic phase of this economic cycle.

International

- Emerging markets are expected to pace the global growth recovery in 2021, led by China and by neighboring emerging Asian economies.
- Developed Europe and Japan face a slow start to the growth recovery in 2021 due to fallout from the pandemic in 2020. We expect these areas to gain momentum soon after vaccine distribution in the spring.

1. Economic forecasts are provided by Wells Fargo Investment Institute as of December 31, 2020.

Global economy scorecard

Metric	World	U.S.	Eurozone	Japan	China
GDP growth (%YoY) as of 9/30/2020[1]	2.8	-2.8	-4.3	-5.7	4.9
Inflation (%YoY) as of 11/30/2020[1]	3.5	1.2	-0.3	-0.9	-0.5
Manufacturing Index level[2] as of 12/31/2020	53.8	60.7	55.2	50.0	53.0
Central bank rate (%) as of 12/31/2020	–	0.00 – 0.25	0.00	(0.10) – 0.00	4.35
Consumer Confidence Index level as of 12/31/2020[3]	–	88.6 ↓	-13.9 =	31.8 ↓	124.0 ↑
Unemployment rate (%) as of 12/31/2020[4]	–	6.7	8.3	2.9	4.2

Sources: Bloomberg, International Monetary Fund, and Wells Fargo Investment Institute. Consumer confidence scale differs by region/country. Up or down arrow indicates an increasing or decreasing level from the previous quarter. GDP = gross domestic product. YoY = year over year.

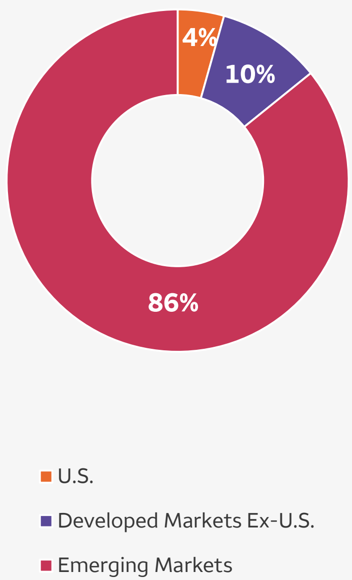
Key takeaways

- We expect the economy to continue its recovery from the pandemic-driven recession in 2021.
- We expect China's recovery to temper the deepest global recession in over 40 years, much as it did in 2009.

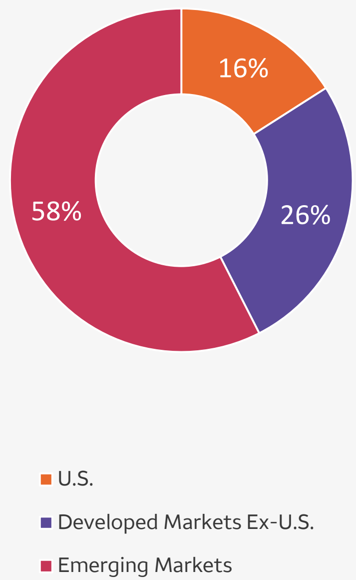
1. World GDP and Inflation data as of December 31, 2019.
2. U.S. Manufacturing Index level is the Institute for Supply Management Manufacturing Index®, which is a composite index based on the diffusion Indexes of five of the Indexes with equal weights: new orders, production, employment, supplier deliveries, and inventories. Global, eurozone, Japan, and China Manufacturing Index levels use the Markit Manufacturing PMI Index, which is an index developed from monthly business surveys used to monitor the condition of industries and businesses. An index value over 50 indicates expansion; below 50 indicates contraction. The values for the index can be between 0 and 100.
3. China data as of November 30, 2020.
4. Eurozone and Japan data as of November 30, 2020. China data as of September 30, 2020.

The world at a glance

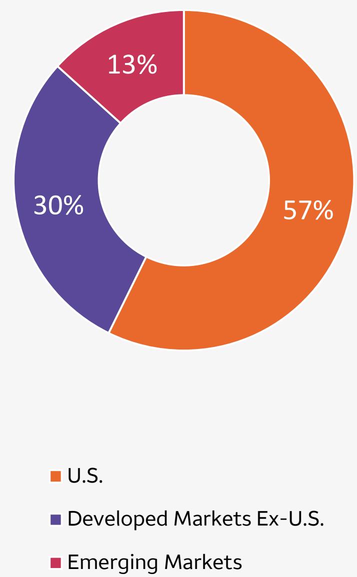
Population



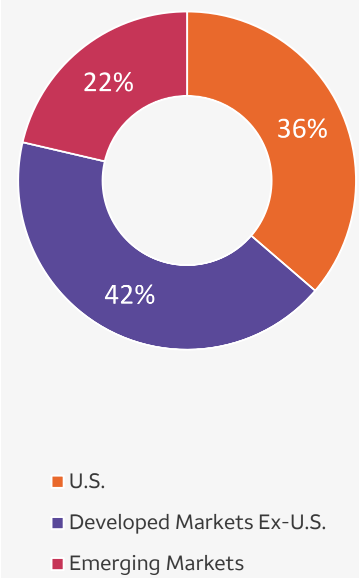
Gross domestic product (PPP)



Stock capitalization



Bonds outstanding



Sources: IMF Global Economic Outlook database, October 2020; MSCI, as of December 31, 2020; and Bank for International Settlements, as of June 30, 2020. Emerging markets includes frontier markets. Purchasing power parity (PPP) is a theory which states that exchange rates between currencies are in equilibrium when their purchasing power is the same in each of the two countries. Stock capitalization is based on country weightings in the MSCI All Country World Index. MSCI All Country World Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of 23 developed and 23 emerging markets. An index is unmanaged and not available for direct investment.

Key takeaways

- The vast majority of the world's population resides in emerging and frontier markets. These regions comprise roughly 60% of the global economy but just 13% of the world's equity markets.
- Emerging markets have been issuing more sovereign debt as interest rates moved lower and the U.S. dollar weakened, and now carry about 20% of the total global government debt.

Factors that affect the global economy

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Global economic forces

Tailwinds

- Aggressive monetary and fiscal stimulus
- Low interest rates
- "Purchasing power" boost from lower inflation
- "Pent-up" demand created by the lockdown
- Promising coronavirus vaccine news
- Increased savings and stock-market wealth

Headwinds

- Rise in coronavirus infections
- Geopolitical risks (the uncertain impact of an incoming Biden administration on relations with China and other global hot spots)
- Rising bankruptcies, associated layoffs
- Lingering consumer caution amid pandemic concerns
- An abrupt end to government support programs at the start of 2021

Source: Wells Fargo Investment Institute, as of December 31, 2020. Subject to change.

Key takeaways

- The global economy is poised for a solid 5.2% global growth recovery in 2021 from a deep recession that sent global GDP (gross domestic product) down an estimated -3.1% in 2020.
- Consumers have been playing a prominent role in the growth cycle in the U.S. and other parts of the world, leaving global growth that much more exposed to the coronavirus's fallout.

Contribution to global GDP growth

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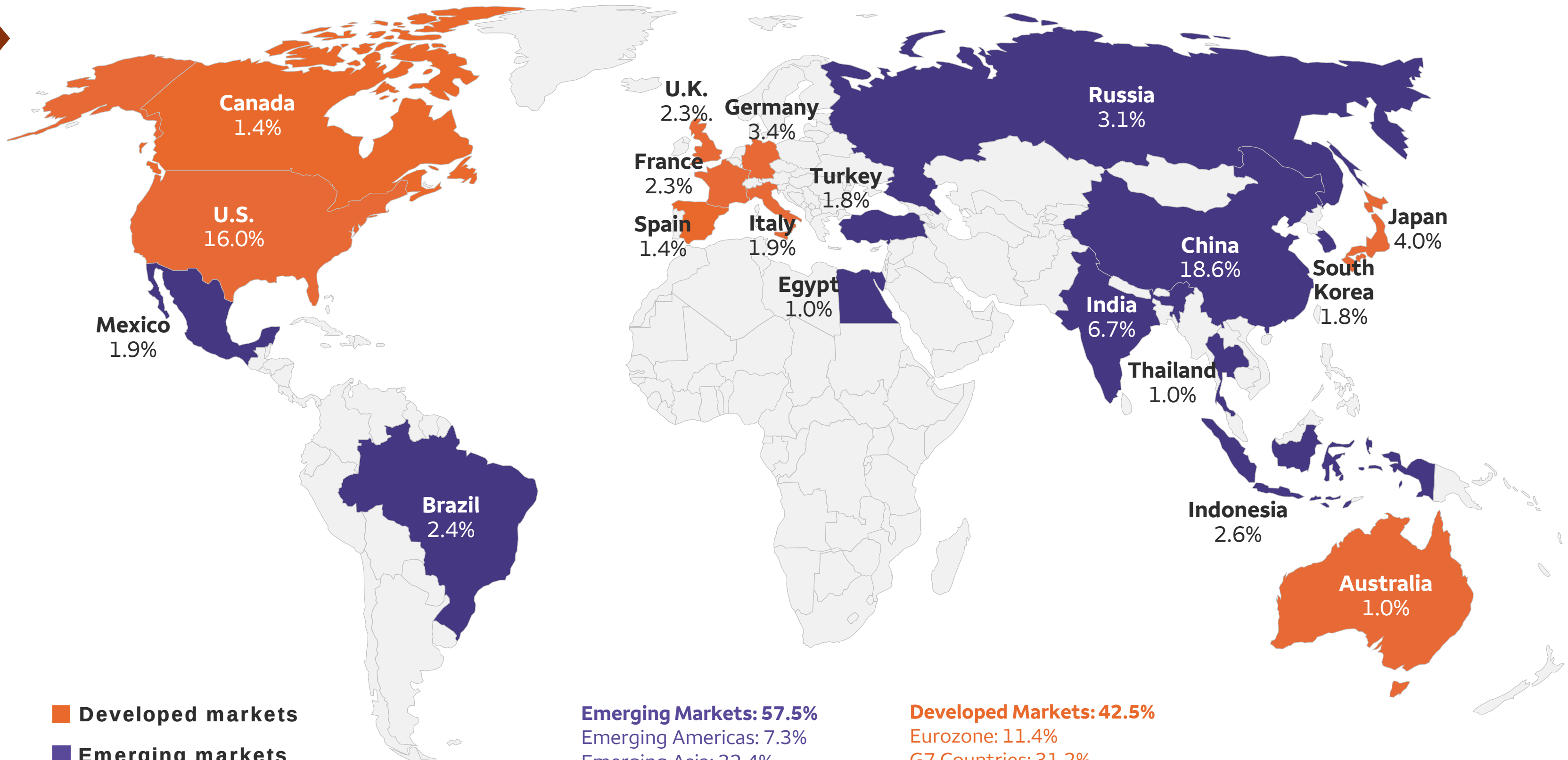

Developed markets

Emerging markets

Emerging Markets: 57.5%
Emerging Americas: 7.3%
Emerging Asia: 32.4%
Emerging Europe: 7.6%
Middle East/North Africa: 6.3%
Sub-Saharan Africa: 3.1%

Developed Markets: 42.5%
Eurozone: 11.4%
G7 Countries: 31.2%

Sources: International Monetary Fund and Wells Fargo Investment Institute, as of December 31, 2020. G7 countries include Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States. GDP=gross domestic product.

Key takeaways

- We expect the global economy to grow around 5% in 2021, paced by emerging-market strength centered on China.
- Recovering growth in emerging markets may be unsynchronized — led by China, reinforced by emerging Europe and India, with Latin America lagging behind.
- Vaccine distribution likely will trigger a growth recovery in developed market economies in the spring or summer after a pandemic-related delay early in the year.

Global economic activity is expanding

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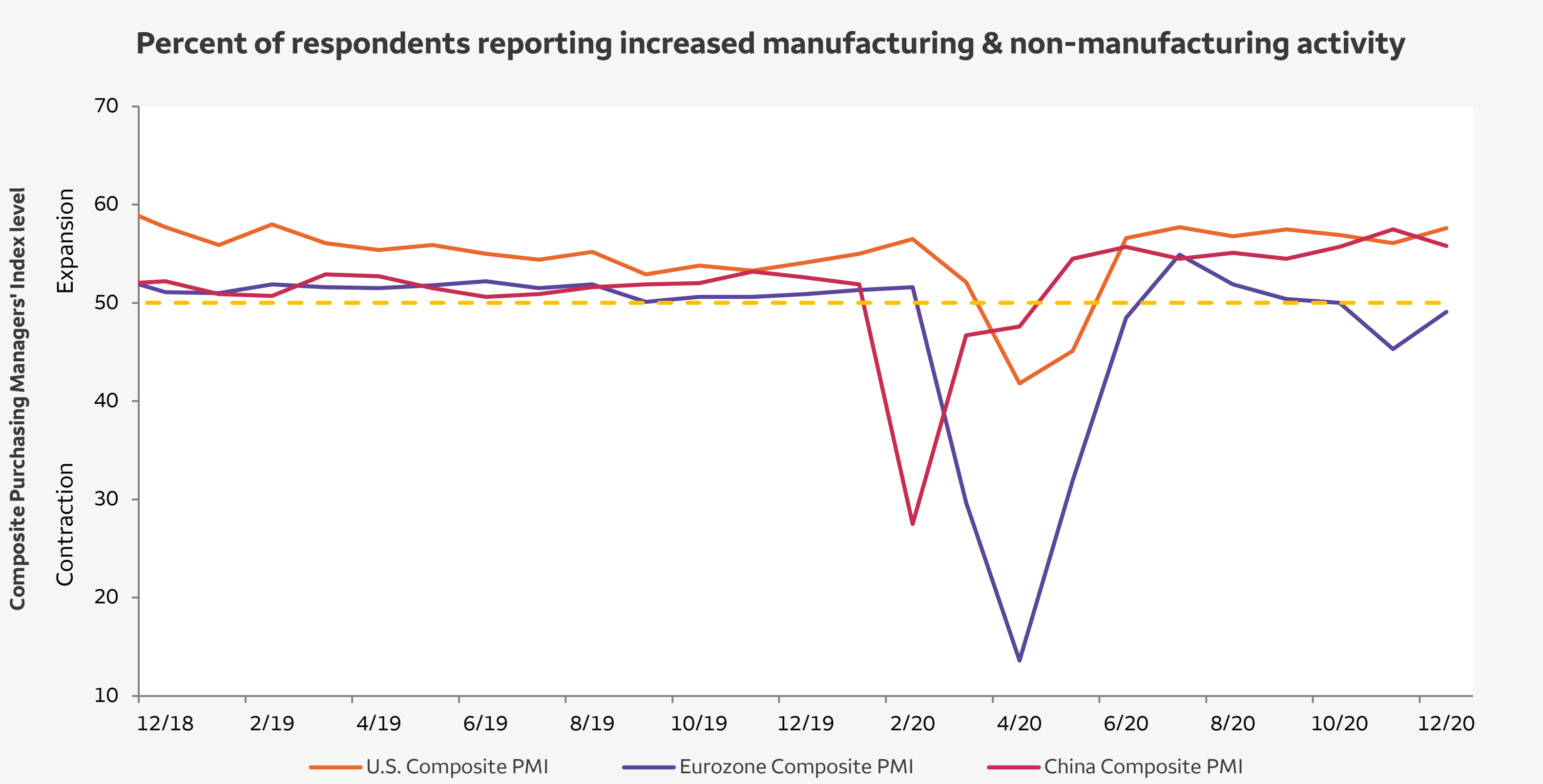

Sources: Bloomberg and Wells Fargo Investment Institute. Monthly data from December 31, 2018 to December 31, 2020. U.S. Composite Purchasing Managers' Index (PMI) level is the Institute for Supply Management Composite Index®, which is a composite index based on the diffusion Indexes of five of the Indexes with equal weights: new orders, production, employment, supplier deliveries, and inventories. Eurozone and China PMI levels use the Markit Manufacturing PMI Index, which is an index developed from monthly business surveys used to monitor the condition of industries and businesses. An index value over 50 indicates expansion; below 50 indicates contraction. The values for the index can be between 0 and 100.

Key takeaways

- China and the U.S. are on the leading edge of a modest economic recovery. China recovered early by successfully containing the spread of the coronavirus after being the first country to suffer through a lockdown of its economy in January and February.
- Eurozone economies are sliding into a "double-dip" recession caused by efforts to contain rising coronavirus infections.

Financial market stress has eased

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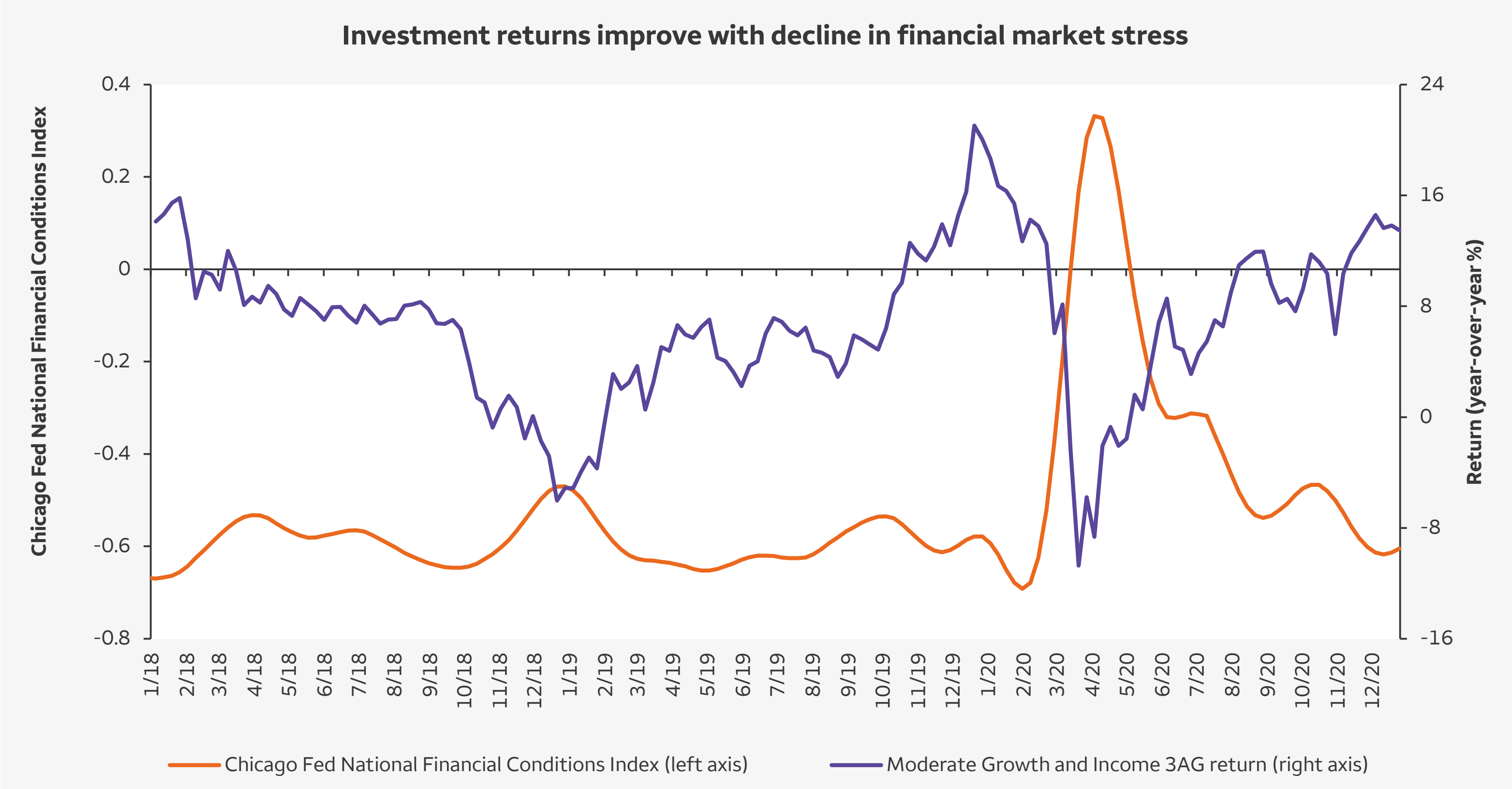
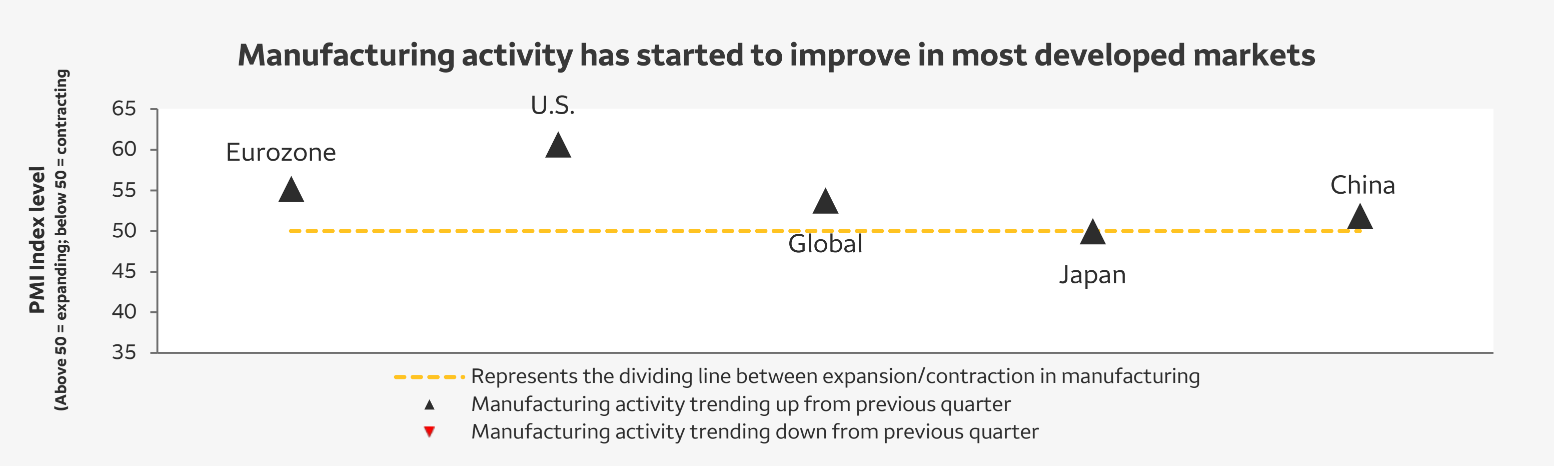


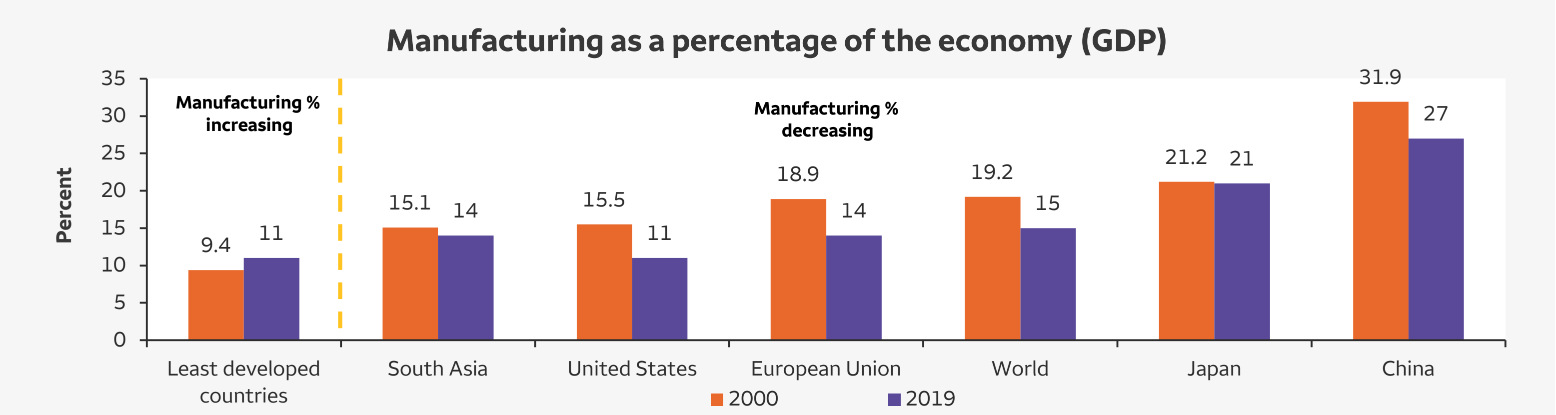
Sources: Bloomberg, © 2020 – Morningstar Direct, All Rights Reserved[1], and Wells Fargo Investment Institute. Weekly data from January 1, 2018 to December 31, 2020. The National Financial Conditions Index (NFCI) is constructed to have an average value of zero and a standard deviation of one over a sample period extending back to 1973. Positive values of the NFCI indicate financial conditions that are tighter than on average, while negative values indicate financial conditions that are looser than on average. An index is unmanaged and not available for direct investment**.** Performance for the Moderate Growth and Income (MGI) 3AG Portfolio is hypothetical and for illustrative purposes only. Index returns do not represent investment performance or the results of actual trading. Index returns reflect general market results, assume the reinvestment of dividends and other distributions, and do not reflect deduction for fees, expenses or taxes applicable to an actual investment. An index is unmanaged and not available for direct investment. **Hypothetical and past performance does not guarantee future results.** Composition of the MGI 3AG Portfolio is provided at the end of the report.

Key takeaways

- The Federal Reserve's quick and aggressive action in shoring up support for the financial market restored confidence among investors, lowering one measure of financial stress from an 11-year high.
- Improved investor confidence encouraged a move back into stocks and a broader array of financial assets, ultimately lifting stocks to record highs during the second half of 2020.

Manufacturing is improving globally





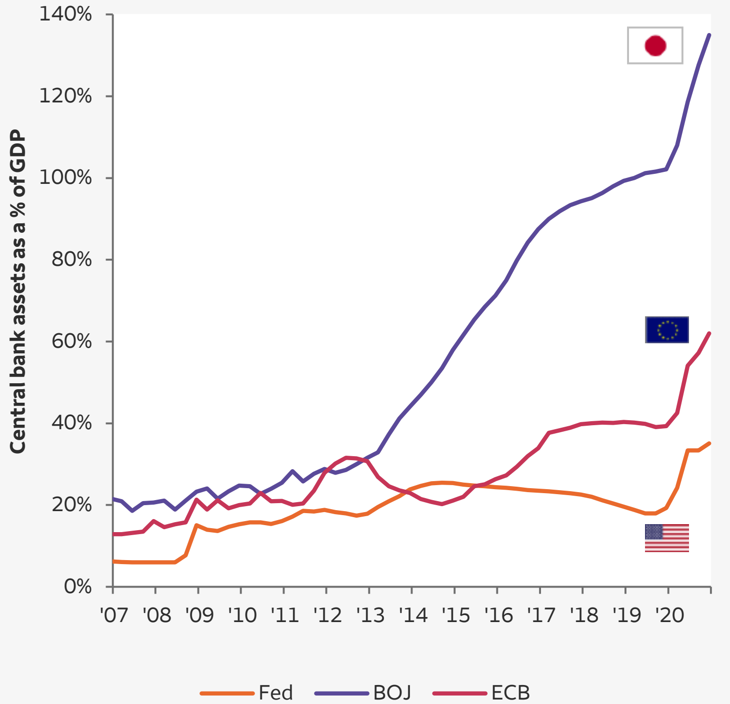
Sources: Bloomberg, IHS Markit and Wells Fargo Investment Institute, as of December 31, 2020, World Bank national accounts data, and OECD National Accounts data files as of December 31, 2019. United States, World, and Japan manufacturing as percentage of the economy data as of December 31, 2018. The PMI Index is an index developed from monthly business surveys used to monitor the condition of industries and businesses. GDP = gross domestic product.

Key takeaways

- Manufacturing activity has led the recovery since the spring, benefitting from an early re-opening of factories and supply chains and from less exposure to government lockdowns.
- We believe cost advantages are significant enough to keep emerging economies as an integral part of a global supply chain. Diversification away from China's supply-chain advantages will be gradual.

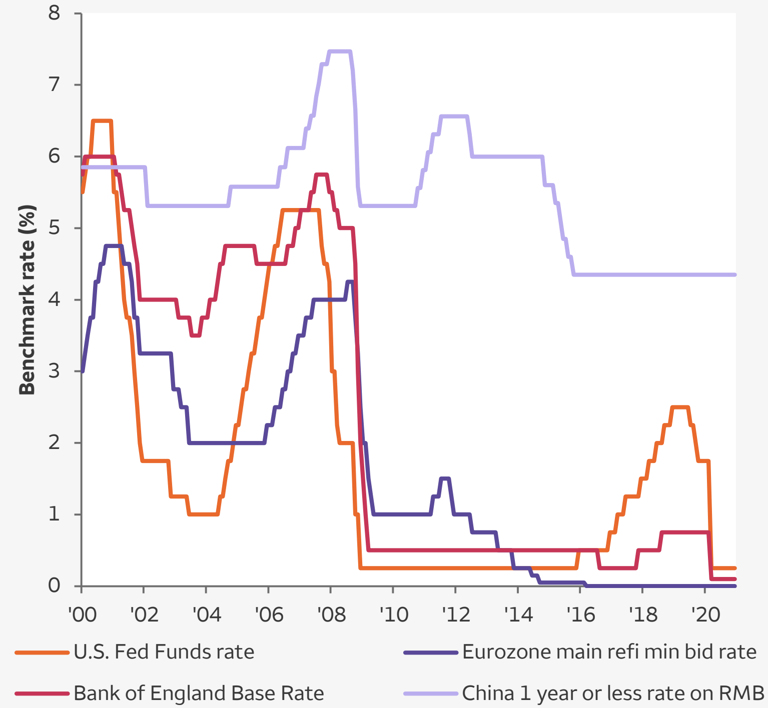
Global monetary policy in action

Major central banks have once again expanded their balance sheets



Sources: Bloomberg and Wells Fargo Investment Institute. Quarterly data from January 1, 2007 to December 31, 2020. Fed = Federal Reserve. BOJ = Bank of Japan. ECB = European Central Bank. GDP = gross domestic product.

Global benchmark rates remain low

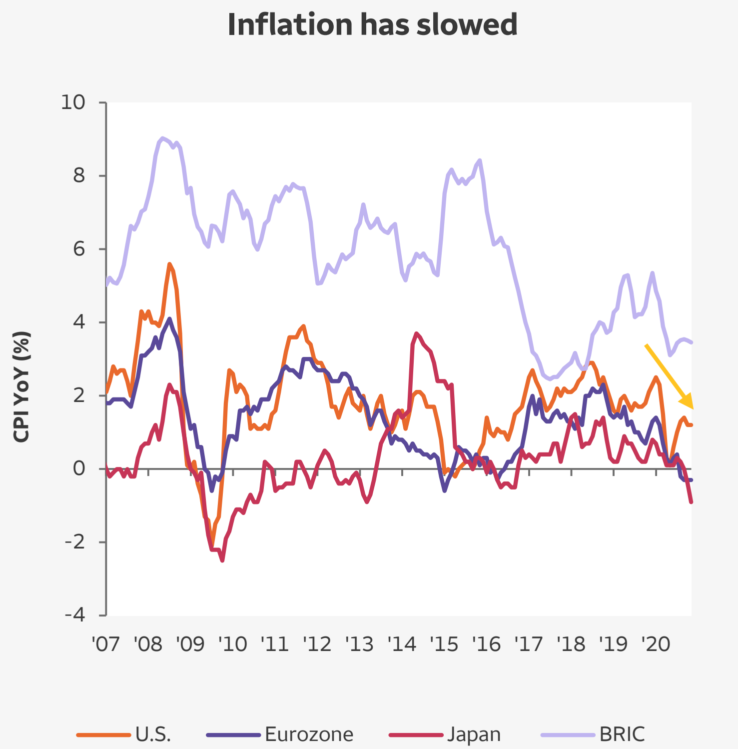


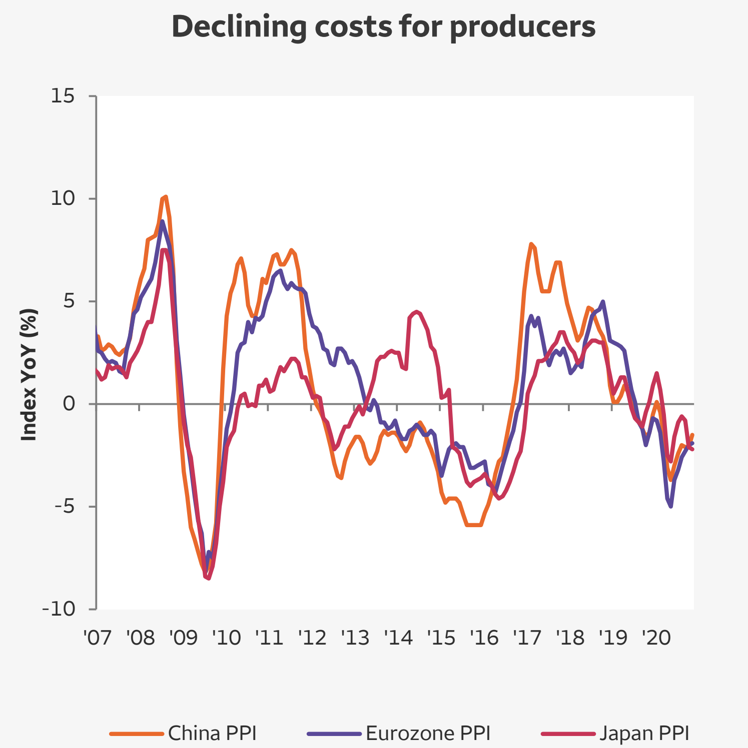
Sources: Bloomberg and Wells Fargo Investment Institute. Monthly data from January 1, 2000 to December 31, 2020. Headline central bank policy rates of selected countries. RMB = Chinese Yuan Renminbi.

Key takeaways

- The Bank of Japan and the European Central Bank have joined the Federal Reserve (Fed) in resuming aggressive stimulus through expanded quantitative easing (QE) in an effort to counter the worst of the pandemic's economic impact.
- Aggressive support by the Fed extended beyond renewed and expanded QE to new special credit facilities resurrected from the last financial crisis. Some have been withdrawn, but they could return if needed.

Inflation across regions





Sources: Bloomberg, and Wells Fargo Investment Institute. Monthly data from January 1, 2007 to November 30, 2020. BRIC is an acronym for the economies of Brazil, Russia, India, and China. CPI is the Consumer Price Index, which measures the price of a fixed basket of goods and services purchased by an average consumer. PPI is the Producer Price Index, which measures the average change over time in the selling prices received by domestic producers for their output. The prices included in the PPI are from the first commercial transaction for many products and some services. YoY = year-over-year.

Key takeaways

- Stubbornly low inflation is a setback in central-bank efforts to normalize inflation and interest rates, prompting talk of even more aggressive stimulus by some key central banks.
- Global central-bank efforts to spur inflation are risking more highly-charged financial markets as the pandemic's threat recedes.

Where are we today?

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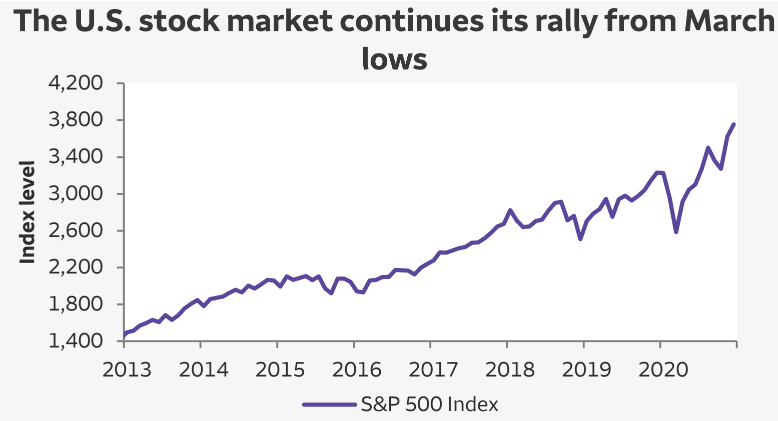

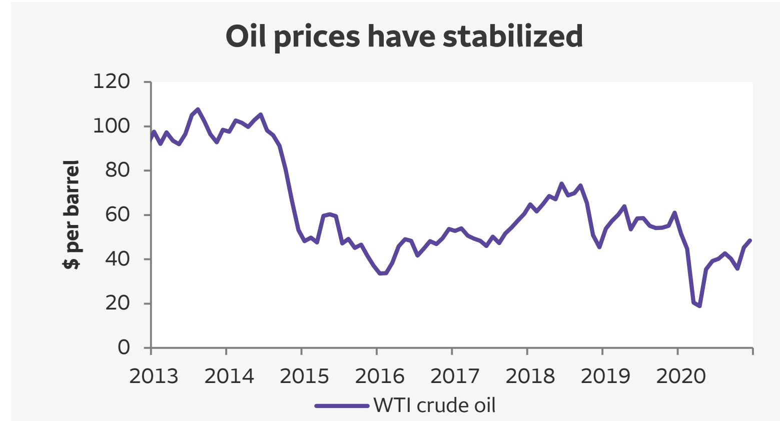

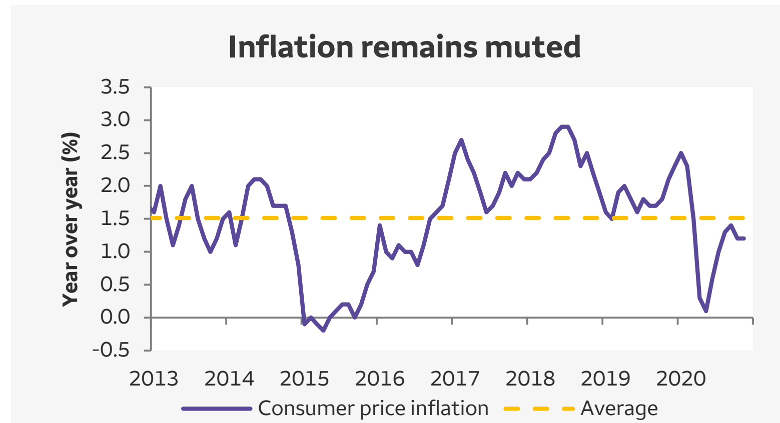

Sources: Bloomberg and Wells Fargo Investment Institute. Monthly data from January 1, 2013 to December 31, 2020. Consumer price inflation: monthly data from January 1, 2013 to November 30, 2020. S&P 500 Index is a market capitalization-weighted index composed of 500 widely held common stocks that is generally considered representative of the U.S. stock market. The Consumer Price Index measures the average price of a basket of goods and services. West Texas Intermediate (WTI) is a grade of crude oil used as a benchmark in oil pricing. U.S. Dollar Index (USDX) measures the value of the U.S. dollar relative to the majority of its most significant trading partners. This index is similar to other trade-weighted indexes, which also use the exchange rates from the same major currencies. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.**

Key takeaways

- Against a supportive backdrop of low inflation and continued central bank support, we expect U.S. equities to hit all-time highs in 2021.
- A falling dollar and stable-to-higher commodities prices provide a positive backdrop for emerging market equities.

Where are we headed?

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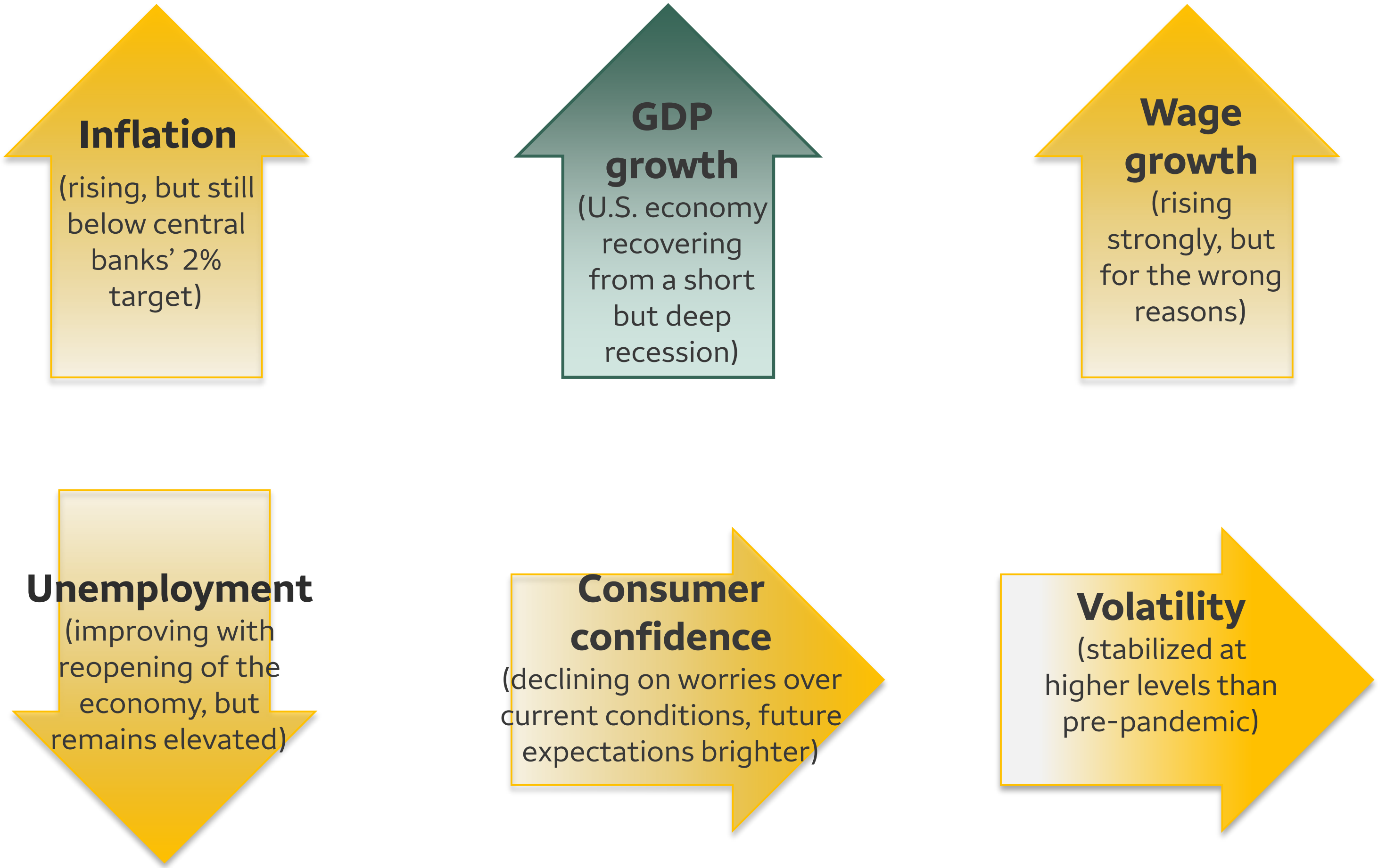

Source: Wells Fargo Investment Institute, as of December 31, 2020. Subject to change. GDP = gross domestic product.

Key takeaways

- Economic data should show continuous improvement in the coming months as the worst effects of the pandemic recede.
- The Federal Reserve will continue to support the economy until inflation and unemployment move closer to its targets.
- Wage growth has surged, but only because so many lower-paid workers have lost their jobs.

U.S. inflation remains below Fed's target

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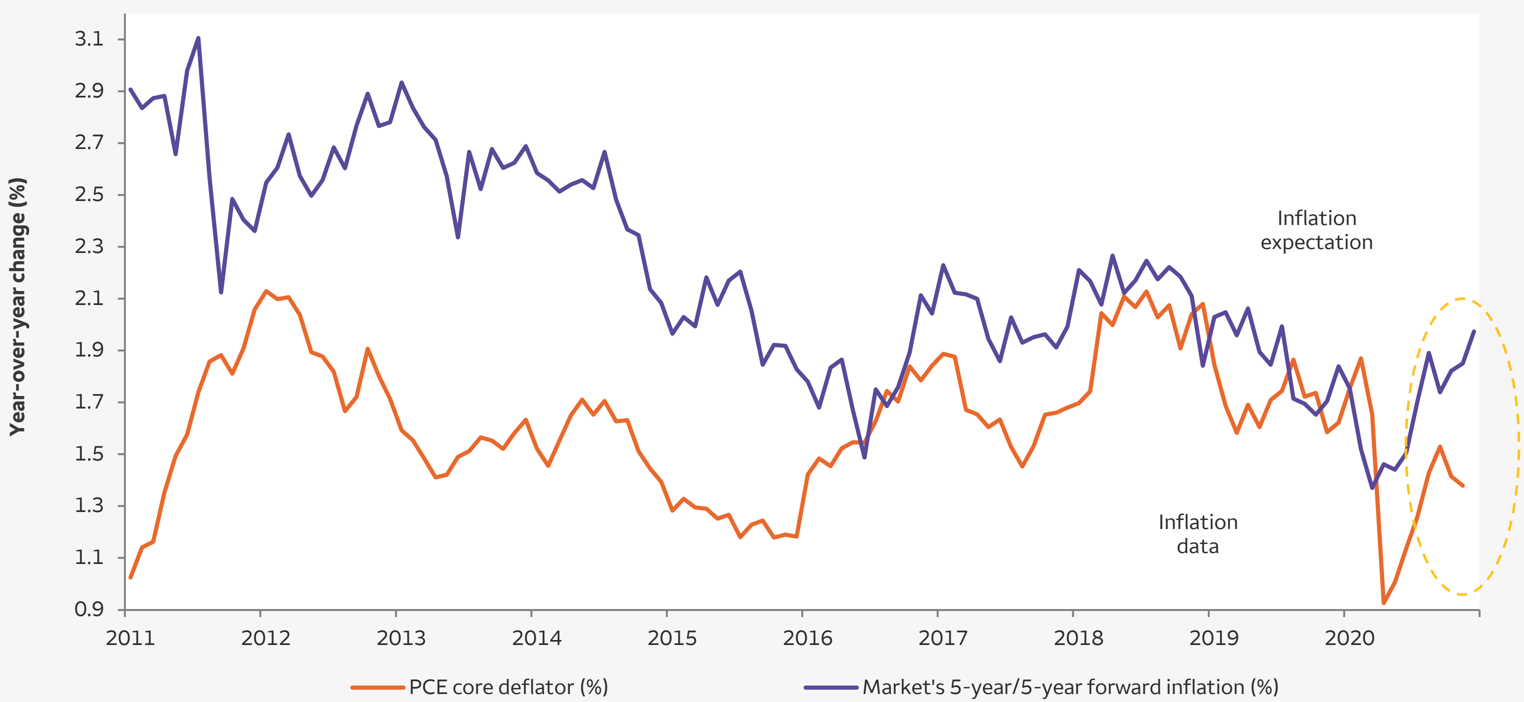
U.S. inflation has bounced back



Sources: Bloomberg and Wells Fargo Investment Institute. Market's 5-year/5-year forward inflation rate: monthly data from January 1, 2011 to December 31, 2020. PCE core deflator: monthly data from January 1, 2011 to November 30, 2020. PCE deflators (or personal consumption expenditure deflators) track overall price changes for goods and services purchased by consumers. Deflators are calculated by dividing the appropriate nominal series by the corresponding real series and multiplying by 100. The market's 5-year/5-year forward inflation rate is a common measure that is used by central banks and dealers to look at the market's future inflation expectations.

Key takeaways

- We expect inflation (as measured by the Consumer Price Index) to rise a modest 1% for all of 2020 and average less than 2% in 2021 as economic activity picks up.
- This rate of inflation will keep the Federal Reserve in an easing mode.

Insight from U.S. leading indicators

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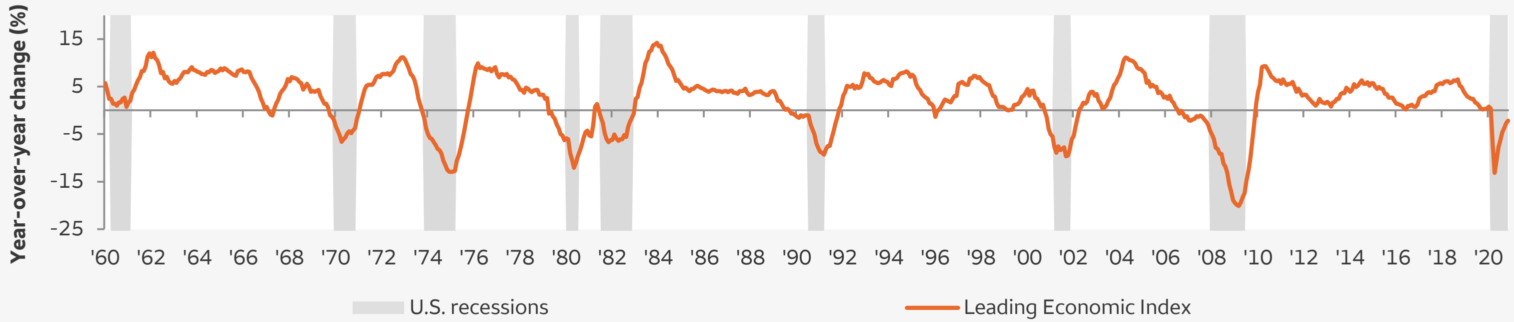
Leading economic indicators are improving from Q2 lows



Tracking the components of the LEI

INDICATOR	CURRENT LEVEL	LONG-TERM TREND
Leading Economic Index	Improving	Improving
Average workweek	Weakening	Weakening
Unemployment claims (fewer are better)	Neutral	Improving
New orders: consumer goods and materials	Neutral	Improving
ISM New Orders Index	Improving	Improving
New orders: nondefense capital goods excluding aircraft	Weakening	Weakening
Building permits	Improving	Improving
S&P 500 Index	Improving	Improving
Leading Credit Index	Improving	Improving
Interest rate spread (10-year UST less federal funds)	Improving	Improving
Avg. consumer expectations for business and economic conditions	Weakening	Weakening

Sources: Bloomberg, Factset, and Wells Fargo Investment Institute. Monthly data from January 1, 1960 to November 30, 2020. The Conference Board Leading Economic Index® (LEI) is a composite average of 10 leading indicators in the U.S. It is one of the key elements in the Conference Board's analytic system, which is designed to signal peaks and troughs in the business cycle. The ISM Manufacturing Index® is a composite index based on five indicators with equal weight. Long-term trend = current versus 12-month moving average.

Key takeaways

- Leading indicators can be useful for signaling future economic events, such as an impending economic slowdown.
- The Leading Economic Index® (LEI) although imperfect, can be a good signal for recession. During the expansion that preceded the pandemic it signaled the possibility of a recession 3 times including just before the latest recession.

We expect U.S. GDP to rebound in 2021

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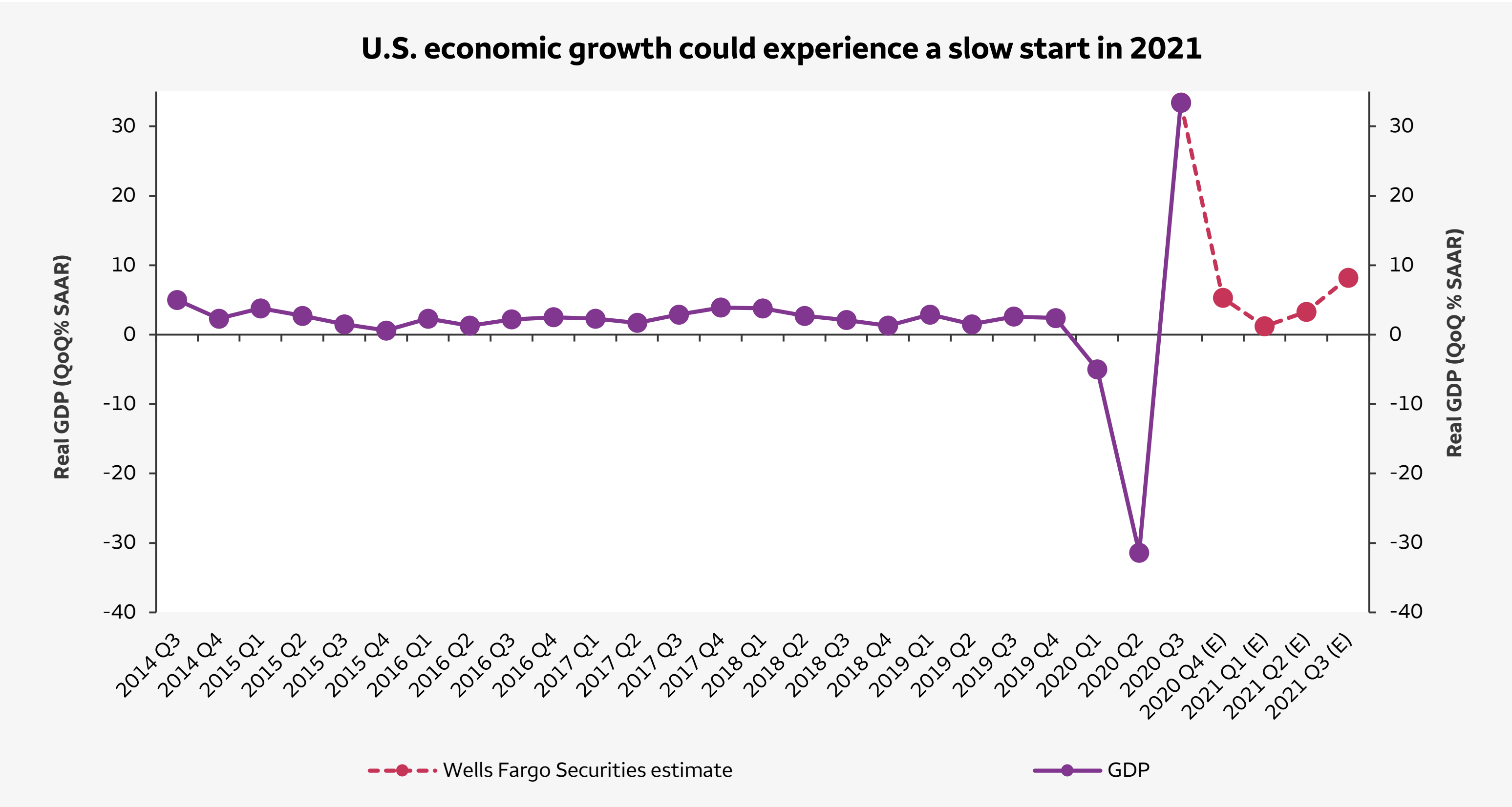

Sources: Bloomberg, Wells Fargo Securities, and Wells Fargo Investment Institute. Quarterly data from July 1, 2014 to September 30, 2020. Q4 2020–Q3 2021 are Wells Fargo Securities forecasts, as of December 10, 2020. Forecasts are not guaranteed and are subject to change. GDP = gross domestic product. QoQ = quarter over quarter. SAAR = seasonally adjusted annual rate.

Key takeaways

- Housing, consumer spending, business investment, and manufacturing have supported broad-based growth from the economy's pandemic-related free fall.
- We expect moderating growth through the first quarter of 2021 ahead of another economic revival sparked by distribution of the coronavirus vaccine.

The job market still faces pandemic headwinds

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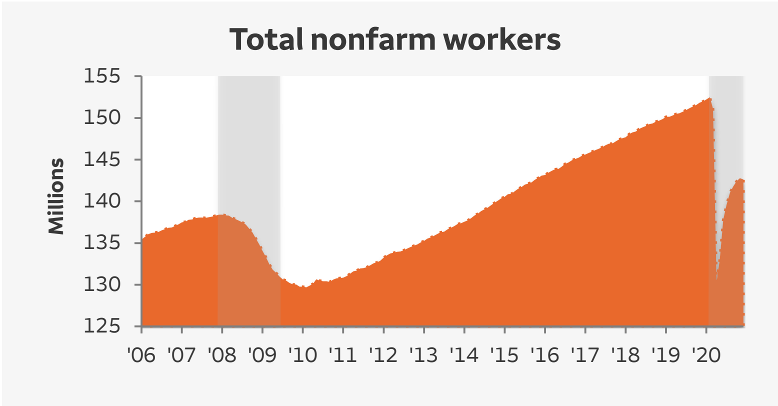

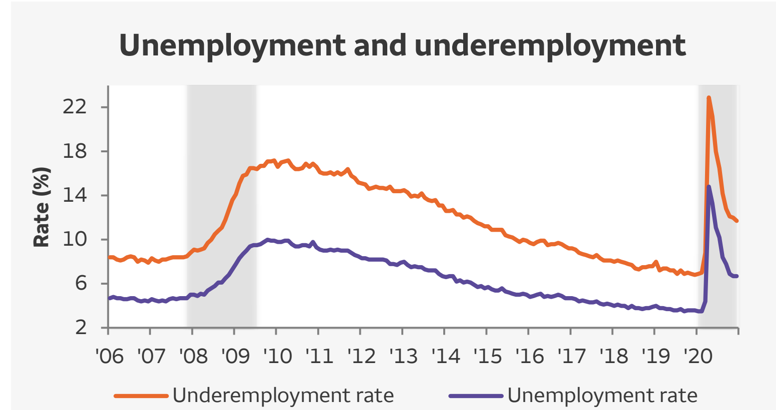

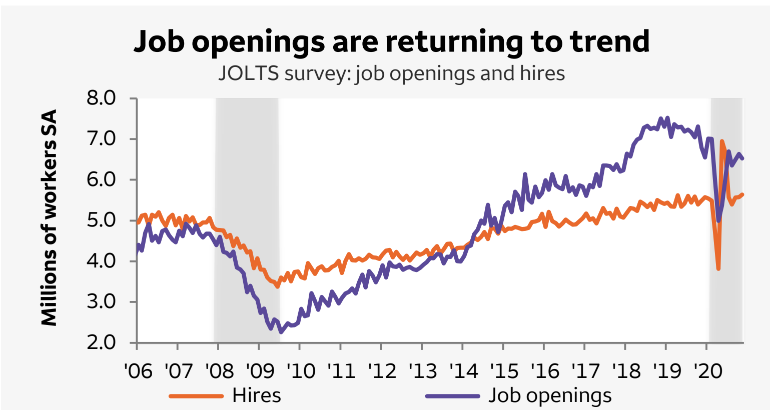

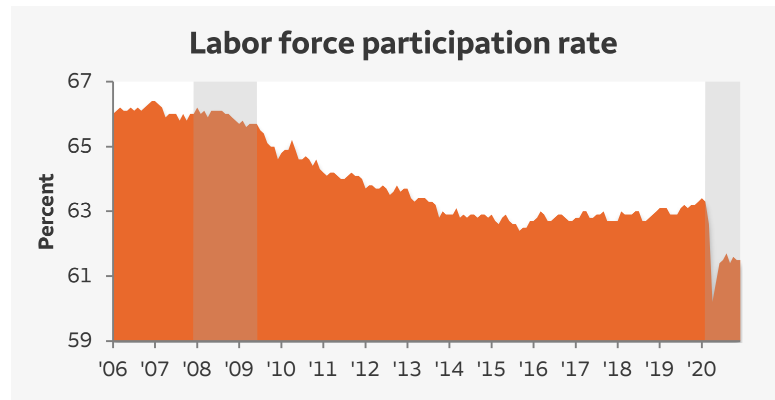

Sources: Bloomberg and Wells Fargo Investment Institute. Monthly data from January 1, 2006 to November 30, 2020.. JOLTS = Job Openings and Labor Turnover Survey. Shaded area represents a U.S. economic recession. SA = seasonally adjusted.

Key takeaways

- The unemployment rate and other barometers of labor-market conditions have improved from the steep lockdown-induced declines in the second quarter of 2020. However, a winter surge in virus cases has temporarily stalled progress.
- We expect the labor market to continue to improve through 2021 but remain weaker than it was before the pandemic.

On average, U.S. consumer in good shape

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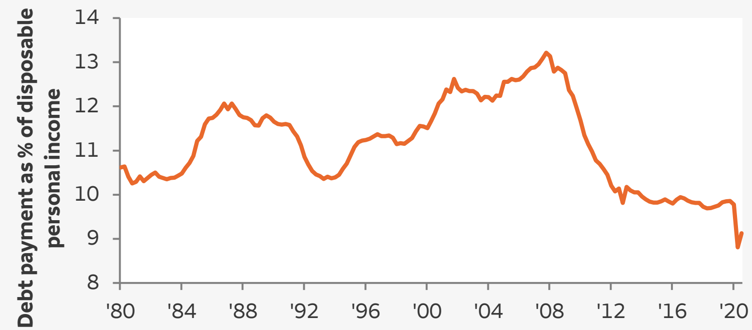
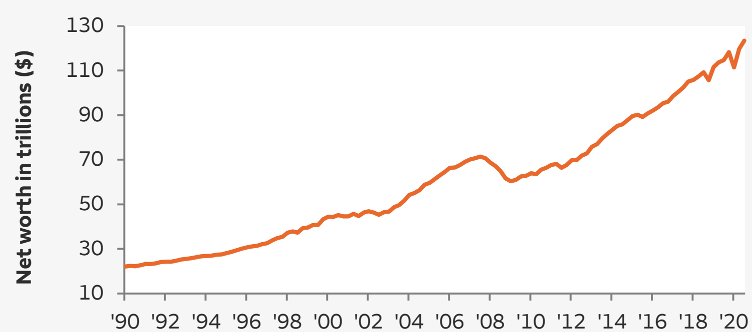
Consumer balance sheets remain strong

Household debt service ratio at an all-time low



Household net worth has recovered

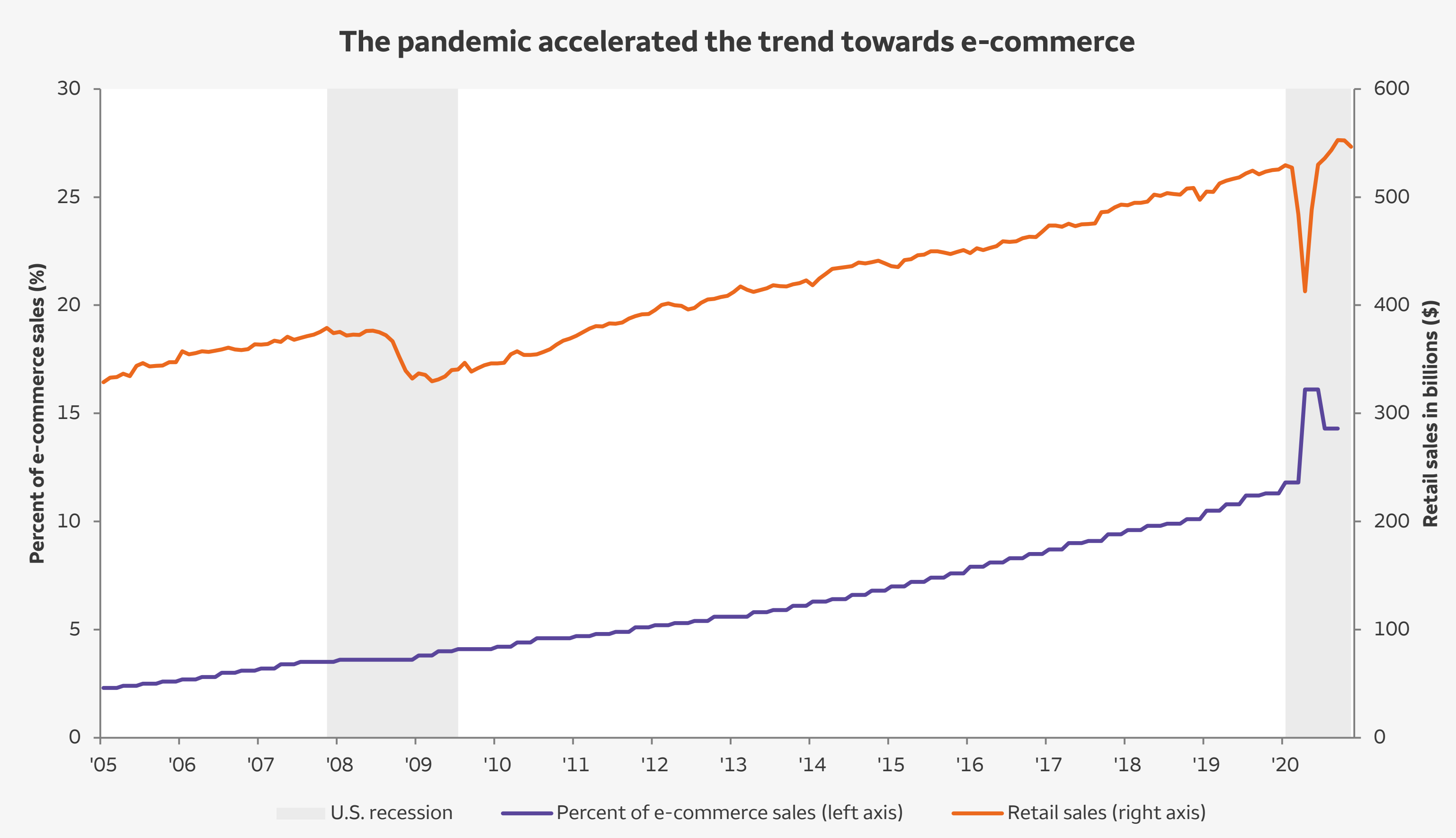


Sources: Bloomberg, Federal Reserve Board, and Wells Fargo Investment Institute. Consumer balance sheet data as of September 30, 2020. Household debt service ratio: quarterly data from January 1, 1980 to September 30, 2020. Household net worth: quarterly data from January 1, 1990 to September 30, 2020.

Key takeaways

- Consumer balance sheets have quickly recovered from the steep recession.
- The stock market recovery and stability of the housing market has resulted in U.S. household net worth climbing to new highs.
- We believe that low interest rates and a firm housing market will continue to support household net worth.

Changing consumer behavior



Sources: Bloomberg and Wells Fargo Investment Institute. Retail sales: monthly data from January 1, 2005 to November 30, 2020. E-commerce sales: quarterly data from January 1, 2005 to September 30, 2020.

Key takeaways

- Consumer spending has returned to its pre-pandemic trend but with a different mix of retail channels and goods consumed.
- Stay-at-home shoppers during the pandemic have boosted online sales' share of overall retail sales.
- Post-pandemic, we expect e-commerce's share of online shopping to continue growing, albeit at a slower pace than during the pandemic.

Housing market holding up well through the recession

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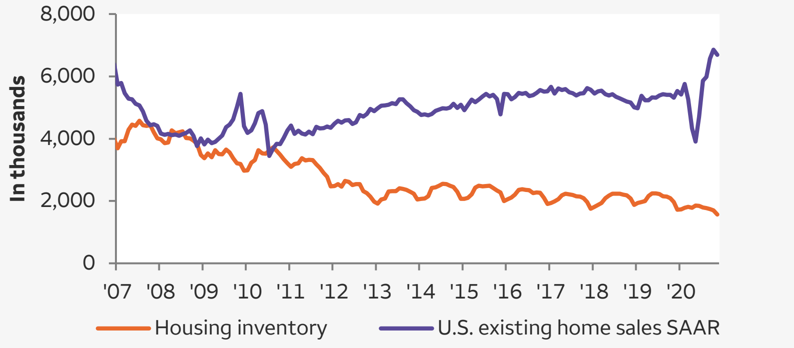
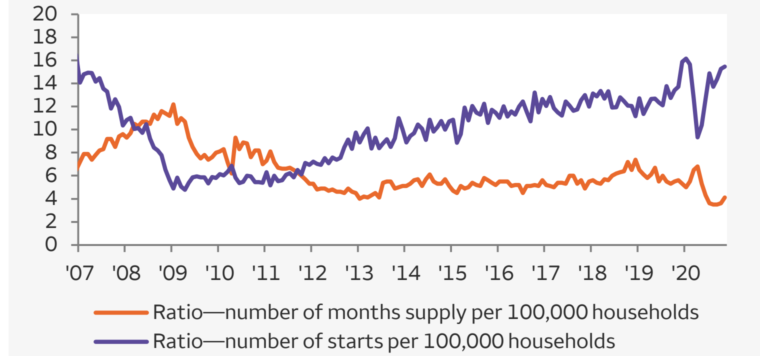
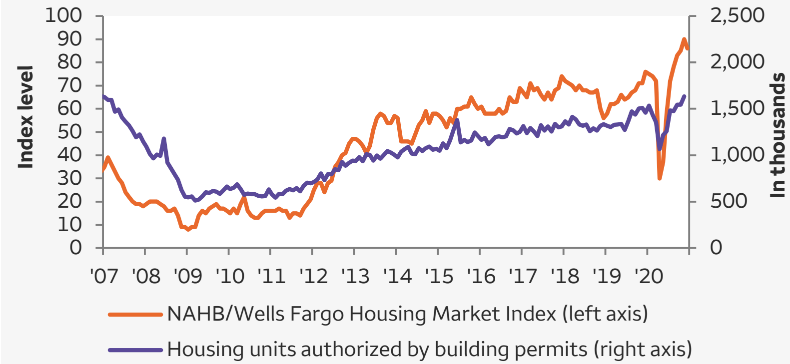
Demand vs. supply



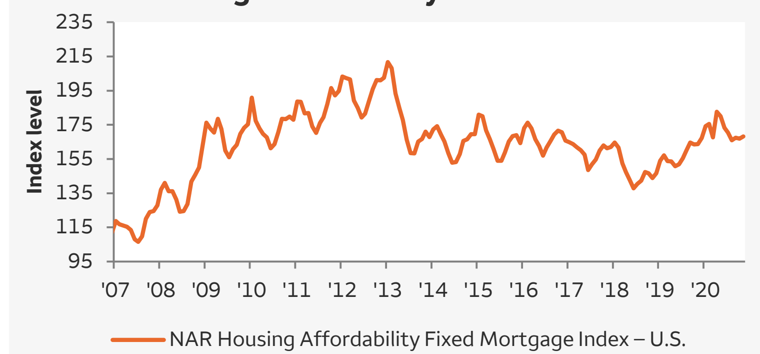
Supply is very constrained



Housing outlook and building permits



Housing affordability remains intact



Sources: Bloomberg, Factset, and Wells Fargo Investment Institute. Monthly data from January 1, 2007 to November 30, 2020. NAHB/Wells Fargo Housing Market Index: monthly data from January 1, 2007 to December 31, 2020. NAR Housing Affordability Index: monthly data from January 1, 2007 to November 30, 2020. SAAR = seasonally adjusted annual rate. NAHB (National Association of Home Builders)/Wells Fargo Housing Market Index is a widely watched gauge of the outlook for the U.S. housing sector. The NAR (National Association of Realtors®) Housing Affordability Index measures whether or not a typical family could qualify for a mortgage loan on a typical home.

Key takeaways

- The pandemic unexpectedly ignited another housing “boom,” supporting the economic recovery. This trend was the result of tight supply and demand stoked by a move away from core urban areas that were most impacted by the lockdowns.
- The Fed’s aggressive stimulus is partly designed to keep mortgage rates down, in line with lower Treasury yields.
- Elevated home prices have helped to underpin homeowner wealth, borrowing capacity, and spending.

Service sector sensitive to economic fluctuations

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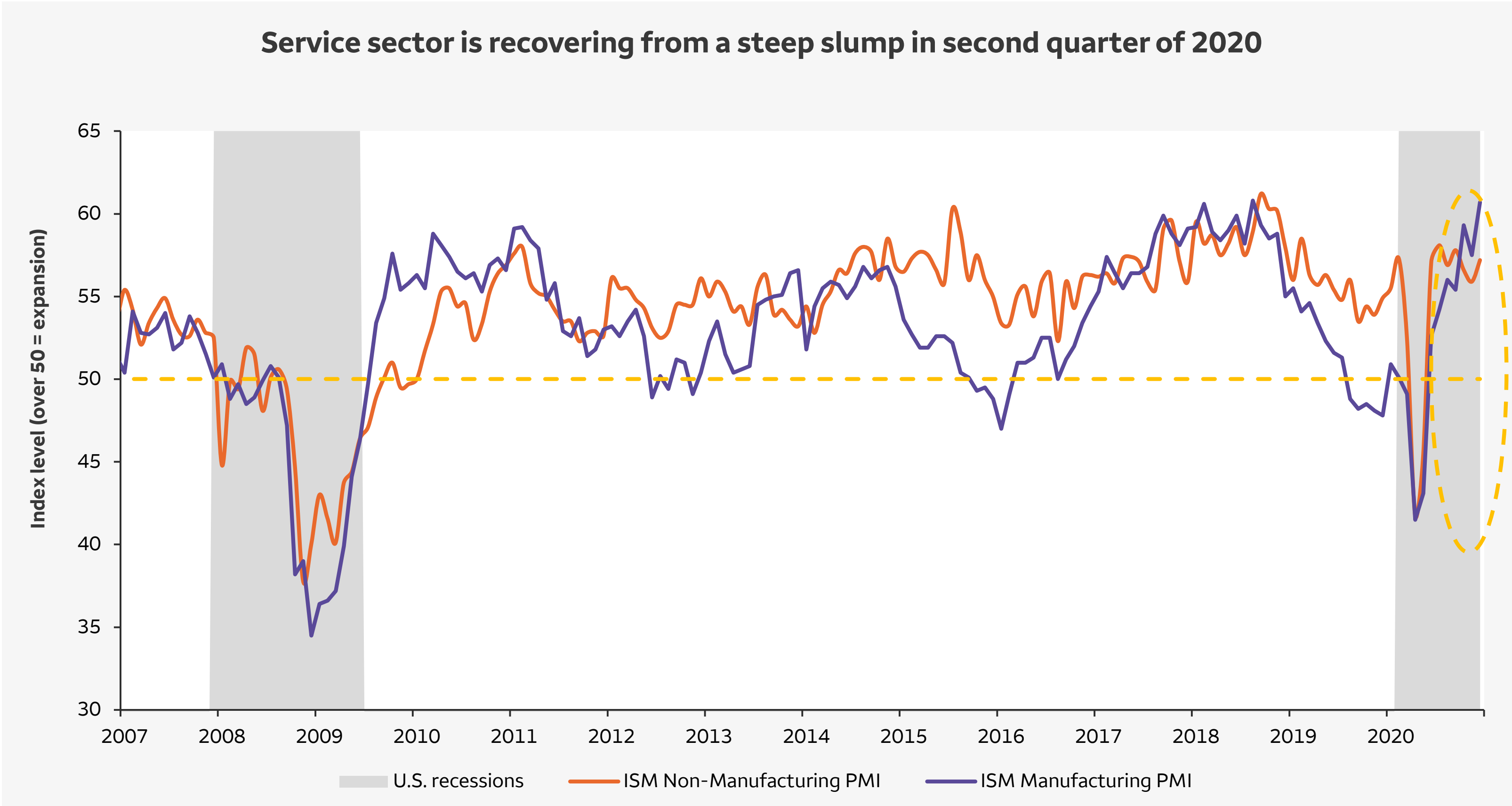
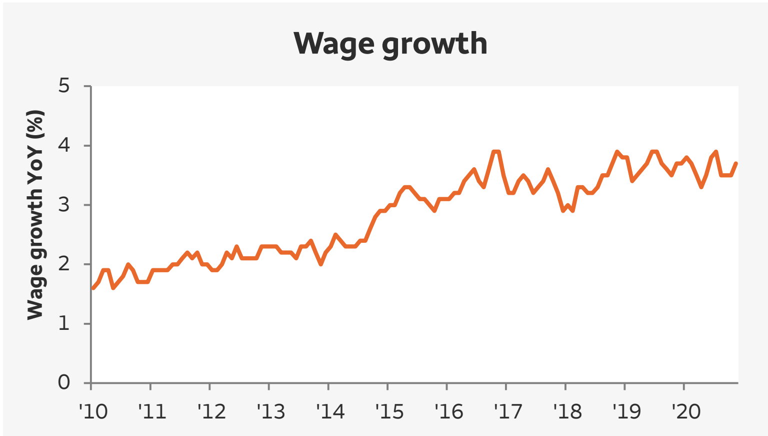


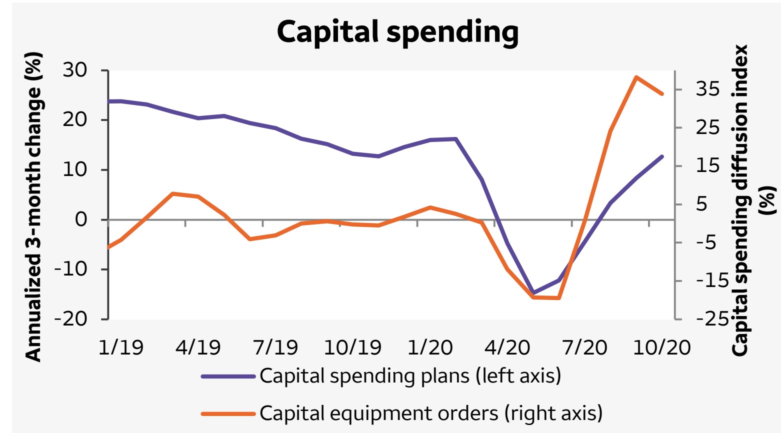
Sources: Bloomberg, Institute for Supply Management, and Wells Fargo Investment Institute. Monthly data from January 1, 2007 to December 31, 2020. The Institute for Supply Management (ISM) Manufacturing Index® is a composite index based on five indicators with equal weights. The ISM Non-Manufacturing Index® is a composite index based on four indicators with equal weights.

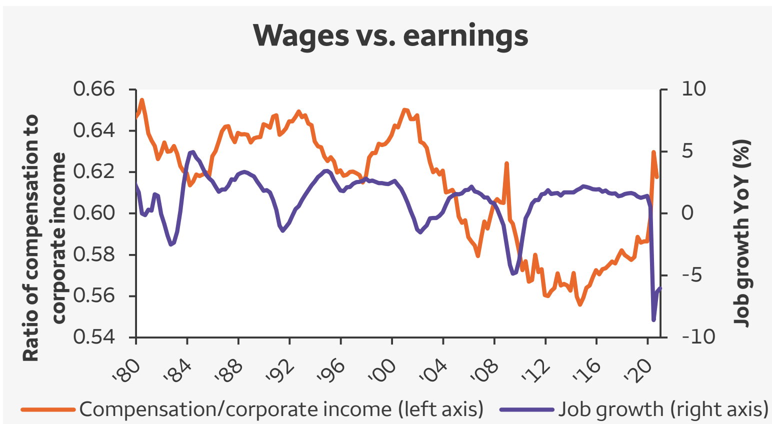
Key takeaways

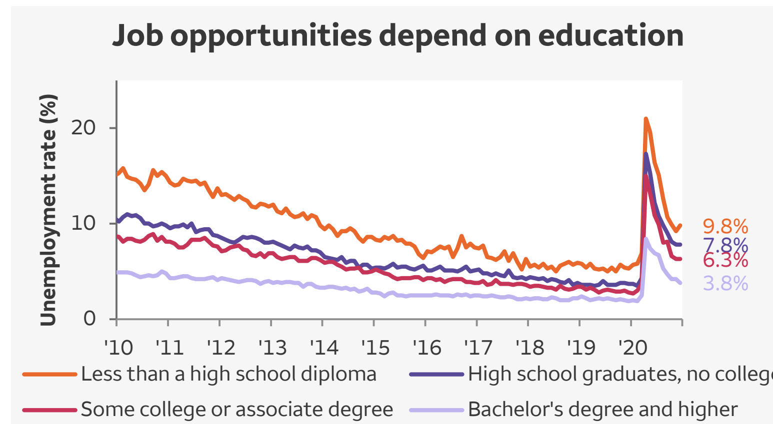
- Recent purchasing manager reports show demand for traditionally more stable services industries improving after being hit hard during the economic slump.
- Resilience, thus far, of U.S. services industries has stood in contrast to a deepening slump by these frontline sectors in Europe.

Wages and capital spending plans climb









Sources: Bloomberg, Bureau of Economic Analysis, Bureau of Labor Statistics, U.S. Commerce Department, and Wells Fargo Investment Institute. Wage growth: monthly data from January 1, 2010 to November 30, 2020. Capital spending and equipment orders: monthly data from January 1, 2019 to November 30, 2020. Compensation/corporate income: quarterly data from January 1, 1980 to September 30, 2020. Job growth: quarterly data from January 1, 1980 to December 31, 2020. Unemployment rate: monthly data from January 1, 2010 to December 31, 2020. YoY = year-over-year. Capital spending plans represented by three month moving average of a diffusion index of Dallas, Kansas City, N.Y., Philadelphia, and Richmond Fed district respondents reporting planned increase. Capital equipment orders represented by three month moving average of non-defense equipment, ex. aircraft.

Key takeaways

- Unlike prior recessionary periods, wage growth has technically risen as more lower-paid employees are out of work and higher earners make up a larger share of the employed.
- The economic tragedy of this pandemic-induced recession is that it has reversed recent progress toward boosting employment among lower-paid, less-skilled, and other less-employable workers.

Uncertainty weighs on confidence

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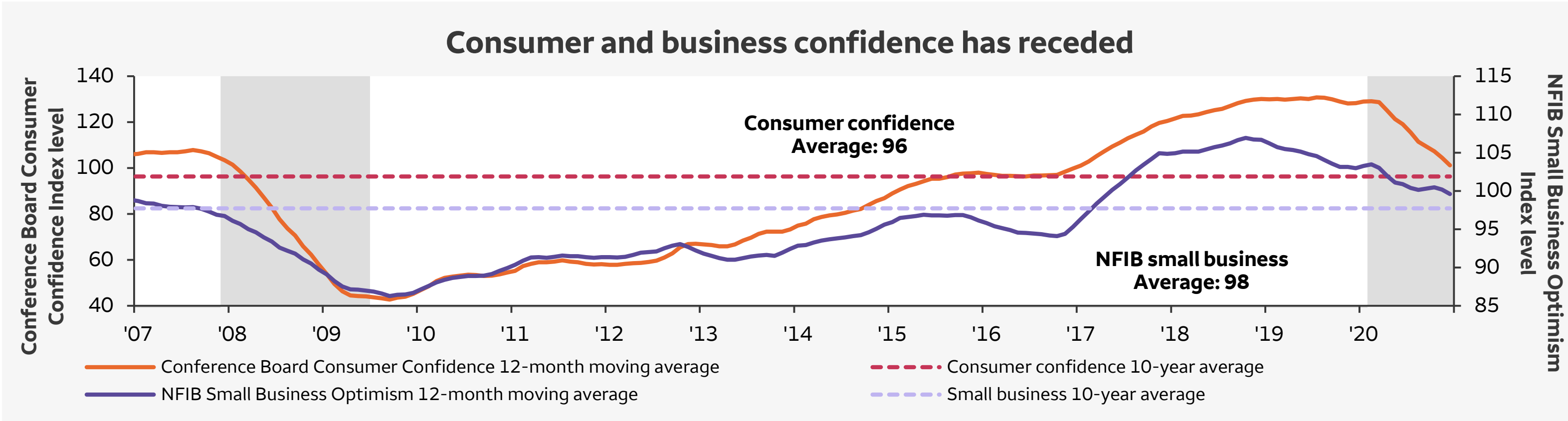

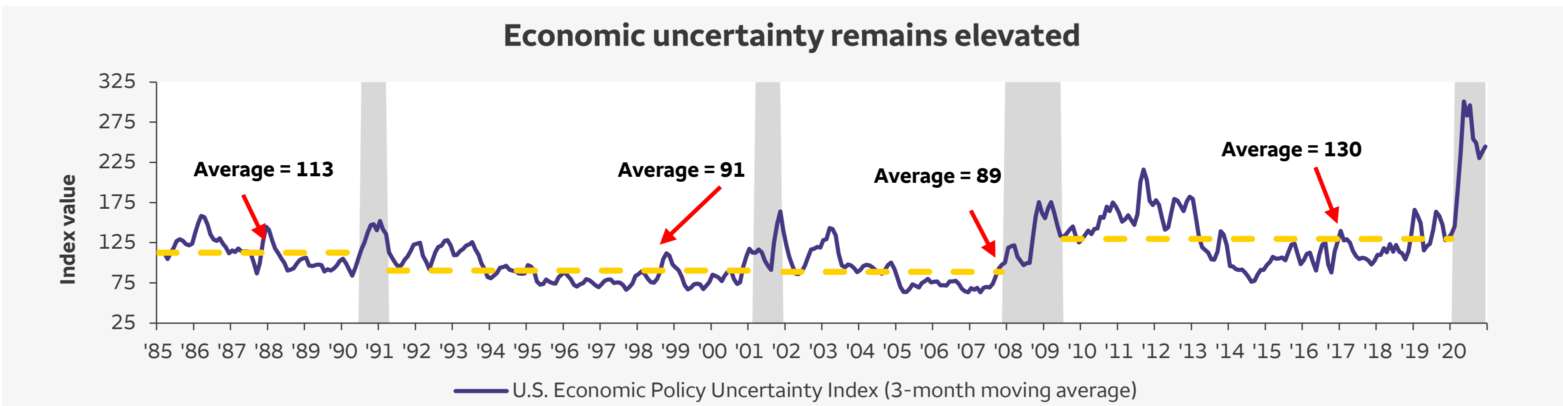

Sources: The Conference Board; National Federation of Independent Business (NFIB); Economic Policy Uncertainty Index—Baker, Bloom, and Davis; Bloomberg; and Wells Fargo Investment Institute. Consumer confidence and small business optimism: monthly data from January 1, 2007 to December 31, 2020. Economic policy uncertainty: monthly data from January 1 1985 to December 31, 2020. Shaded area represents a U.S. economic recession. The Consumer Confidence Index (CCI) tracks sentiment among households or consumers. The NFIB Small Business Index tracks the general state of the economy as it relates to businesses.

Key takeaways

- Economic policy uncertainty has eased since the election, but we expect it to remain elevated above pre-pandemic levels.
- Consumers wary of spiking virus cases and the re-imposition of economic restrictions in the winter months are, nevertheless, more optimistic about the future with vaccinations underway.

Equities highlights

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General

- Equity markets climbed in the fourth quarter of 2020, with positive developments —including a likely divided government election outcome and additional fiscal stimulus in the U.S., a resolution to Brexit, and global coronavirus vaccine approvals.
- The S&P 500 Index should rise to new all-time highs in 2021.
- We expect the earnings recovery in global equity markets to continue well into 2021.

Domestic

- Fiscal and monetary stimulus have boosted investor sentiment, leading to a resurgence in cyclical sectors and a broadening of positive equity market returns.
- We have recently upgraded certain cyclical sectors that tend to perform well, as a strong recovery is likely underway.

International

- Looking ahead, we expect developed market equities earnings growth to lag those of U.S. companies as Europe and Japan contend with structural weaknesses.
- Emerging market (EM) economies and equities have seen well-balanced growth between exports and domestic spending.

Equity scorecard

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Asset class	4Q20 return (%)	YoY return (%)	P/E (trailing 12 months)			Dividend yield (%)
			Current[1]	20-year average[2]	20-year median	
U.S. Large Cap Equities	12.15	18.40	29.91	18.70	18.27	1.57
U.S. Mid Cap Equities	19.91	17.10	35.93	21.95	21.26	1.54
U.S. Small Cap Equities	31.37	19.96	N/A	43.09	37.89	1.19
Developed Market ex-U.S. Equities	16.09	8.28	43.74	24.97	17.68	2.38
Emerging Market Equities	19.77	18.69	25.47	13.68	13.39	1.89
Frontier Market Equities	11.23	1.65	14.35	–	–	3.37

Sources: Bloomberg, and Wells Fargo Investment Institute, as of December 31, 2020. YoY = year over year. P/E = price/earnings. Large cap = S&P 500 Index. Mid cap = Russell Midcap Index. Small cap = Russell 2000 Index. Developed market Ex-U.S. = MSCI EAFE Index. Emerging market = MSCI Emerging Markets Index. Frontier market = MSCI Frontier Markets Index. Yields represent past performance and fluctuate with market conditions. Current yields may be higher or lower than those quoted. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.** Please see the end of the report for the definitions of the indexes.

Key takeaways

- Equity markets climbed in the fourth quarter of 2020 with positive developments, including a likely divided government election outcome and additional fiscal stimulus in the U.S., a resolution to Brexit and global coronavirus vaccine approvals.

1. Current P/E for U.S. Small Cap Equities is N/A because current trailing 12 months earnings are negative for the Russell 2000 Index.
2. March 2009 to June 2009 and September 2020 to December 2020 P/Es for small cap have been removed due to their outlier condition.

Volatility rose several times during this cycle

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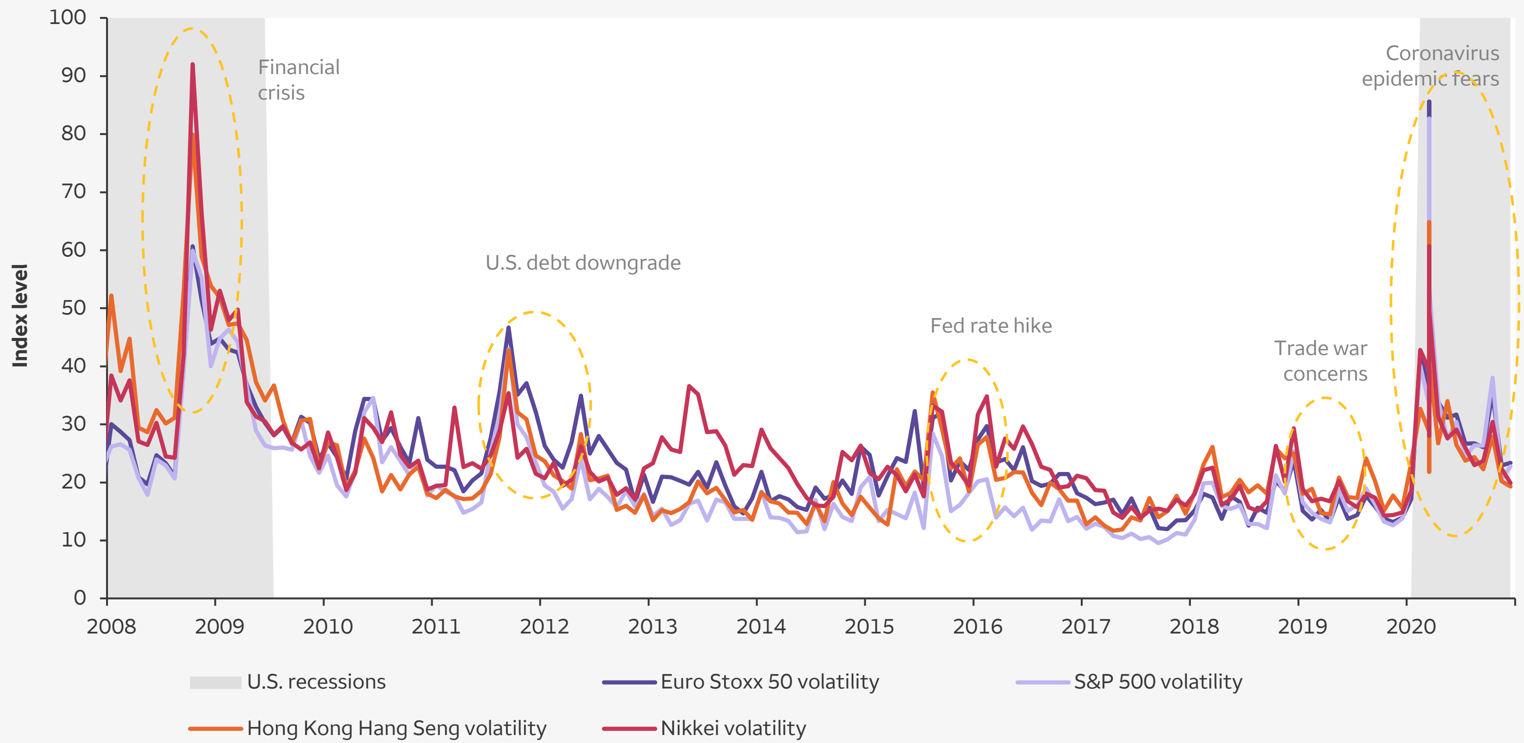

Sources: Bloomberg and Wells Fargo Investment Institute. Monthly data from January 1, 2008 to December 31, 2020. S&P 500 volatility measured by the CBOE Volatility Index® (VIX®). Euro STOXX 50 volatility measured by the VSTOXX Index. Hong Kong Hang Seng volatility measured by the HSI Volatility Index. Nikkei volatility measured by the VNKY Index. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.** Please see the end of the report for the definitions of the indexes.

Key takeaways

- Volatility receded quickly following the pandemic spike, and has settled at higher levels than prior to the pandemic, indicating a bit of residual uneasiness among investors.
- We expect periods of market uncertainty in 2021, but volatility can often present opportunities to invest in markets at a lower price point.

Market resilience

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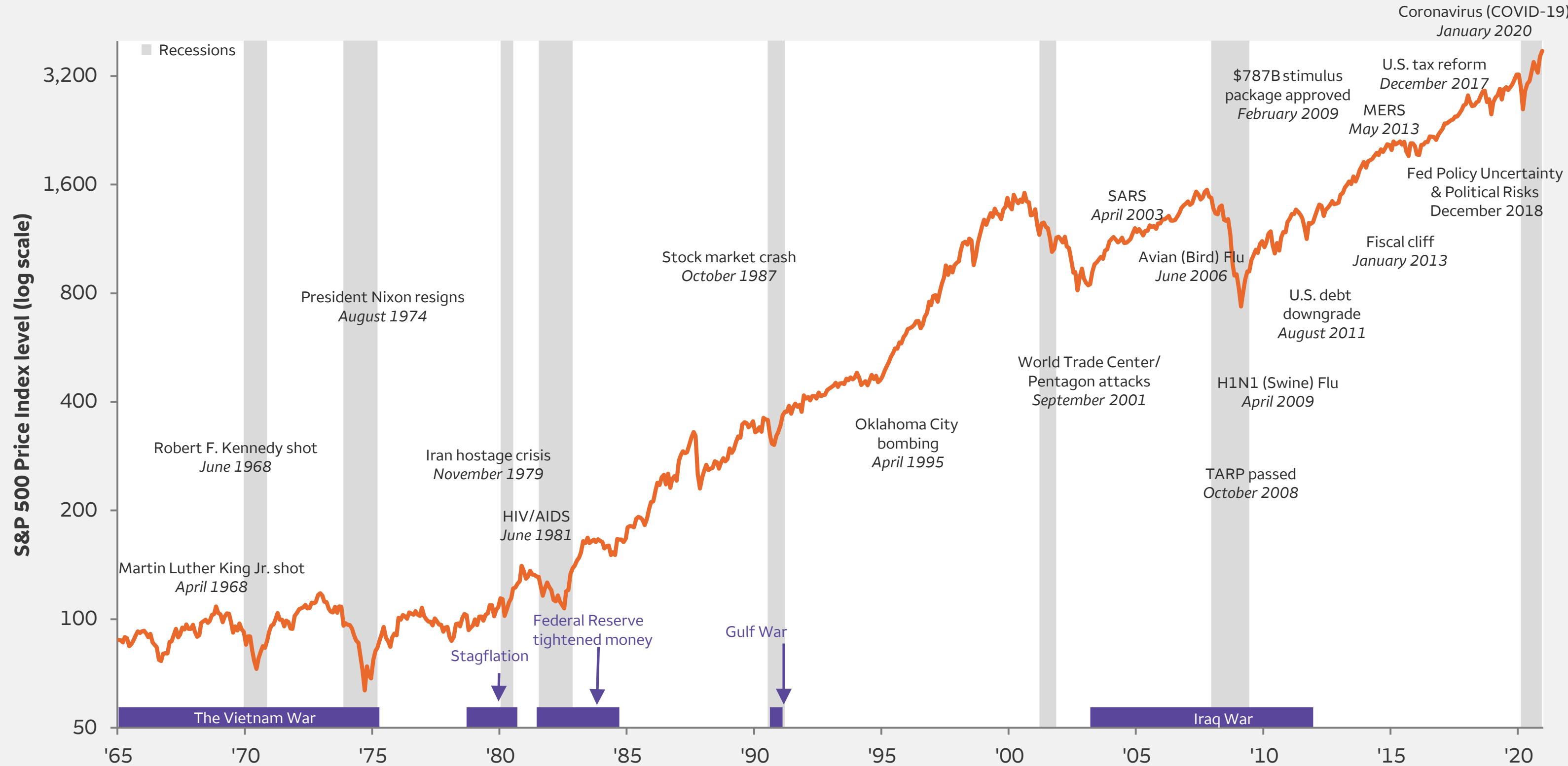
U.S. markets have displayed resilience despite uncertain events



Sources: Wells Fargo Investment Institute, Bloomberg, and Ned Davis Research. Monthly data from January 1, 1965 to December 31, 2020. Shaded areas represent recessions. A price index is not a total return index and does not include the reinvestment of dividends. The S&P 500 Index is a market-capitalization-weighted index considered representative of the U.S. stock market. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.** There is no guarantee equity markets will perform similarly during other periods of uncertainty. All investing involves risk including the possible loss of principal.

Key takeaways

- Volatility is a normal part of market behavior and can present opportunities for long-term investors.
- Geopolitical crises, terrorist attacks, economic recessions, epidemics, or consequential central bank policies can trigger short-lived yet influential market disruptions.

2020 dividends and buybacks are tracking lower

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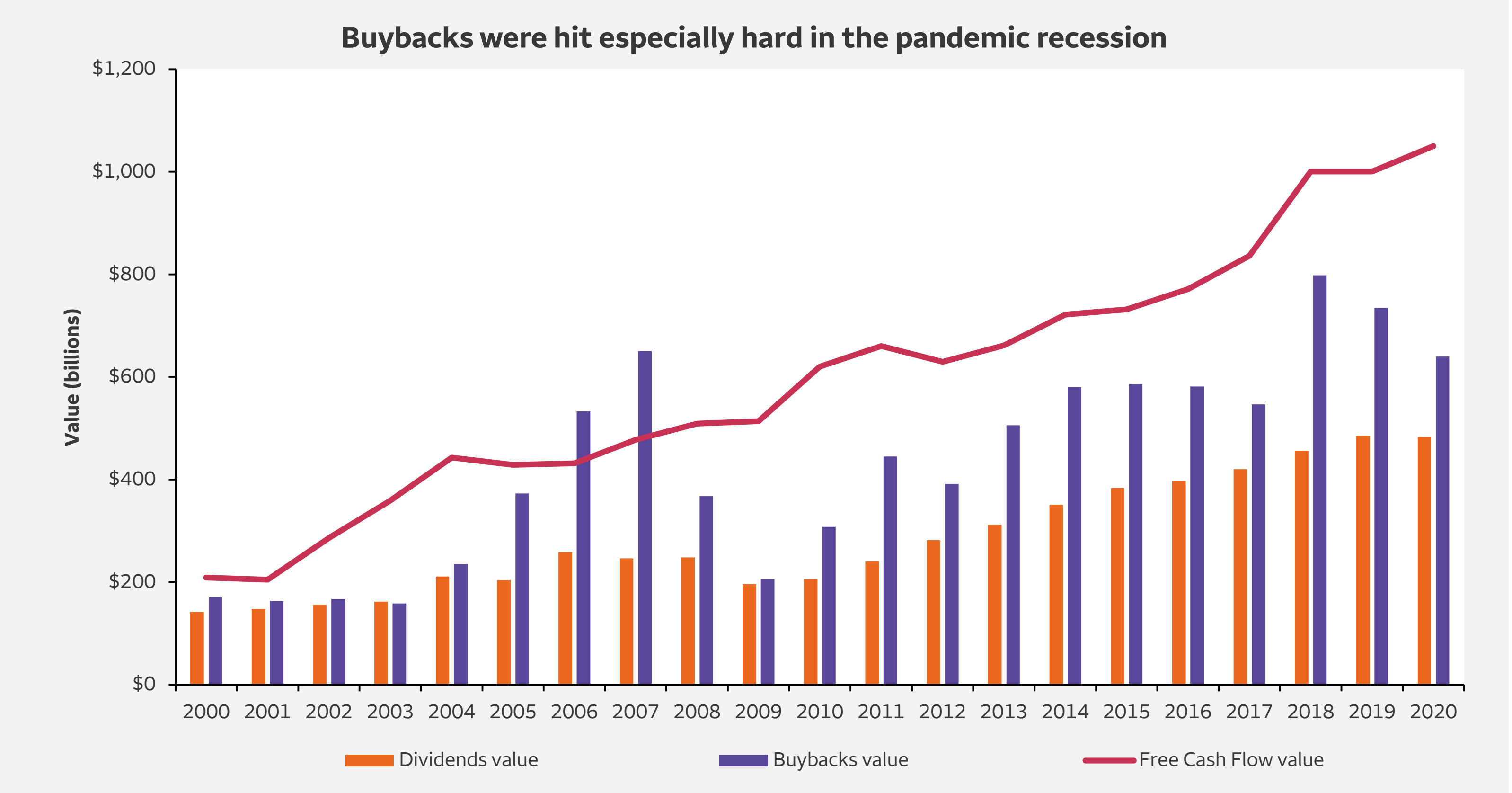

Sources: Pavilion Global Markets, S&P Global, and Wells Fargo Investment Institute. Annual data from January 1, 2000 to December 31, 2020. Dividends value, buybacks value, and free cash flow value are based on the S&P 500 index.The S&P 500 Index is a market-capitalization-weighted index considered representative of the U.S. stock market. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results**.

Key takeaways

- Dividends and buybacks have fallen from peak levels as companies prioritized expenditures and protected liquidity reserves, but they are poised to recover in 2021.
- Dividend payouts have tended to recover quickly following a recession, and the return stability of dividend-paying companies has often led to their outperformance in down markets.

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Bull markets—strong comeback each time

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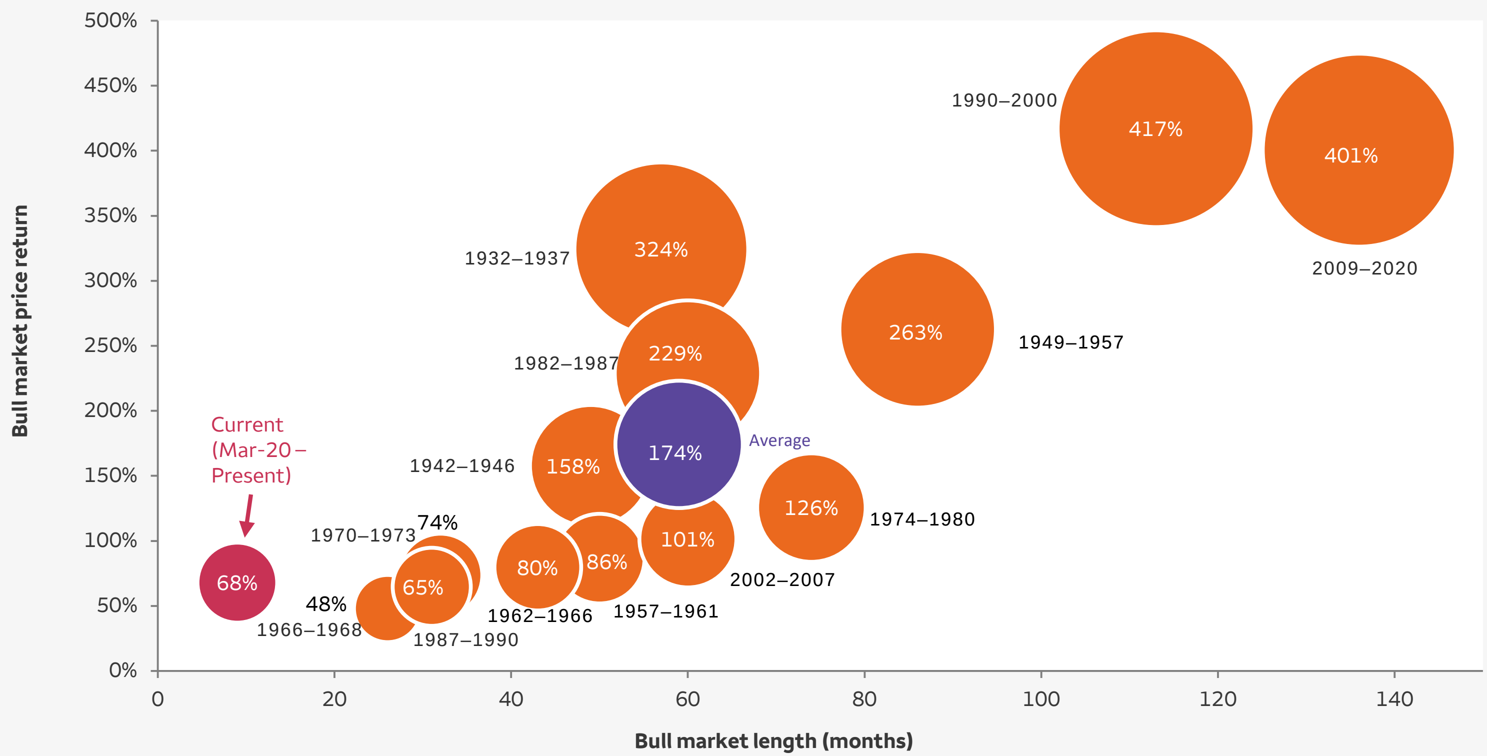
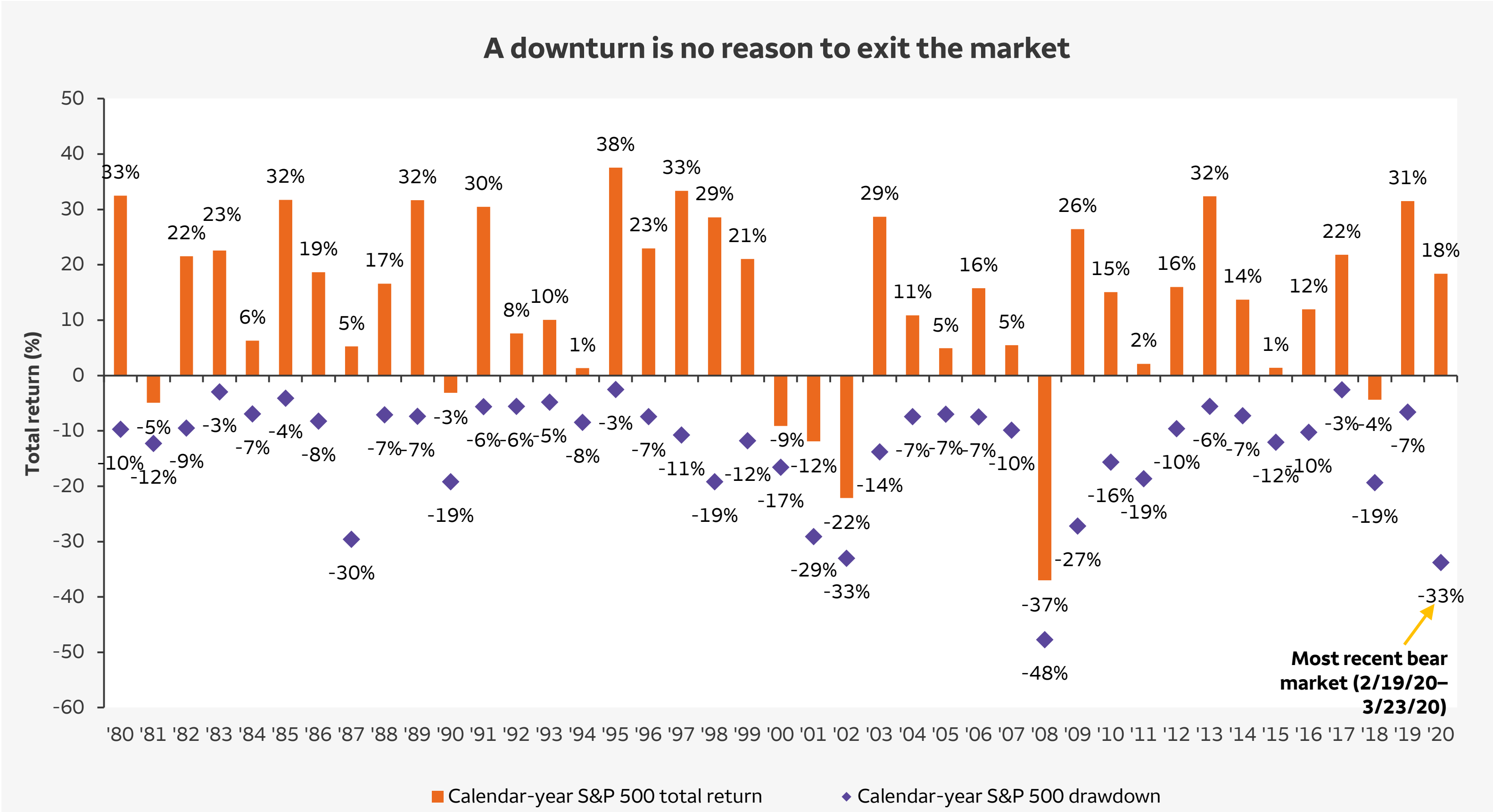


Sources: Bloomberg and Wells Fargo Investment Institute, as of December 31, 2020. The S&P 500 Index is a market-capitalization-weighted index considered representative of the U.S. stock market. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.**

Key takeaways

- Historically, recoveries after each bear market regained the lost amount and more. The current bull market recouped the losses from the previous bear market in record time.
- Bull markets, on average, are longer in duration than bear markets. It is interesting to note that the two longest bull markets have comprised nearly 21 of the last 30 years.

Staying the course



Sources: © 2020 – Morningstar Direct, All Rights Reserved[1], and Wells Fargo Investment Institute. Annual data from January 1, 1980 to December 31, 2020. Severe intra-year corrections do not necessarily indicate subpar performance for the calendar year. Analysis was compiled using the daily price of the S&P 500 Total Return Index. The S&P 500 Index is a market-capitalization-weighted index considered representative of the U.S. stock market. Calendar-year drawdowns represent the largest market drops from peak to trough for each year. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.**

Key takeaways

- A severe market downturn does not necessarily mean that markets will perform poorly for the year.
- Market corrections and downturns can be difficult to endure. However, they can offer opportunities for investors to purchase high-quality stocks at reasonable prices.

Cyclicals outperforming over multiple time periods

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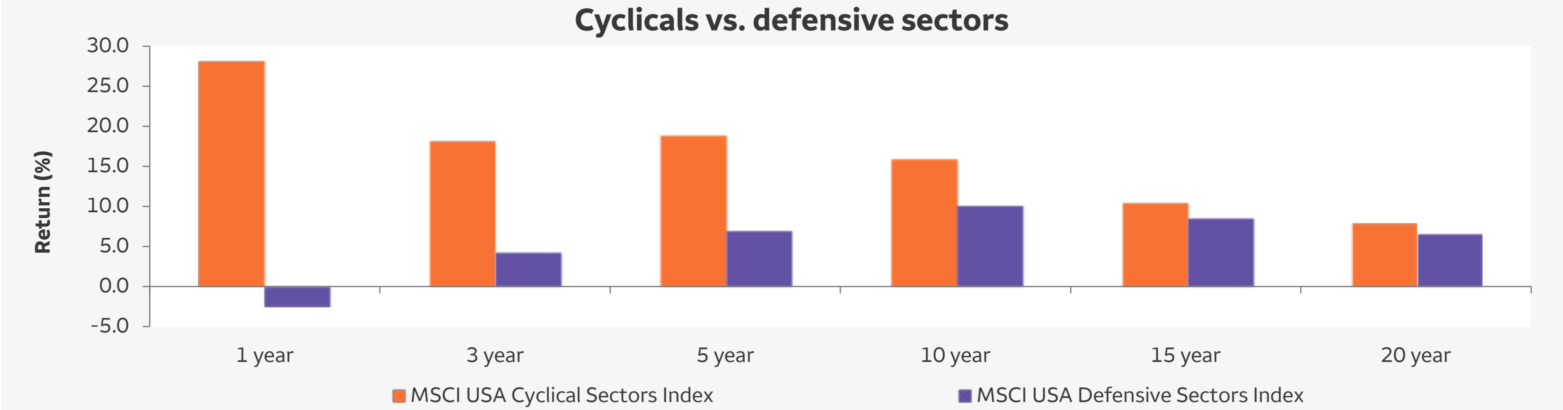

	Index name	% weight	QTD % change	YoY % change	12-month forward P/E	Dividend yield %
	S&P 500	**100.0**	**12.15**	**18.40**	**27.04**	**1.57**
Defensive	Communication Services	10.77	13.82	23.61	25.61	0.95
Cyclical	Consumer Discretionary	12.72	8.04	33.30	49.20	0.68
Defensive	Consumer Staples	6.51	6.35	10.75	22.09	2.81
Cyclical	Energy	2.28	27.77	-33.68	--	5.85
Cyclical	Financials	10.44	23.22	-1.69	18.11	2.11
Defensive	Health Care	13.46	8.03	13.45	18.10	1.59
Cyclical	Industrials	8.40	15.68	11.06	42.10	1.64
Cyclical	Information Technology	27.61	11.81	43.89	29.44	1.02
Cyclical	Materials	2.63	14.47	20.73	27.17	1.81
Cyclical	Real Estate	2.42	4.94	-2.17	49.15	3.06
Defensive	Utilities	2.76	6.54	0.48	18.79	3.43

Sources: FactSet, I/B/E/S Estimates, © 2020 – Morningstar Direct, All Rights Reserved[1], and Wells Fargo Investment Institute, as of December 31, 2020. YoY = year over year. QTD = quarter to date. P/E = price/earnings. Yields represent past performance and fluctuate with market conditions. Current yields may be higher or lower than those quoted above. The S&P 500 Index is a market-capitalization-weighted index considered representative of the U.S. stock market. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.** Please see the end of the report for the definitions of the indexes.

Key takeaways

- We favor those sectors whose earnings growth should improve with economic growth.
- We have recently upgraded certain cyclical sectors that tend to perform well, as a strong recovery is likely underway.

Sector favorability – position for a mid cycle advance

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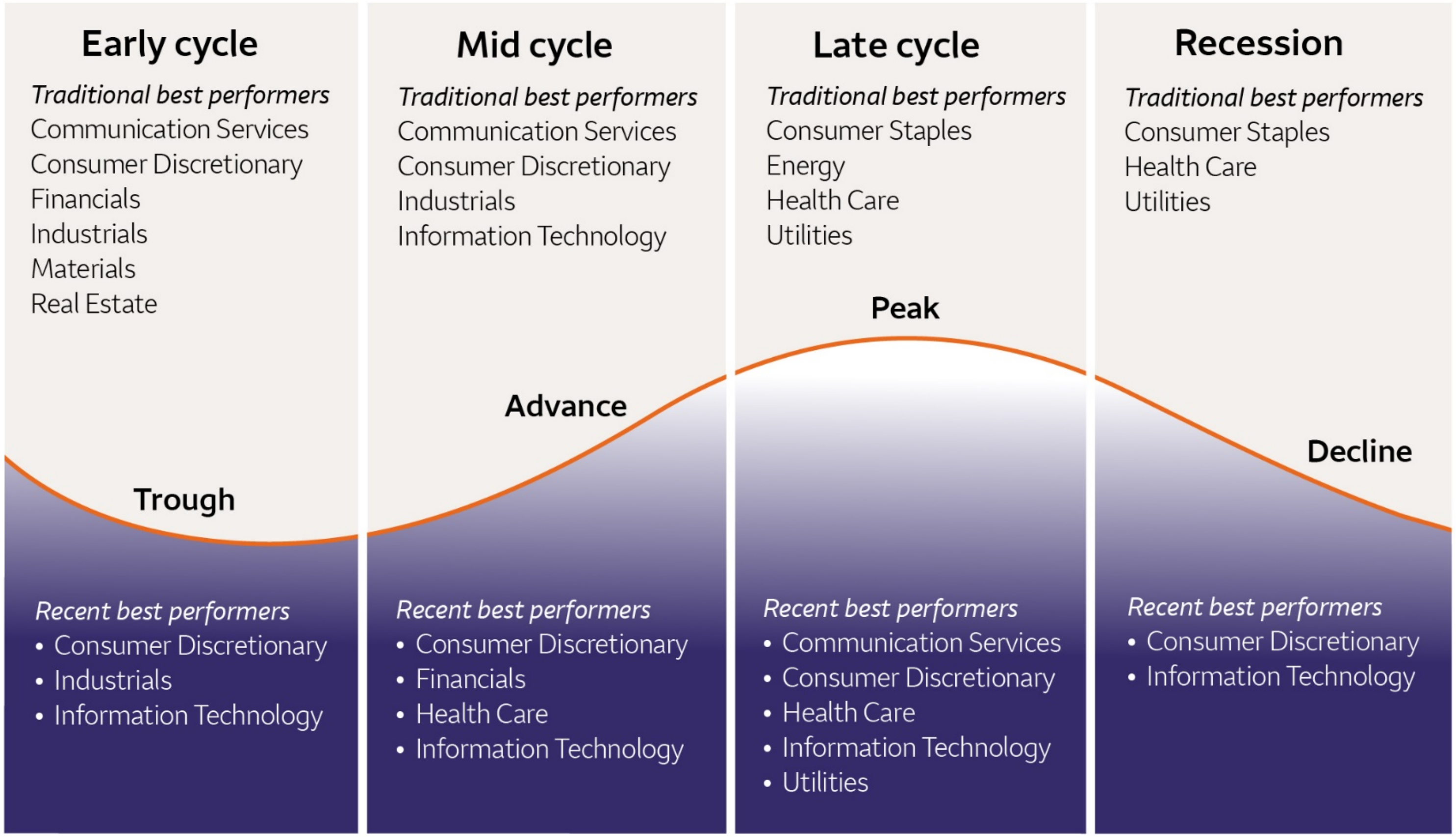

Source: Wells Fargo Investment Institute, as of December 31, 2020. **Past performance is no guarantee of future results.**

Key takeaways

- Cyclical sectors have shown strong improvement since the economy re-opened.
- Backed by swift fiscal and monetary stimulus, high-quality firms — specifically those in the Information Technology, Communication Services, and Consumer Discretionary sectors — have recently performed well.

S&P 500 Index sector composition over time

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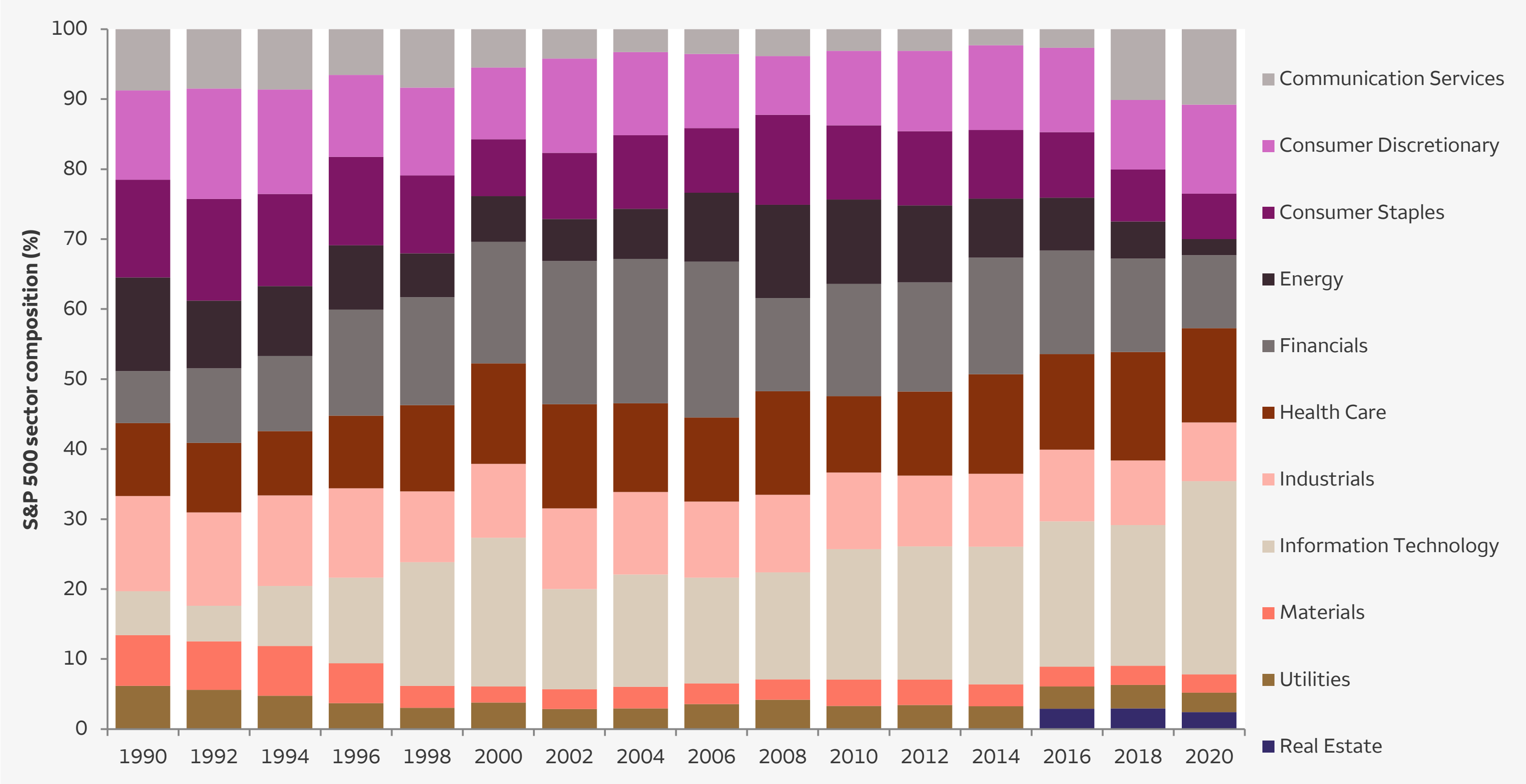

Sources: Factset and Wells Fargo Investment Institute. Biennial data from January 1, 1990 to December 31, 2020. The Telecommunications Services sectors was replaced with the Communications Services sector on September 28, 2018. The composition of the indexes in 1997 and 2013 still reflect the prior sector composition. An index is unmanaged and not available for direct investment. For illustrative purposes only. It does not represent any specific investment or represent the experience of individual investors

Key takeaways

- The S&P 500 Index has changed significantly over the past 30 years. Today, the largest sector within the S&P 500 Index is Information Technology, which did not even exist when the benchmark was created in 1957.
- The Energy sector weighting shrank from nearly 15% in 2008 to low single digits today, as global oil supply has increased and demand growth has stabilized.

Equity sector compositions have changed over time

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Sectors weights	S&P 500 Index			MSCI EAFE Index			MSCI Emerging Markets Index		
	2000	2010	2020	2000	2010	2020	2000	2010	2020
Information Technology	21.23%	18.65%	27.61%	9.88%	5.00%	8.94%	15.38%	12.93%	20.48%
Health Care	14.36%	10.91%	13.46%	9.43%	8.19%	12.86%	2.00%	0.97%	4.74%
Consumer Discretionary	10.28%	10.63%	12.72%	13.55%	10.53%	12.53%	6.35%	6.92%	18.34%
Communication Services	5.46%	3.10%	10.77%	9.97%	5.41%	5.22%	17.89%	7.42%	11.63%
Financials	17.34%	16.06%	10.44%	25.98%	23.76%	16.31%	18.99%	25.07%	17.96%
Industrials	10.57%	10.95%	8.40%	9.63%	12.73%	15.22%	6.77%	7.38%	4.34%
Consumer Staples	8.10%	10.63%	6.51%	6.91%	10.03%	10.94%	8.90%	6.68%	5.86%
Utilities	3.79%	3.30%	2.76%	4.09%	5.03%	3.88%	5.51%	3.41%	2.02%
Materials	2.30%	3.74%	2.63%	4.58%	11.46%	7.87%	12.30%	14.92%	7.56%
Real Estate	–	–	2.42%	–	–	3.10%	–	–	2.05%
Energy	6.57%	12.03%	2.28%	5.98%	7.86%	3.13%	5.91%	14.30%	5.02%

Sources: Factset and Wells Fargo Investment Institute, as of December 31, 2020. The Telecommunications Services sectors was replaced with the Communications Services sector on September 28, 2018. The composition of the indexes in 2000 and 2010 still reflect the prior sector composition. An index is unmanaged and not available for direct investment. See end of report for index definitions.

Key takeaways

- The Information Technology sector weight has increased in all three indexes above — most significantly in the U.S. and emerging markets. A lower weight to the Information Technology sector in the MSCI EAFE Index may have contributed to its relative underperformance.
- Information Technology led performance in the early months of the recovery, but positive sector performance should broaden as the recovery continues.

Dividend yields outside of the U.S. are attractive

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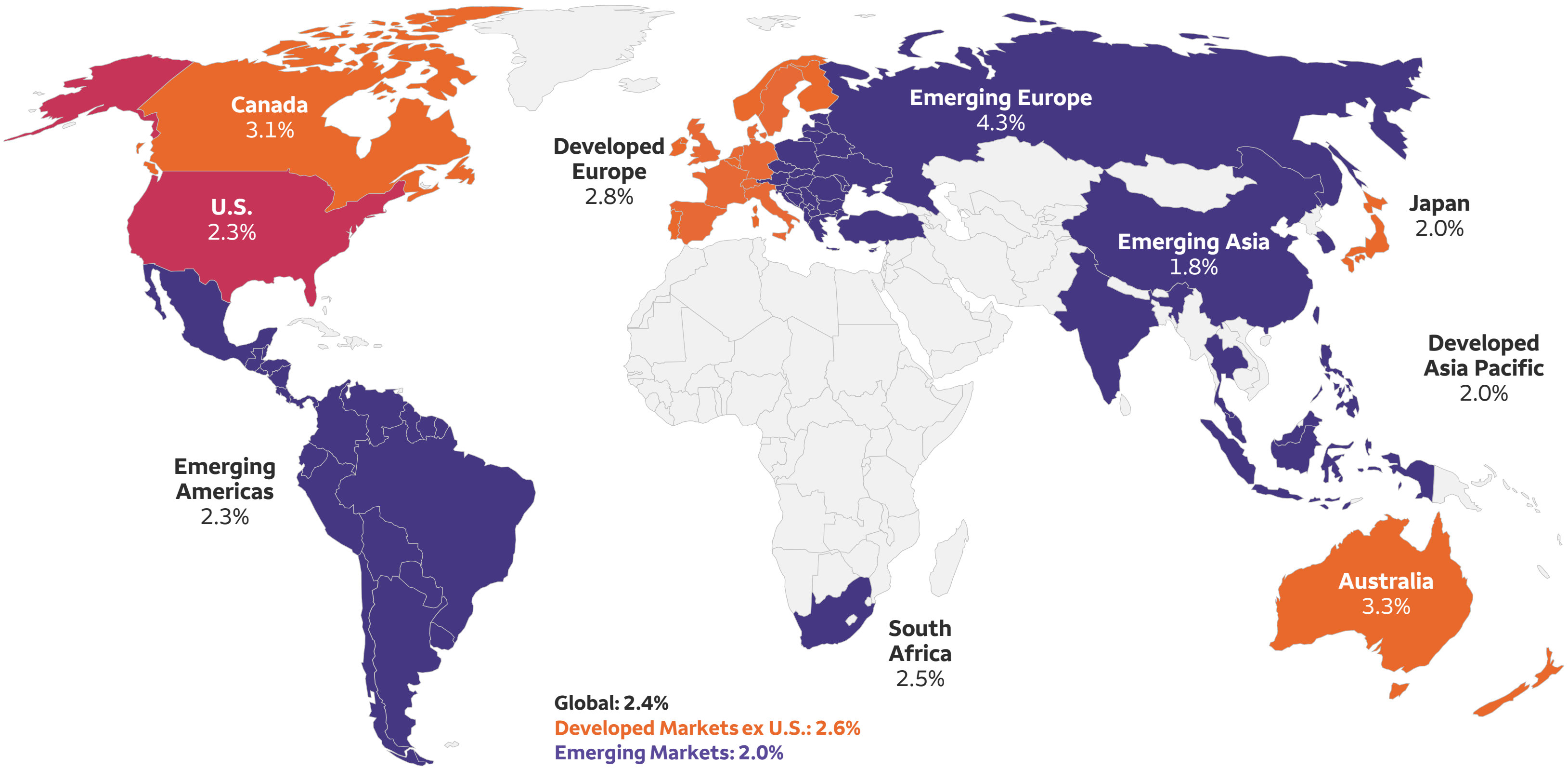
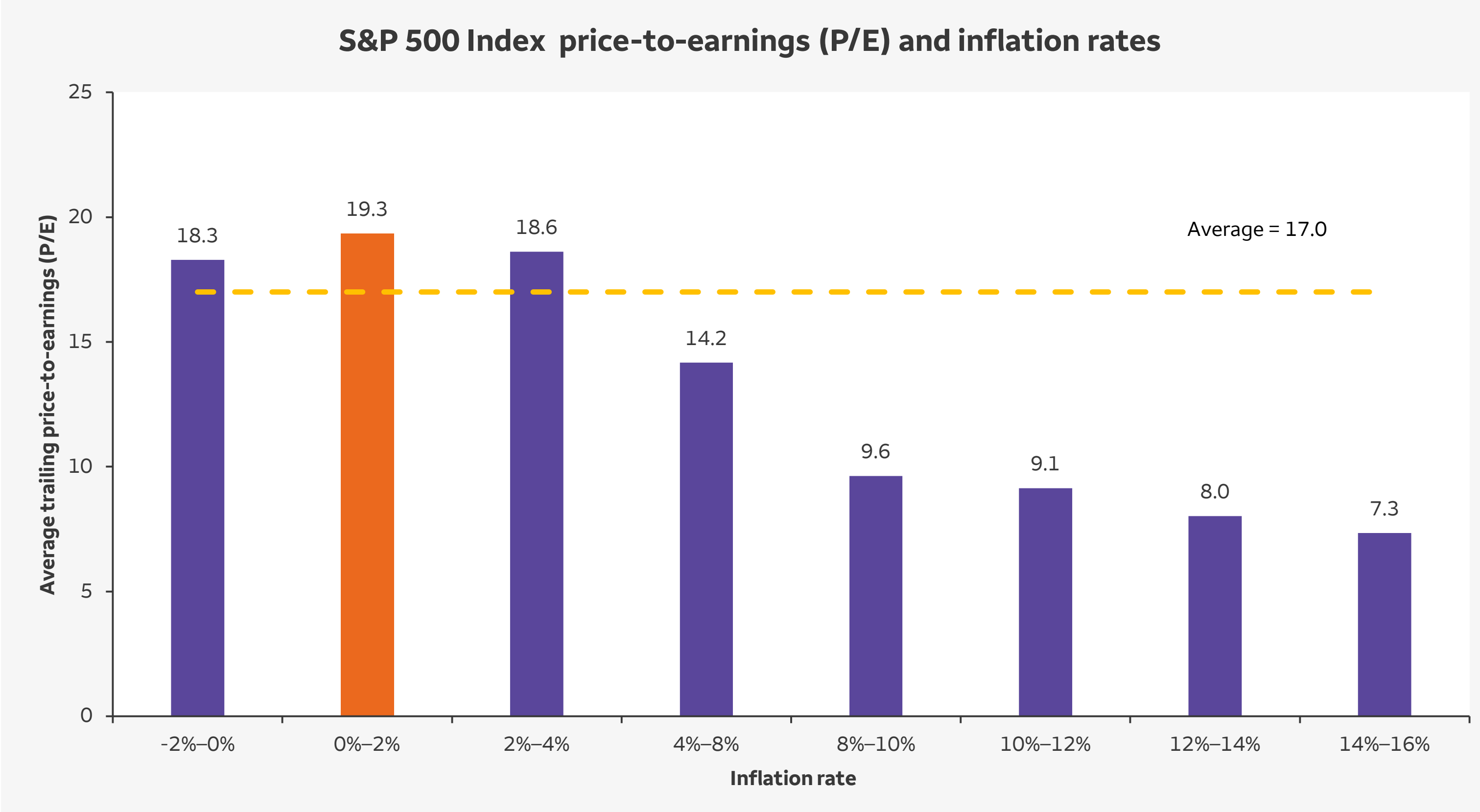


Sources: MSCI, Bloomberg, and Wells Fargo Investment Institute, as of December 31, 2020. Yields represent past performance and fluctuate with market conditions. Current yields may be higher or lower than those quoted. **Past performance is no guarantee of future results.** Canada: MSCI Canada Index, U.S.: MSCI U.S. Index, Emerging Americas: MSCI Emerging Markets (EM) Latin America Index, Developed Europe: MSCI Europe Index, Emerging Europe: MSCI EM Europe Index, Emerging Asia: MSCI EM Asia Index; Japan: MSCI Japan Index, Developed Asia Pacific: MSCI Asia Pacific, Australia: MSCI Australia Index, South Africa: MSCI South Africa Index, Global: MSCI ACWI Index, Developed Markets: MSCI World ex USA Index, and Emerging Markets: MSCI Emerging Markets. An index is unmanaged and not available for direct investment. Definitions of the indexes and descriptions of the risks associated with investment in these asset classes are provided at the end of the presentation.

Key takeaways

- We view dividend yields in many regions outside of the U.S. as attractive.
- Amid a dearth of positive real yields from global government bonds, dividends remain important source of income for investors.

What's inflation got to do with it?



Sources: Bloomberg and Wells Fargo Investment Institute, as of December 31, 2020. The average price to earnings was calculated using the S&P 500 index from 1959 – 2020. The S&P 500 Index is a market-capitalization-weighted index considered representative of the U.S. stock market. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results**.

Key takeaways

- At nearly 30x, the current trailing (backwards-looking over the last 12 months) P/E ratio of the S&P Index is significantly higher than the long-term average.
- As earnings growth improves in the coming quarters, the forward-looking P/E is much lower and, in our view, is supported by today's low inflation rate (in the 0-2% range).

S&P 500 index dividend yield surpasses many bonds

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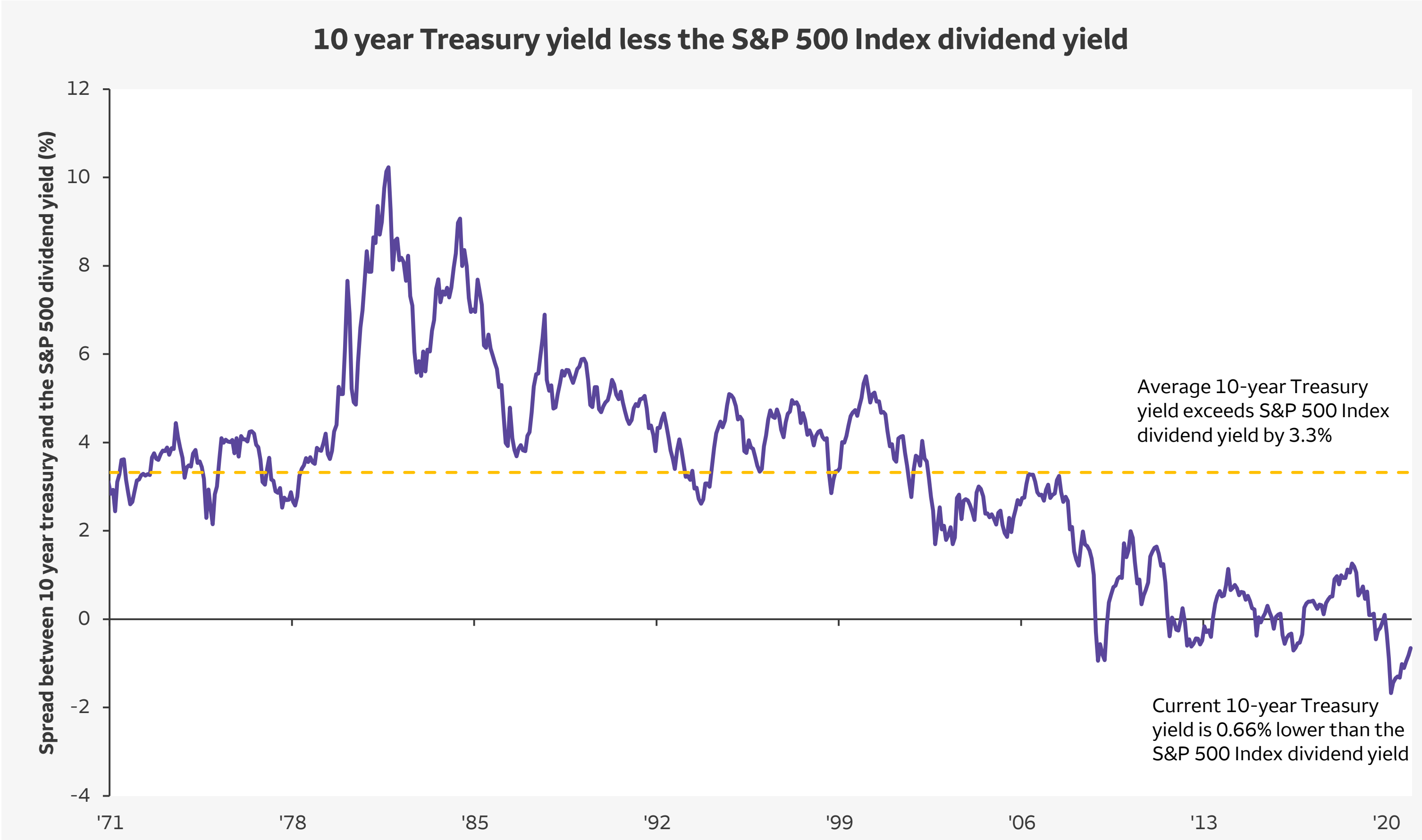

Sources: Bloomberg and Wells Fargo Investment Institute. Monthly data from January 1, 1971 to December 31, 2020. The S&P 500 Index is a market-capitalization-weighted index considered representative of the U.S. stock market. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results**.

Key takeaways

- S&P 500 Index dividend yield is attractive compared to yields available from traditional fixed income.
- Quality dividend-producing equities may rise as investors search for income-producing assets in a low interest rate environment.

Emerging market equities are starting to recover

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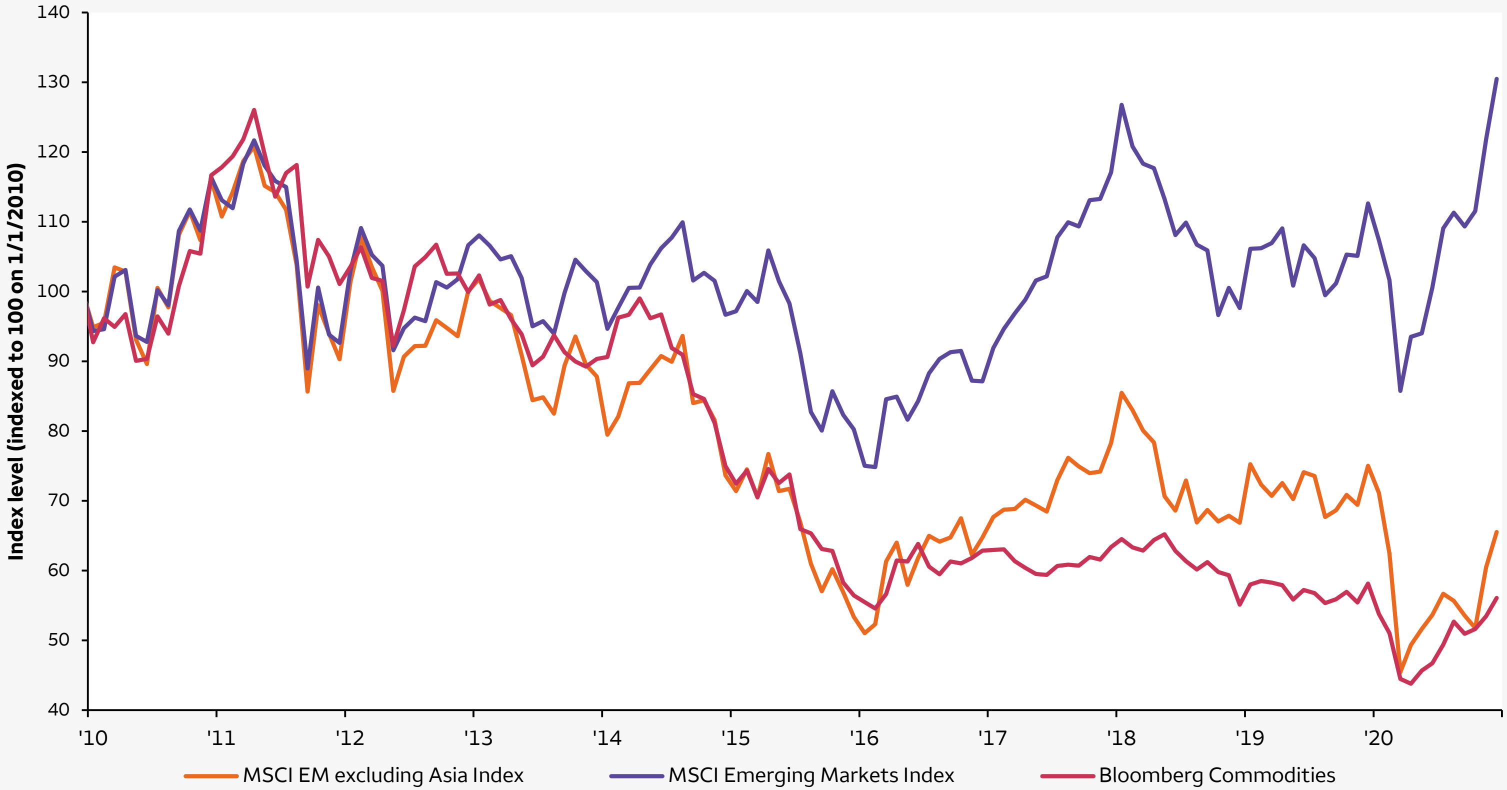

Sources: Bloomberg and Wells Fargo Investment Institute. Monthly data from January 1, 2010 to December 31, 2020. The MSCI Emerging Markets Index and Emerging Markets excluding Asia Index are equity Indexes that capture large- and mid-cap representation across 24 emerging market countries, and 17 emerging markets, respectively, around the world. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.**

Key takeaways

- Emerging markets ex-Asia have begun to recover alongside commodity prices.
- Emerging Asia has outperformed, in part, due to the region's effectiveness at containing the spread of COVID-19. The region is poised for better performance as the global economy picks up.

International equities versus the U.S. dollar

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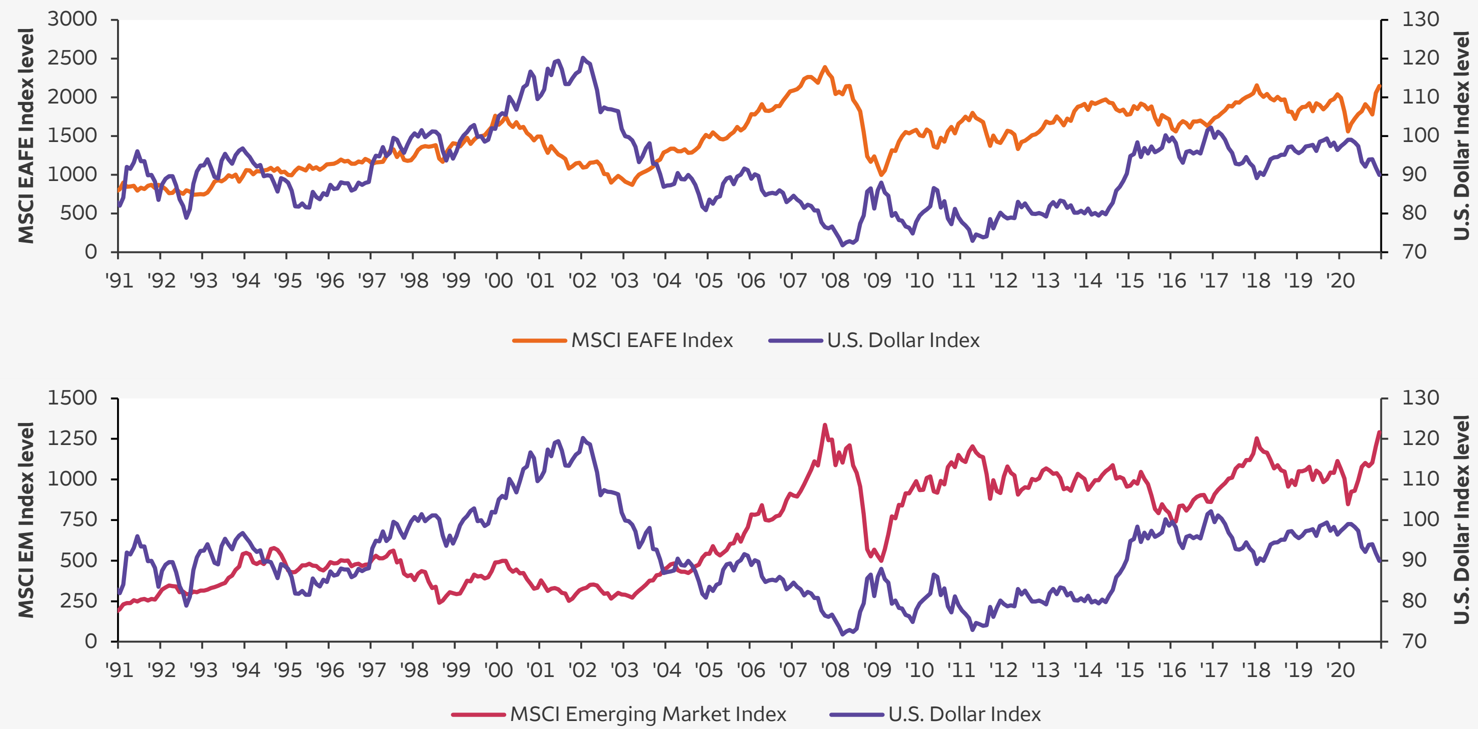
International equities have traditionally performed well when the dollar weakens



Sources: Bloomberg and Wells Fargo Investment Institute. Monthly data from January 1, 1991 to December 31, 2020. P/E = price/earnings ratio. The MSCI EAFE Index and the MSCI Emerging Markets Index are equity Indexes that capture large- and mid-cap representation across 21 developed market countries (excluding the U.S. and Canada), and 24 emerging market countries, respectively, around the world. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.** See end of report for important risk disclosures and index definitions.

Key takeaways

- Recent weakness in the dollar has helped support international equity prices, although developed markets outside of the U.S. continue to struggle with structural issues, including a resurgence of the virus, populist politics, aging demographics, and a lack of fiscal unity among EU members.

Trade impacts on developed market equities

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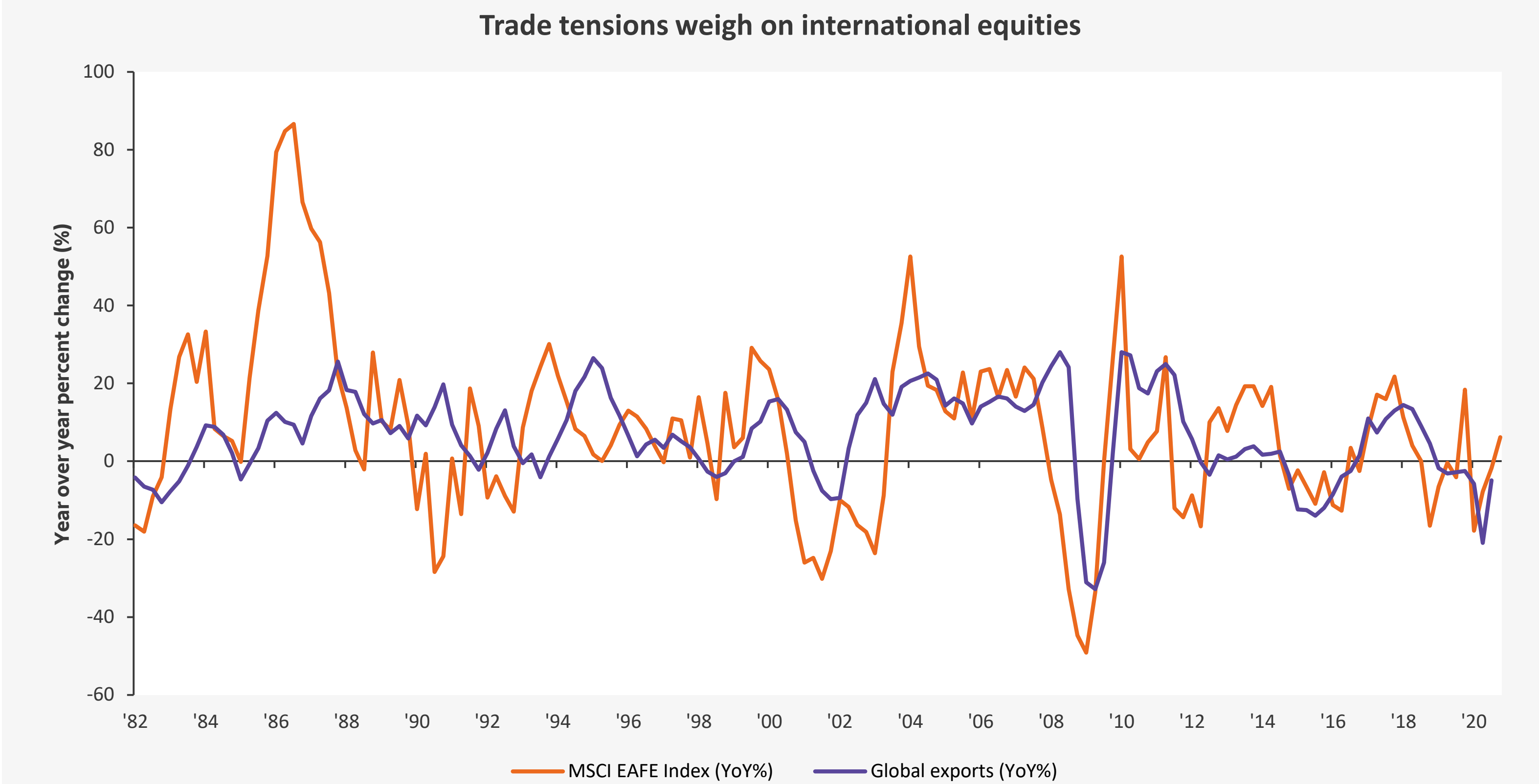

Sources: Bloomberg and Wells Fargo Investment Institute. MSCI EAFE Index: quarterly data from January 1, 1982 to December 31, 2020. Global exports: quarterly data from January 1, 1982 to September 30, 2020. YoY = year-over-year. MSCI EAFE Index is a free float-adjusted market capitalization index that is designed to measure the equity market performance of 21 developed markets, excluding the U.S. and Canada. Global exports are total world exports from the International Monetary Fund (IMF). An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results**. See end of report for important risk disclosures and index definitions.

Key takeaways

- Weak world trade and pandemic containment issues have hit trade-sensitive firms in Japan, Australia, and New Zealand particularly hard.
- Developed market equity performance has improved since the selloff. However, sustained outperformance will likely require a stronger rebound in global trade.

Re-opening vs. stay-at-home sectors

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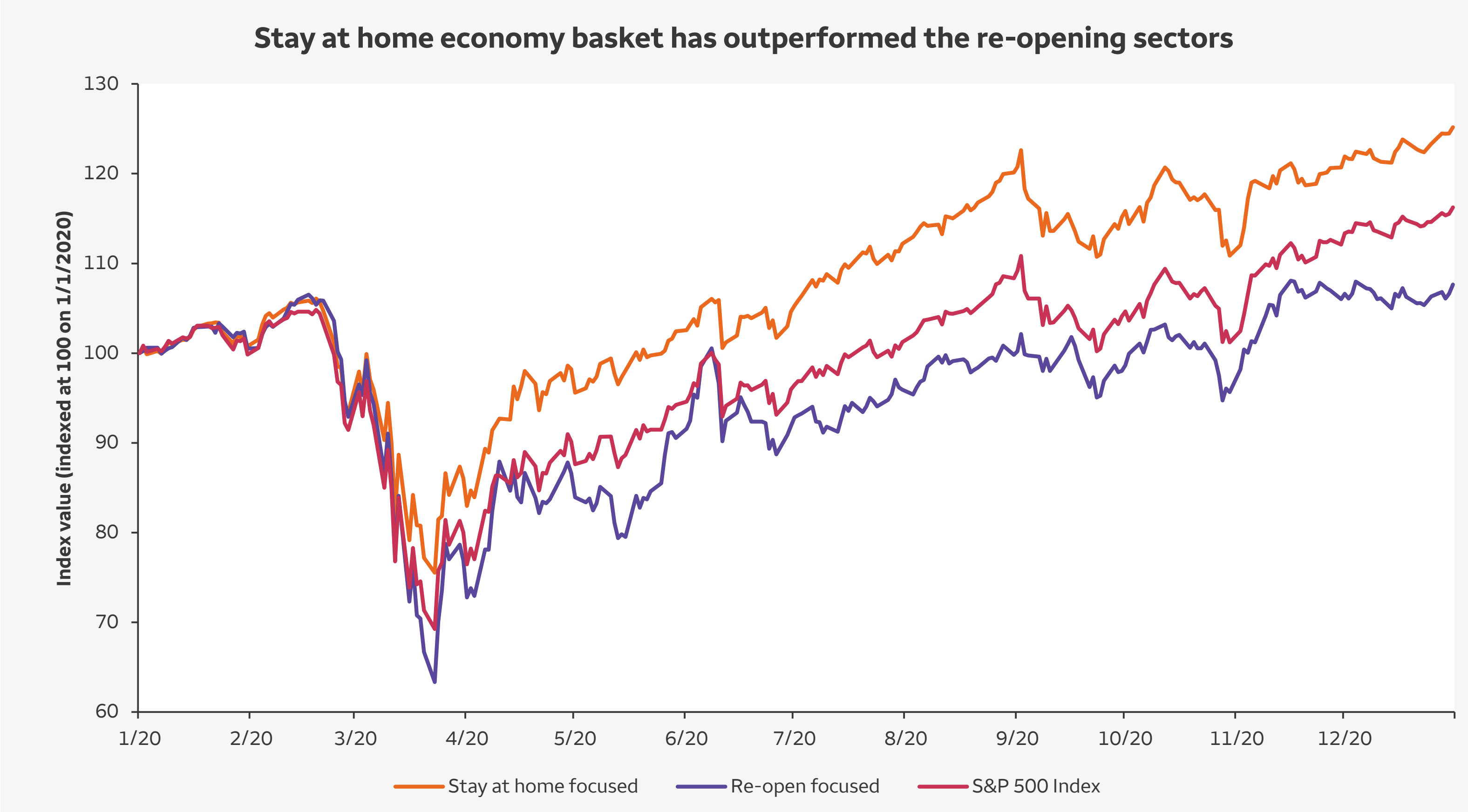

Sources: Bloomberg and Wells Fargo Investment Institute. Daily data from January 1, 2020 to December 31, 2020. The S&P 500 Index is a market-capitalization-weighted index considered representative of the U.S. stock market. An index is unmanaged and not available for direct investment. The stay at home index is an average of the S&P 500 information technology, health care, consumer staples, and consumer discretionary sectors. The re-opening index is an average of the S&P 500 industrials and real estate sectors. **Past performance is no guarantee of future results.**

Key takeaways

- "Stay-at-home" focused sectors, like Information Technology, Health Care, Consumer Discretionary, and Consumer Staples have outperformed the re-opening stocks in sectors such as Industrials and Real Estate in 2020.
- 2021 could see a continuation of the digitalization of the economy that sparked gains in the stay-at-home sectors, with outperformance broadening to include certain re-opening cyclical sectors like materials.

Fixed-income highlights

General

- Yields available in many segments of the bond market are still materially lower than investors have historically experienced.
- Despite the low rates, high-quality bonds can provide a ballast to investment portfolios during periods of equity market volatility.

Domestic

- Short-term rates have been anchored by the Fed near the zero bound while intermediate and long term rates climbed during the fourth quarter, supported mostly in the post-election rally.
- Although markets have recovered and rates have increased modestly, they remain well below pre-coronavirus levels. We expect further yield curve steepening throughout 2021.
- Credit spreads have continued to tighten as the outlook improves. We believe investors should selectively add yield.

International

- Developed market government bond yields remain extremely low as economic growth and deflationary concerns persist in the eurozone and Japan.
- U.S.-dollar-denominated emerging market (EM) sovereign bonds have reversed virtually all the early-2020 yield gains. They are being supported by investors' search for yield, with low-risk government-bond yields stuck near zero.
- The international impact of a Biden presidency, as well as a vaccine-driven global recovery, may improve EM debt fundamentals, but the impact on yield spreads may be offset by upward pressure on underlying U.S. Treasury yields.

Fixed-income scorecard

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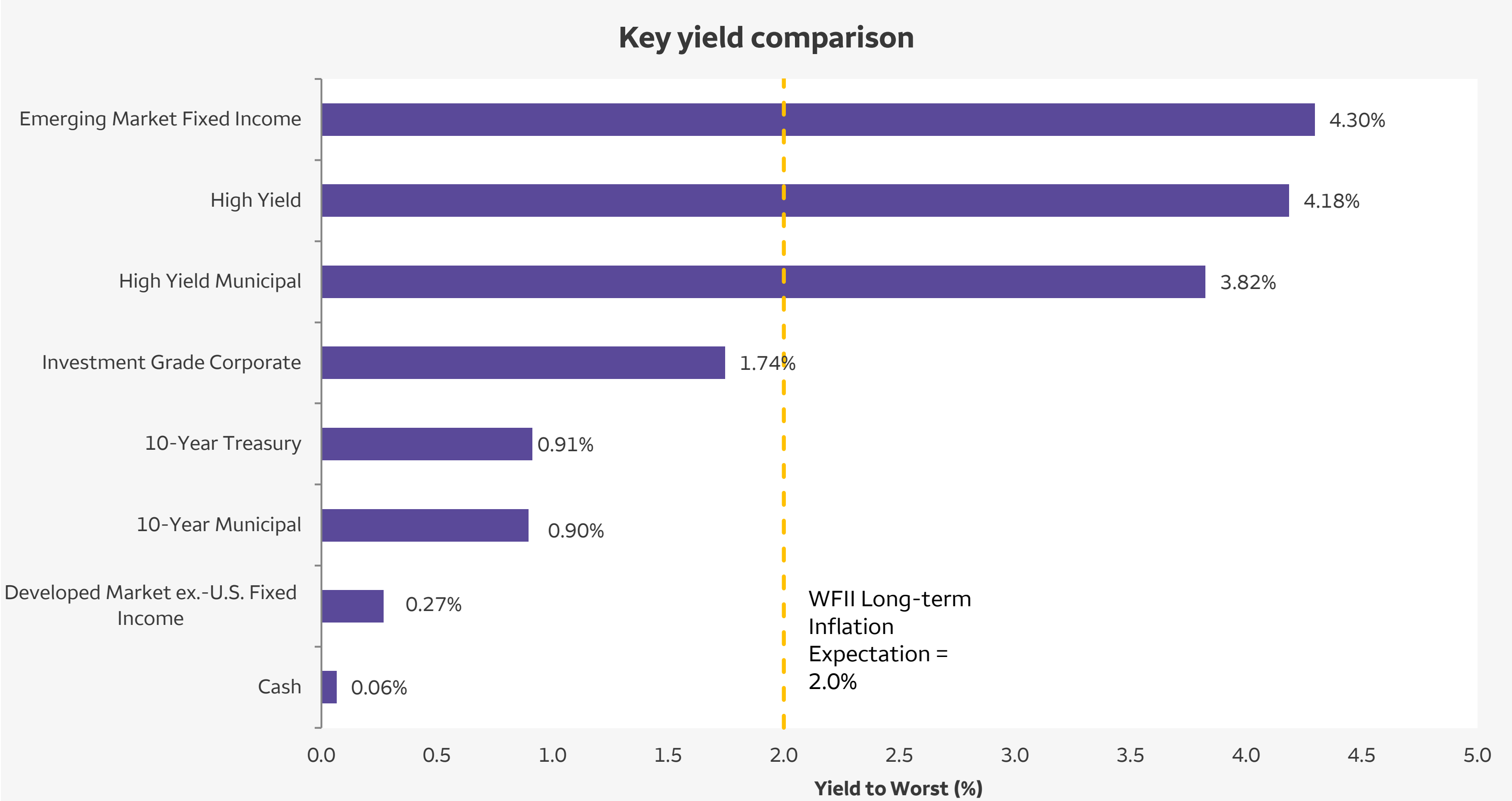
Asset class	4Q20 return (%)	YoY return (%)	Duration (years)	Yield to worst (%)
U.S. Short Term Taxable Fixed Income	0.22	3.08	1.50	0.28
U.S. Intermediate Term Taxable Fixed Income	0.57	7.92	5.18	1.00
U.S. Long Term Taxable Fixed Income	1.68	16.11	16.74	2.27
High Yield Taxable Fixed Income	6.45	7.11	3.49	4.18
Developed Market ex.-U.S. Fixed Income	0.66	10.52	9.89	0.27
Emerging Market Fixed Income	5.49	5.88	8.49	4.30

Sources: FactSet and Wells Fargo Investment Institute, as of December 31, 2020. YoY = year over year. Duration is a measure of a bond's sensitivity to interest rates. Short term taxable = Bloomberg Barclays U.S. Aggregate 1–3 Year Bond Index. Intermediate term taxable = Bloomberg Barclays U.S. Aggregate 5–7 Year Bond Index. Long term taxable = Bloomberg Barclays U.S. Aggregate 10+ Year Bond Index. High Yield taxable = Bloomberg Barclays U.S. Corporate High Yield Bond Index. Developed market ex-U.S. = J.P. Morgan GBI Global Ex U.S. Index (Unhedged). Emerging market = J.P. Morgan EMBI Global Index (USD). Yields and returns represent past performance and fluctuate with market conditions. Current performance may be higher or lower than that quoted above. **Past performance is no guarantee of future results.** An index is unmanaged and not available for direct investment. Please see the end of the report for the definitions of the indexes.

Key takeaways

- U.S. long-term bonds outperformed shorter-dated securities in the fourth quarter. As markets recovered, rates have increased modestly but remain well below pre-COVID-19 levels.
- Emerging market and high-yield corporate bonds outperformed investment grade. International developed bonds also performed well, but this was solely due to currency strength versus a weakening U.S. dollar.
- We favor credit selectivity and a diversified income approach across fixed-income asset classes.

Yield available despite low rates



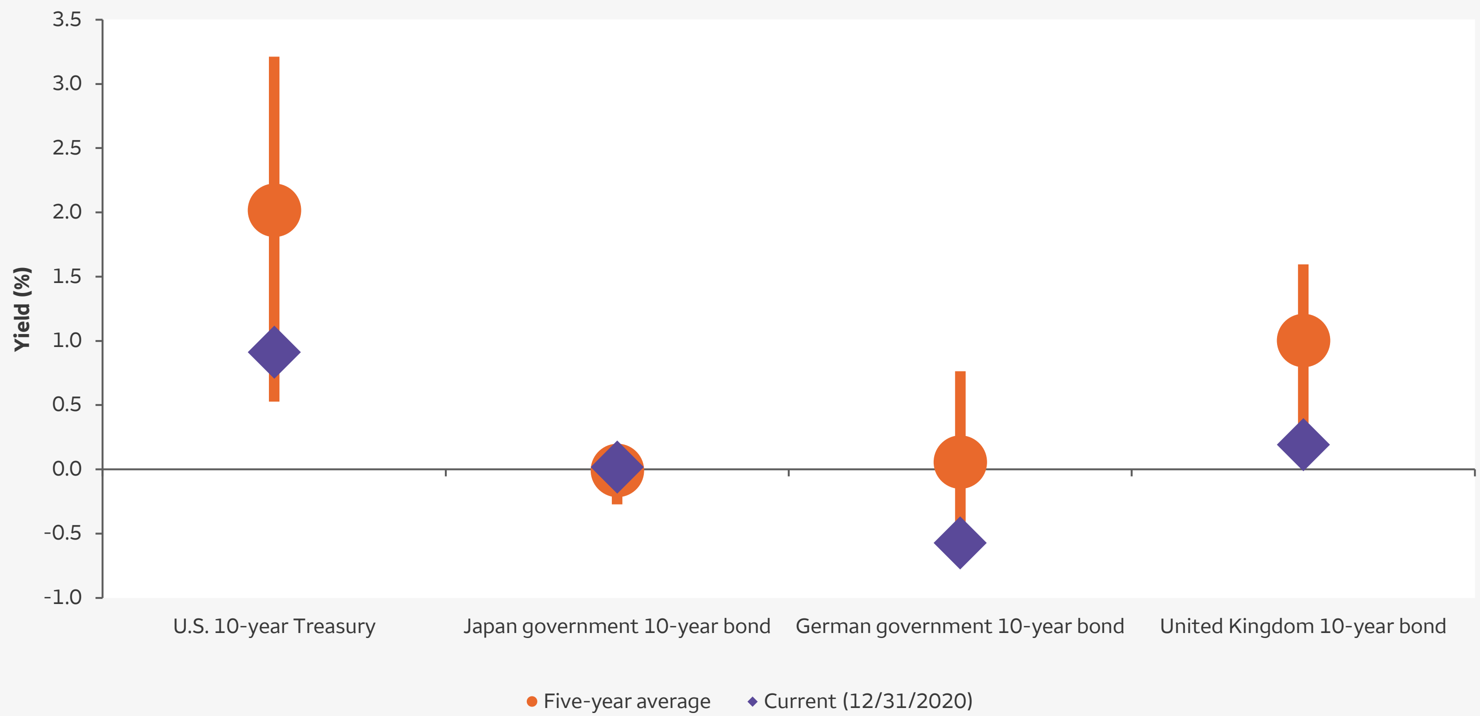
Sources: Bloomberg, FactSet, and Wells Fargo Investment Institute, as of December 31, 2020. High Yield: Bloomberg Barclays U.S. Corporate High Yield Bond Index, Emerging Market: J.P. Morgan EMBI Global Index, High Yield Municipal: Bloomberg Barclays U.S. Municipal High Yield Index, Investment Grade Corporate: Bloomberg Barclays U.S. Corporate Bond Index, Cash: Bloomberg Barclays US Treasury Bills (1–3M) Index, and Developed Market ex-U.S.: J.P. Morgan GBI Global Ex U.S. Index. Yields represent past performance and fluctuate with market conditions. Current yields may be higher or lower than those quoted above. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.** Please see the end of the report for the definitions of the indexes.

Key takeaways

- Yields are still materially lower than investors have historically experienced.
- Diversifying income streams can potentially lessen portfolio volatility and reduce the probability of dramatic swings in the levels of income provided.

Developed market yields remain extremely low

Major developed market yields are near all time lows



Sources: Bloomberg and Wells Fargo Investment Institute, as of December 31, 2020. Yields represent past performance and fluctuate with market conditions. Current yields may be higher or lower than those quoted above. **Past performance is no guarantee of future results.**

Key takeaways

- Developed market government bond yields are extremely low, given slow economic growth and deflationary concerns in the eurozone.
- U.S. bond yields have started to climb due to additional fiscal stimulus and successful vaccine developments.
- We expect yields to climb gradually over the course of 2021.

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Yield curve is signaling positive future growth

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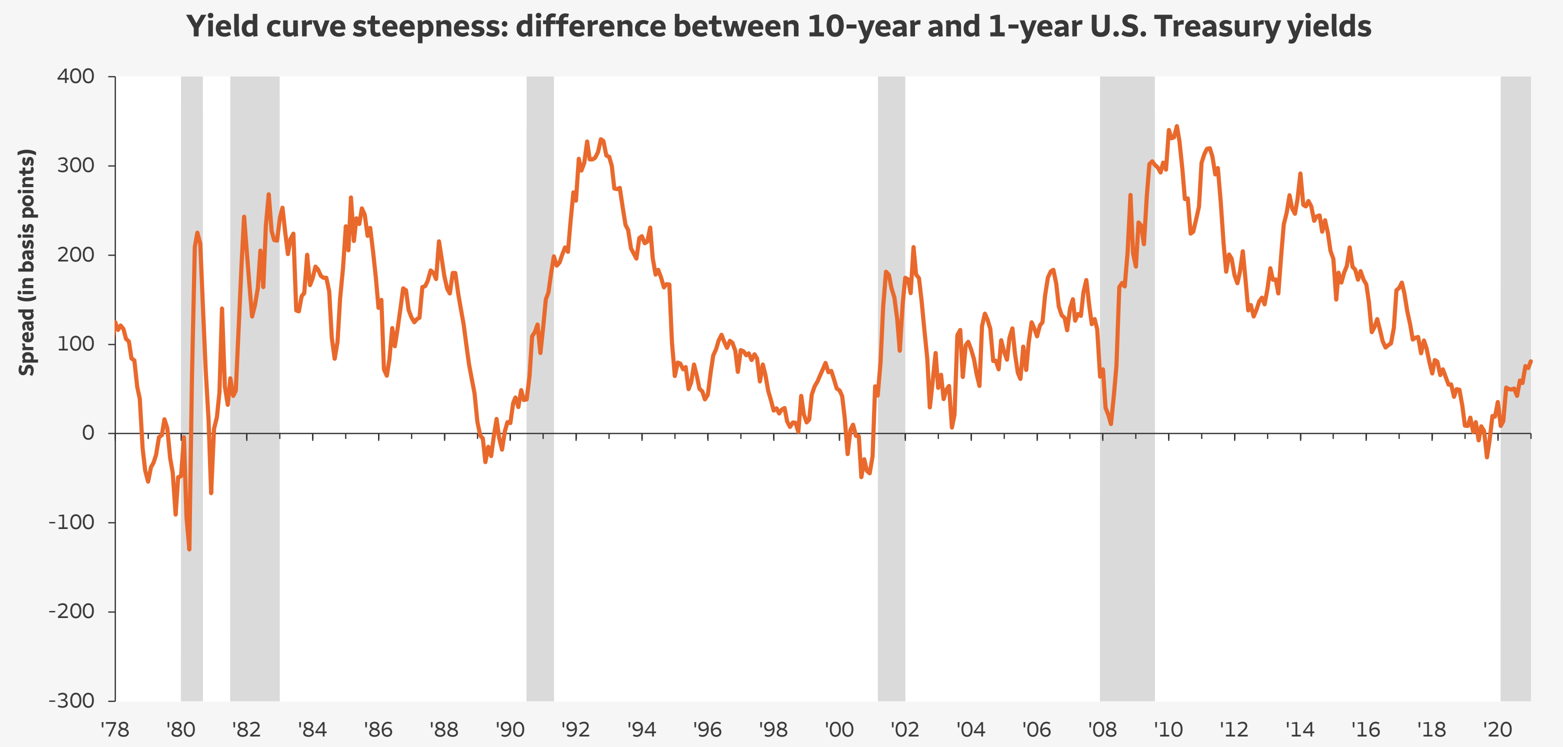

Sources: Bloomberg, and Wells Fargo Investment Institute. Monthly data from January 1, 1978 to December 31, 2020. Ten-Year Treasury Constant Maturity and the One-Year Constant Maturity Indexes are published by the Federal Reserve Board and are based on the average yield of a range of Treasury securities, all adjusted to the equivalent of a 10-year maturity and the equivalent of a one-year maturity. Shaded area represents time frame of a U.S. economic recession. Yields represent past performance and fluctuate with market conditions. Current yields may be higher or lower than those quoted above. **Past performance is no guarantee of future results**. 100 basis points equals 1%.

Key takeaways

- A steepening yield curve has historically pointed to better economic growth in the future.
- Much of the yield curve out to three years has been trading below the top end of the 0.00%–0.25% fed funds target. Longer-dated yields have been climbing due to better growth and inflation prospects.

Municipal bond yields have normalized

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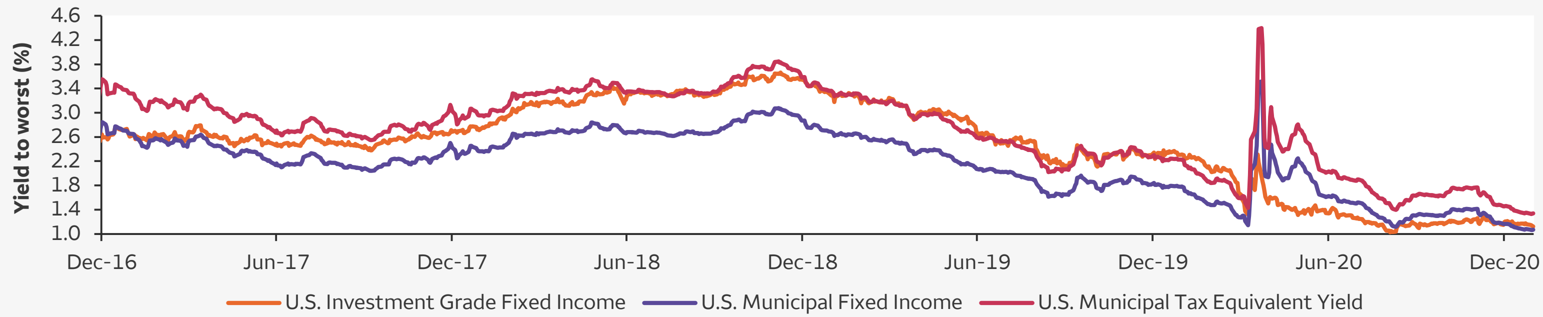
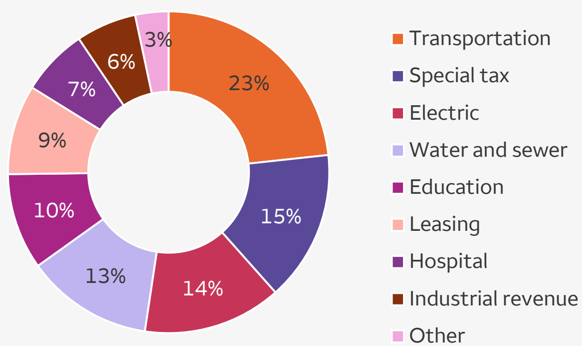
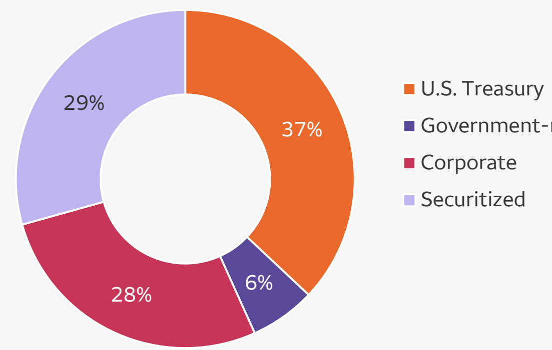
Municipal bonds still offer tax benefits



Municipal sectors by market value



Investment-grade sectors by market value



Sources: Bloomberg Barclays and Wells Fargo Investment Institute. Yield to worst: monthly data from December 1, 2016 to December 31, 2020. Sector market value as of December 31, 2020. Investment grade represented by Bloomberg Barclays U.S. Aggregate Bond Index. Municipal represented by Bloomberg Barclays Municipal Bond Index. Yields represent past performance and fluctuate with market conditions. Current yields may be higher or lower than those quoted above. **Past performance is no guarantee of future results.** An index is unmanaged and not available for direct investment. Please see the end of the report for the definitions of the indexes.

Tax equivalent yield assumes a 20% effective tax rate. Yield to worst is the lowest potential yield that can be received on a bond without the issuer actually defaulting.

Key takeaways

- Investors in the highest effective tax brackets may benefit from holding municipal securities as part of fixed-income positioning.
- We expect municipal demand to remain strong in high-tax states.

Inflation rate and Treasury-bond yield converge

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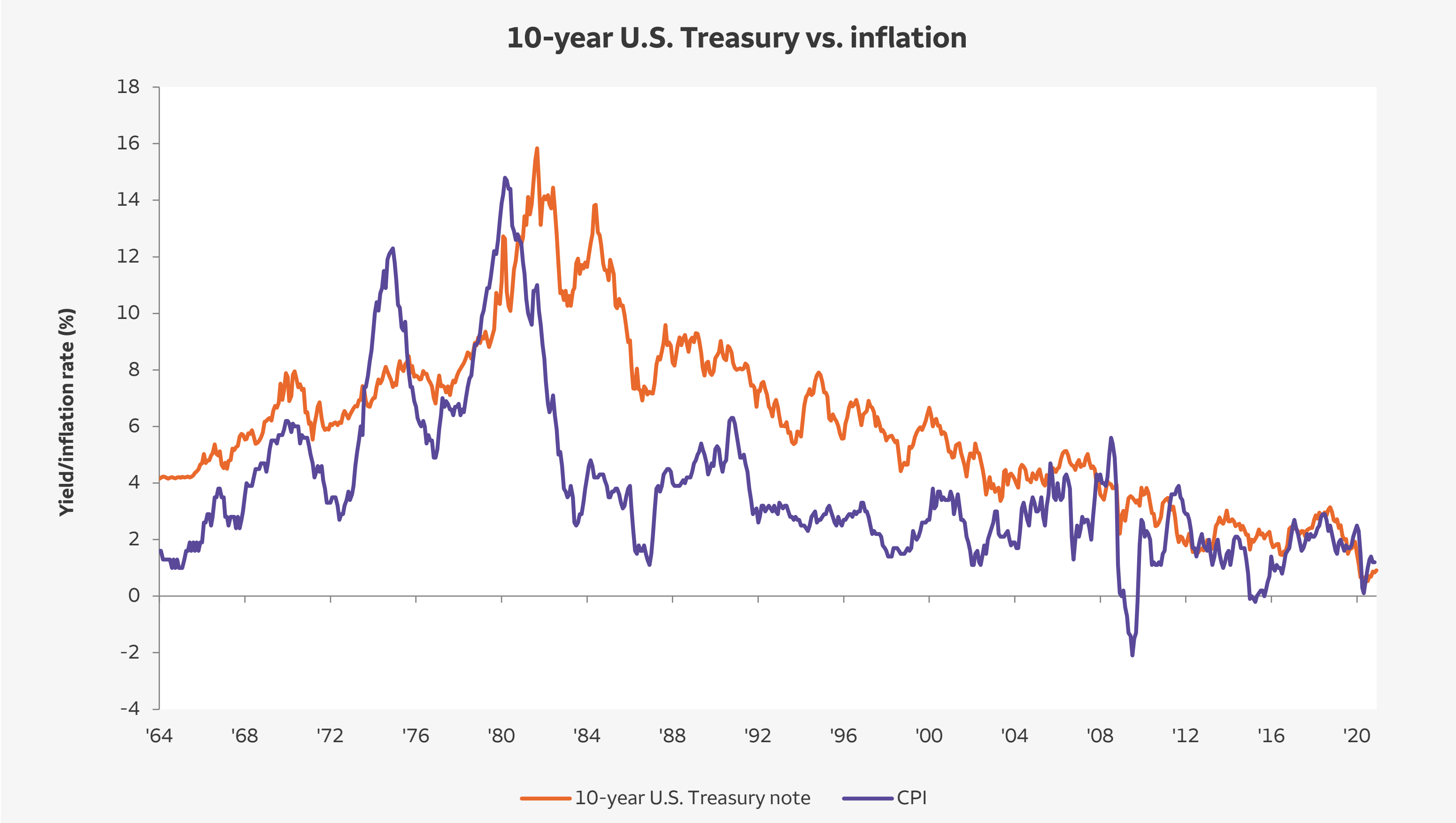
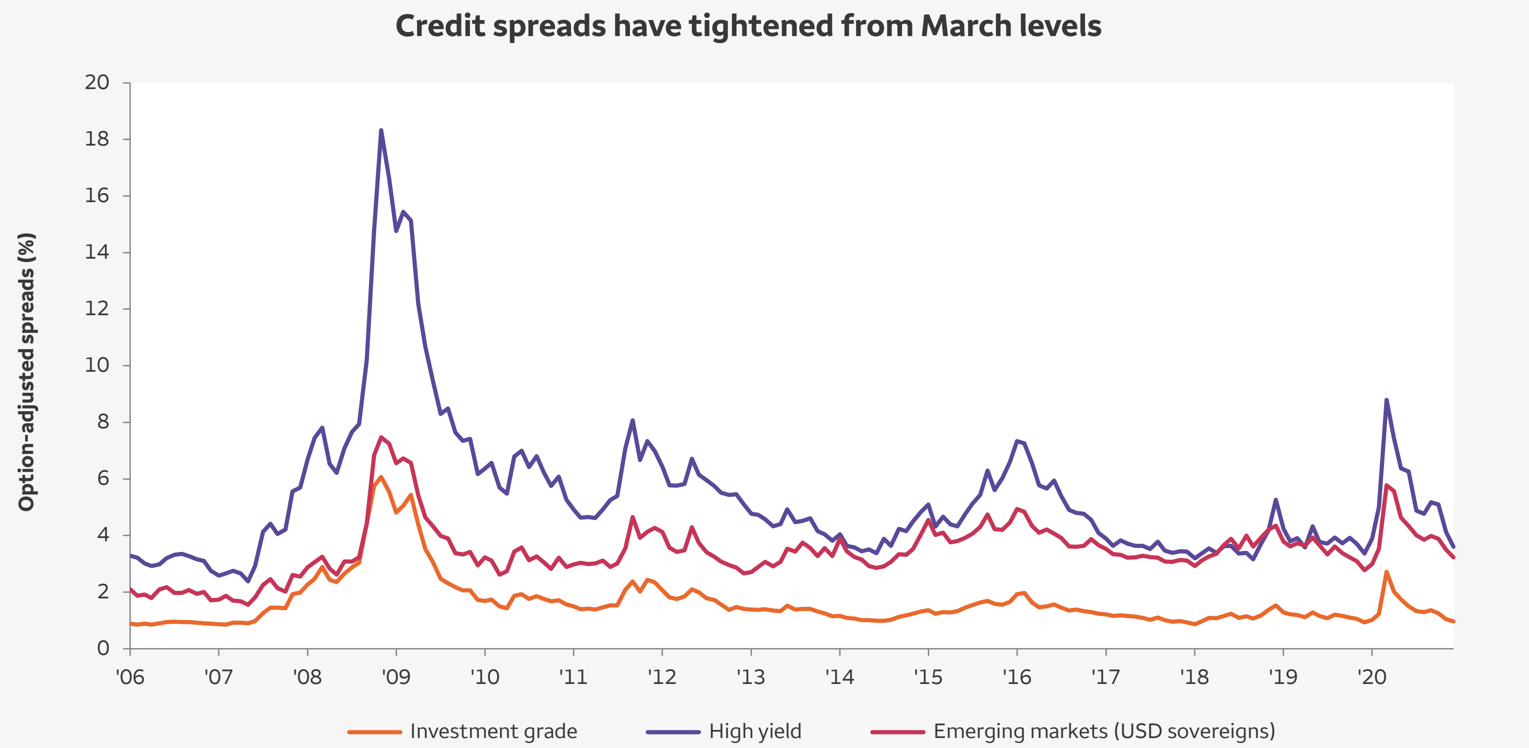


Sources: Bloomberg and Wells Fargo Investment Institute. 10-year U.S. Treasury note: monthly data from January 1, 1962 to December 31, 2020. CPI: monthly data from January 1, 1962 to November 30, 2020. Yields represent past performance and fluctuate with market conditions. Current yields may be higher or lower than those quoted above. **Past performance is no guarantee of future results**. Consumer Price Inflation (CPI) measures the price of a fixed basket of goods and services purchased by an average consumer.

Key takeaways

- Real yields on 10-year U.S. Treasury bonds have struggled to remain positive as nominal yields and inflation converge.
- To earn positive yields above the level of inflation (real yield), depending on risk tolerance, we think investors should consider high yield, emerging market debt and dividend-paying equities.

Credit market spreads

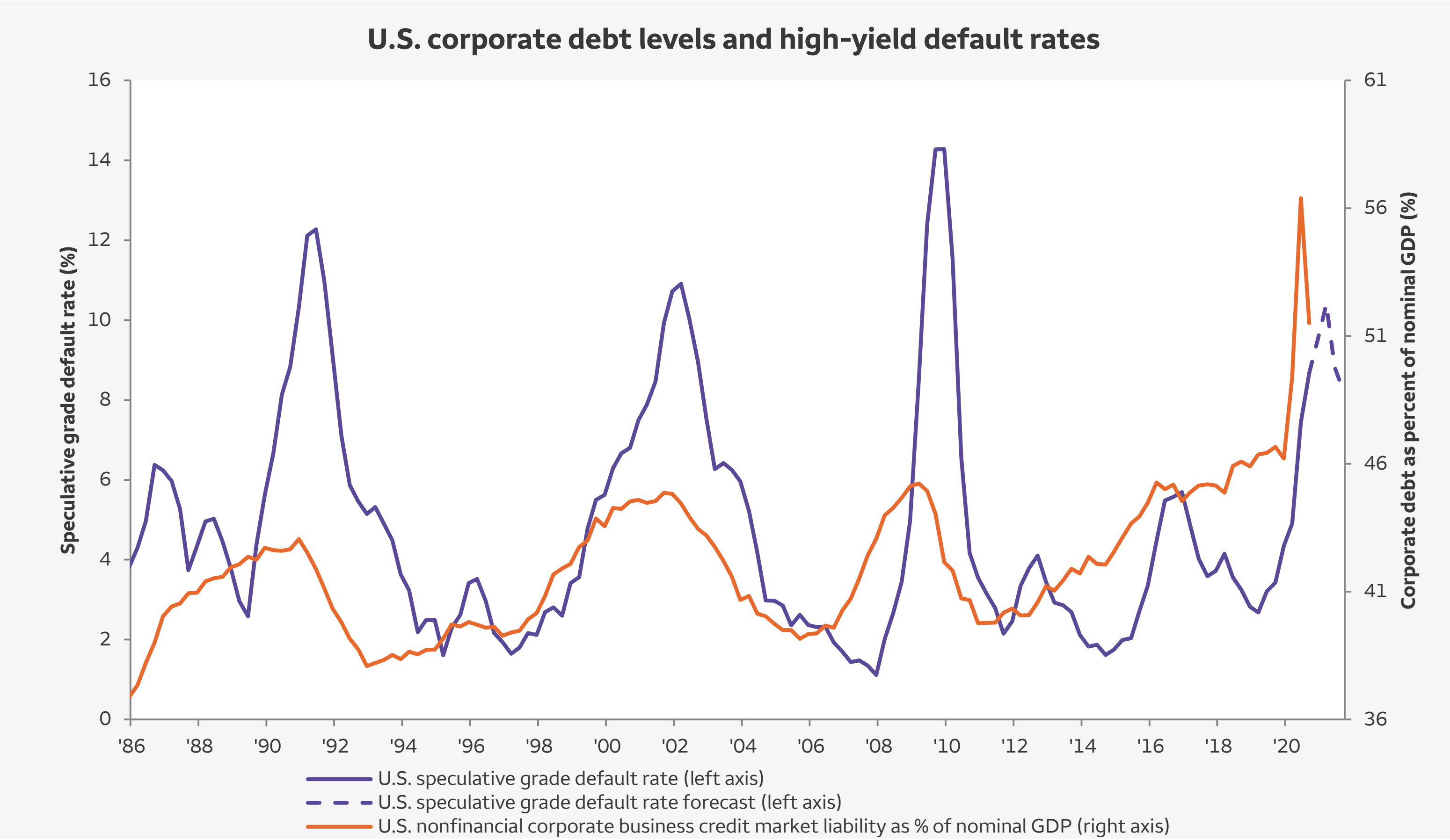


Sources: Bloomberg and Wells Fargo Investment Institute. Monthly data from January 1, 2006 to December 31, 2020. Option-adjusted spread is the difference in yield over equivalent-duration Treasuries. USD = U.S. dollar. Investment grade represented by Bloomberg Barclays U.S. Aggregate Bond Index. High yield represented by Bloomberg Barclays U.S. Corporate High Yield Bond Index. Emerging markets represented by J.P. Morgan Emerging Markets Bond Index Global (USD). **Past performance is no guarantee of future results.** An index is unmanaged and not available for direct investment. Please see the end of the report for the definitions of the indexes.

Key takeaways

- Credit spreads tend to increase during periods of uncertainty and decrease during periods of stability.
- We expect spreads of high-quality and low-quality bonds to narrow slightly as the outlook improves. At this time, credit selectivity is key.

Closing the gap?



Sources: Bloomberg, Moody's, and Wells Fargo Investment Institute. Quarterly data from January 1, 1986 to September 30, 2020. Q4 2020–Q4 2021 speculative grade default rate forecasts from Moody's forecasts, as of September 30, 2020. The nonfinancial corporate debt data includes both High Yield (HY) and investment-grade (IG) corporate debt. GDP = gross domestic product.

Key takeaways

- U.S. corporate debt outstanding is at an all-time high and issuance for both IG and HY debt broke records in 2020.
- Corporate default rates have been low by historical standards. However, strain from the coronavirus-related slowdown pushed defaults higher. Defaults are expected to peak in the first quarter of 2021.
- While we may see some near-term volatility, an extended low-rate environment should be a long-term positive for credit-related sectors allowing many issuers to refinance in order to extend maturities and lower interest expense.

Municipal and corporate default rates

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Credit rating	Municipal bonds (%)	Corporate bonds (%)
Aaa	0.00	0.36
Aa	0.02	0.79
A	0.1	2.11
Baa	1.10	3.58
Ba	3.57	15.40
B	17.49	33.70
Caa-C	25.07	47.89
Investment-grade	0.1	2.25
Speculative-grade	7.29	28.68

Sources: Moody's Investor Service and Wells Fargo Investment Institute, as of July 15, 2020. "U.S. municipal bond defaults and recoveries, 1970-2019". Yearly data from 1970 to 2019. 10-year average cumulative default rates .

Key takeaways

- Municipal defaults and bankruptcies are rare, especially compared to corporates, but they are no longer unheard of. The pandemic has taken a toll on constrained municipalities and local governments.
- The pace of municipal defaults has accelerated over the last decade, especially for lower rating sectors. Still, default rates between municipals and corporates remain divergent in the speculative-grade (high-yield) space.

Real assets highlights

General

- Individual commodity prices have historically tended to move together over very long bull and bear cycles. These "super-cycles" often lasted a decade or longer.
- China was the main driver of the last two commodity super-cycles (bull: 1999–2010, bear: 2011-present). Improving Chinese gross domestic product (GDP) growth may pave the way out of the current bear super-cycle.
- Commodity demand has rebounded substantially from second-quarter lows, yet remains below pre-pandemic levels.

Oil

- The coronavirus outbreak decimated oil demand in 2020. Historic production cuts by the world's top oil producers, along with a rebound in demand, have started to help clear excess supplies.
- Yet, the oil supply/demand balance remains on shaky ground, as supply is ample and demand is dependent on pandemic developments.

Gold

- Gold's prime macro drivers continue to be the direction and level of global interest rates and excessive global money printing.
- Investors are using gold as a hedge against the unknown impacts of persistently low long-term interest rates and significant quantitative easing (QE).

REITs (Real Estate Investment Trusts)

- REITs come in all shapes and sizes — a REIT that specializes in data centers differs wildly from a REIT that specializes in malls or office buildings — and returns can vary widely as a result.
- The pandemic has accelerated some trends, like the shift towards e-commerce and away from brick-and-mortar retail. It has also generated possible new longer-term trends, like the shift toward working from home.

Real assets scorecard

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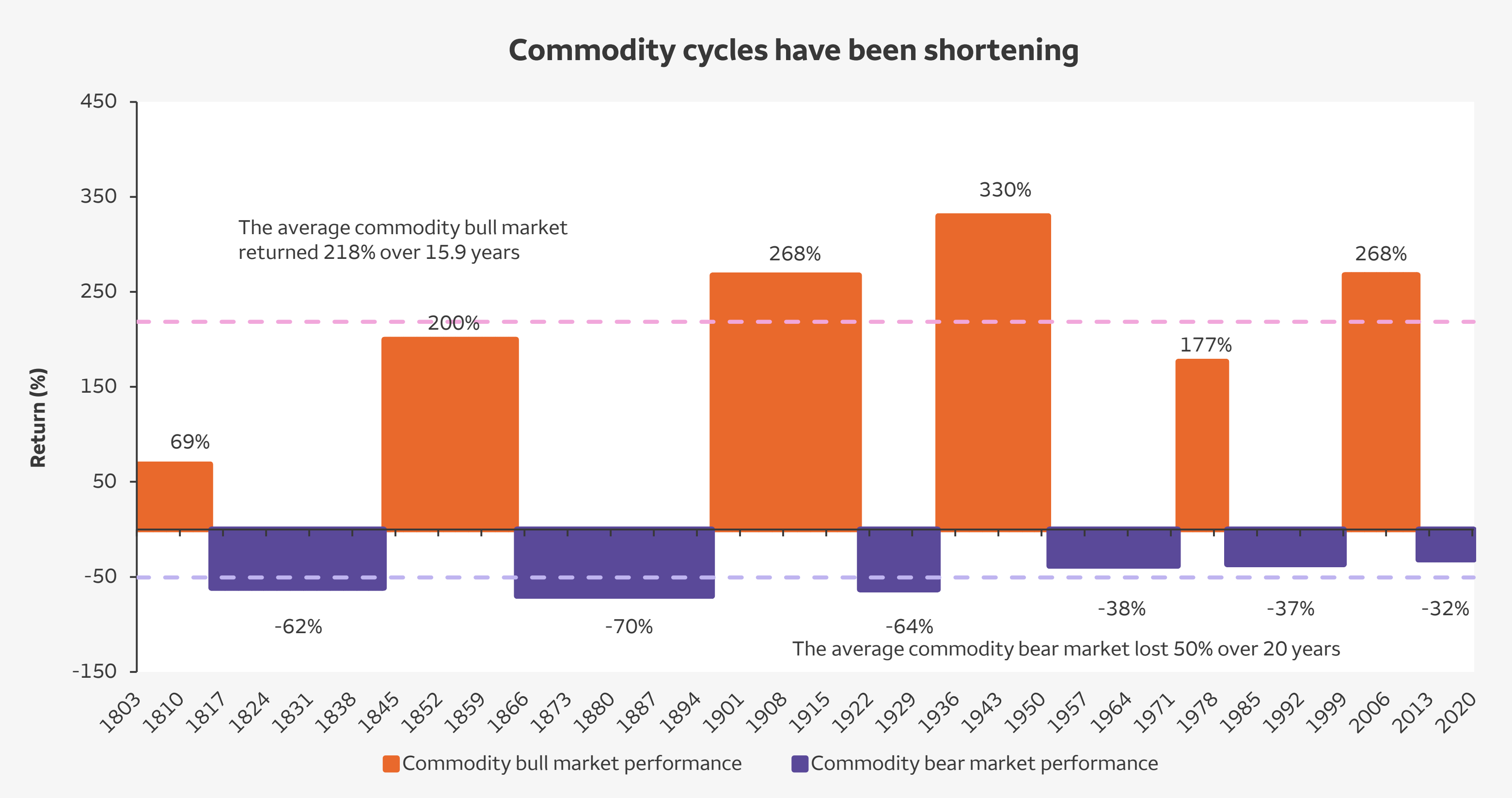
Asset class	4Q20 return (%)	YoY return (%)	Yield (%)
Commodities	10.19	-3.12	–
Energy commodities	2.21	-42.72	–
Agricultural commodities	21.36	16.48	–
Precious metals commodities	2.41	25.60	–
Base metals commodities	14.25	16.33	–
Global REITs	13.49	-8.18	3.88
U.S. REITs	8.15	-5.12	3.61
International REITs	14.02	-6.52	3.64

Sources: Bloomberg and Wells Fargo Investment Institute, as of December 31, 2020. YTD = year to date. YoY = year over year. Indexes in order represented by Bloomberg Commodity Index, Bloomberg Energy Subindex, Bloomberg Agriculture Subindex, Bloomberg Precious Metals Subindex, Bloomberg Industrial Metals Subindex, FTSE All Equity REITs Index, FTSE EPRA/NAREIT Developed Index, FTSE EPRA NAREIT Developed ex-U.S. REITs Index. Yields represent past performance and fluctuate with market conditions. Current yields may be higher or lower than those quoted above. **Past performance is no guarantee of future results.** An index is unmanaged and not available for direct investment. Please see the end of the report for the definitions of the indexes.

Key takeaways

- Precious metals underperformed in the fourth quarter of 2020. Climbing interest rates and a general risk on market environment were headwinds.
- Industrial metals outperformed as the global economy recovered from the depths of the pandemic induced recession.

Commodity super-cycles



Sources: Bloomberg, Ned Davis Research, and Wells Fargo Investment Institute. Monthly data from January 1, 1802 to December 31, 2020. NDR Commodity Composite used for December 1802–February 1972. Reuter's Continuous Commodity Index used for March 1972–December 2020. The Reuters Continuous Commodity Index is an equal-weighted geometric average of commodity price levels relative to the base year average price. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.** Please see the end of the report for the definitions of the indexes.

Key takeaways

- Historically, commodities have tended to move together in super-cycles. These cycles have gradually shortened in length over time.
- The current commodity bear super-cycle, which began in 2011, may be shorter than the 20-year average. There are signs that the end of the current bear market may be near.
- Excessive supplies, built-up during the bull years, remain a concern.

China is the big commodity consumer

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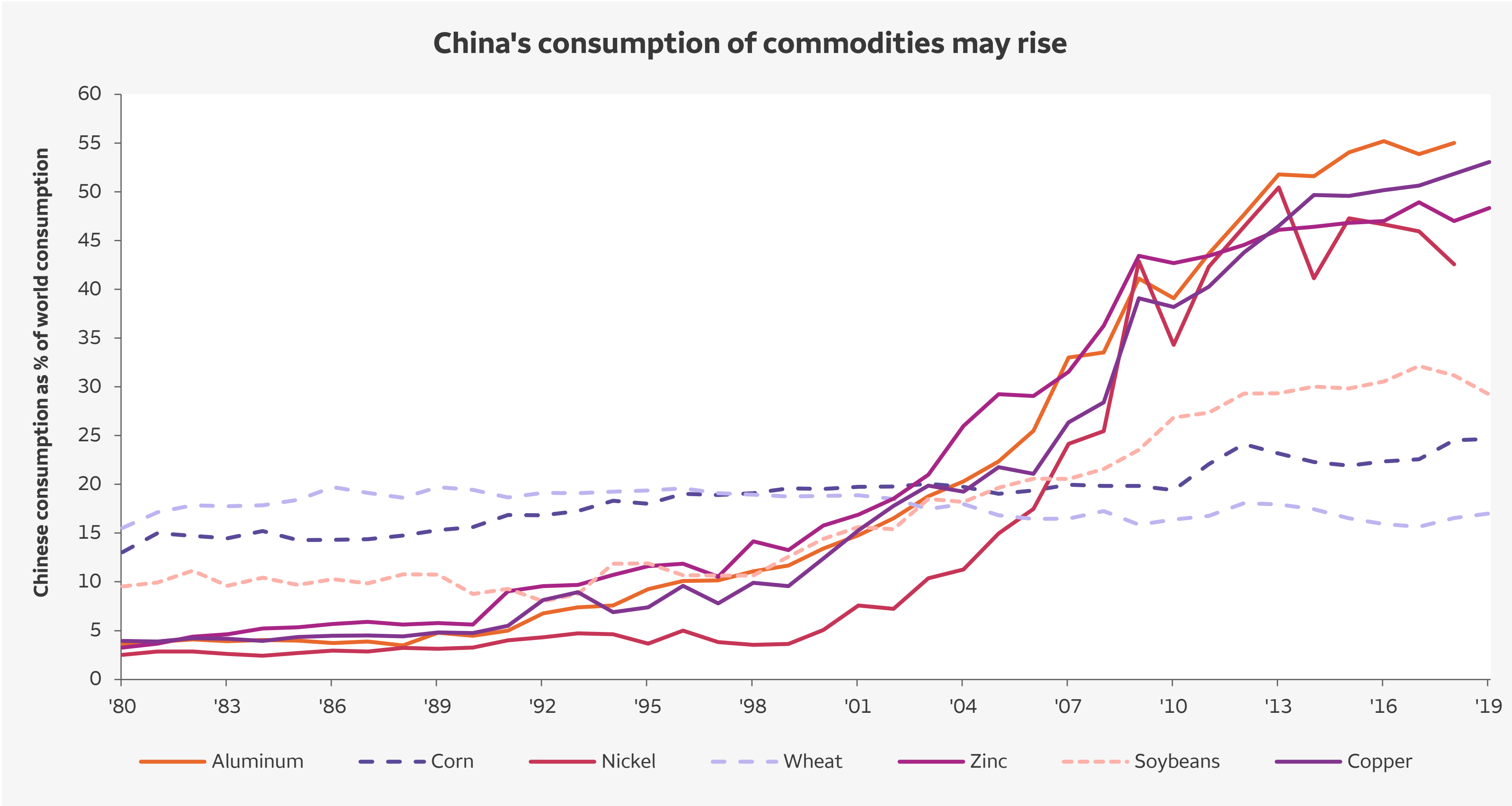

Sources: Bloomberg, U.S. Department of Agriculture, World Bureau of Metal Statistics, and Wells Fargo Investment Institute. Annual data from January 1, 1980 to December 31, 2019. Aluminum and Nickel: annual data from January 1, 1980 to December 31, 2018.

Key takeaways

- China is one of the world's largest commodity importers today, accounting for more than 45% of the world's demand for industrial metals.
- China's commodity consumption growth, however, has recently begun to rise. This is, in part, why commodity prices may be moving out of the super-cycle bear that has persisted since 2011.

*Super-cycle = If you look at commodity prices over the very long term (hundreds of years), it becomes evident that they tend to move in overall bull and bear cycles, some lasting decades. These are super-cycles.

Commodity prices are recovering

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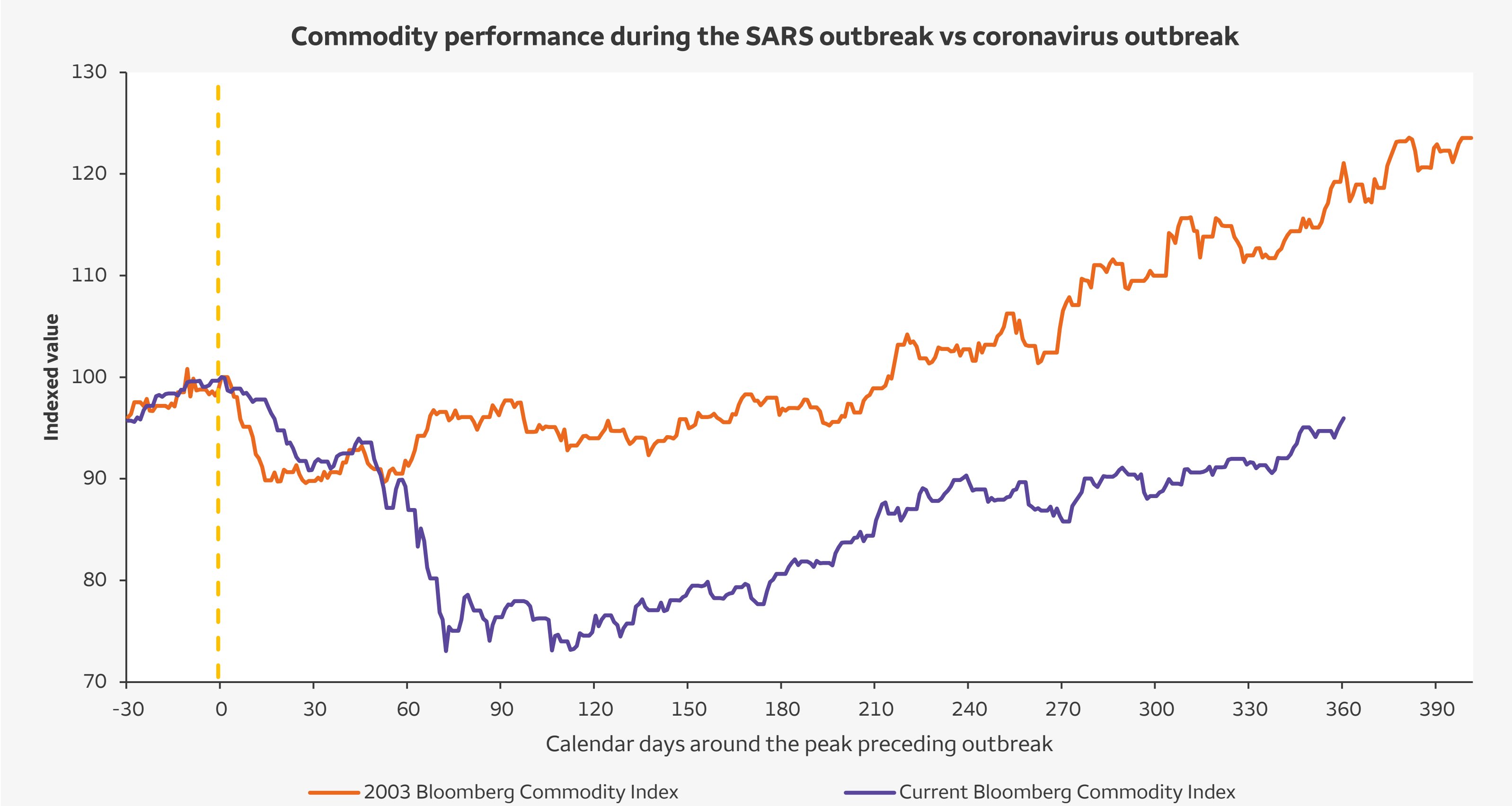
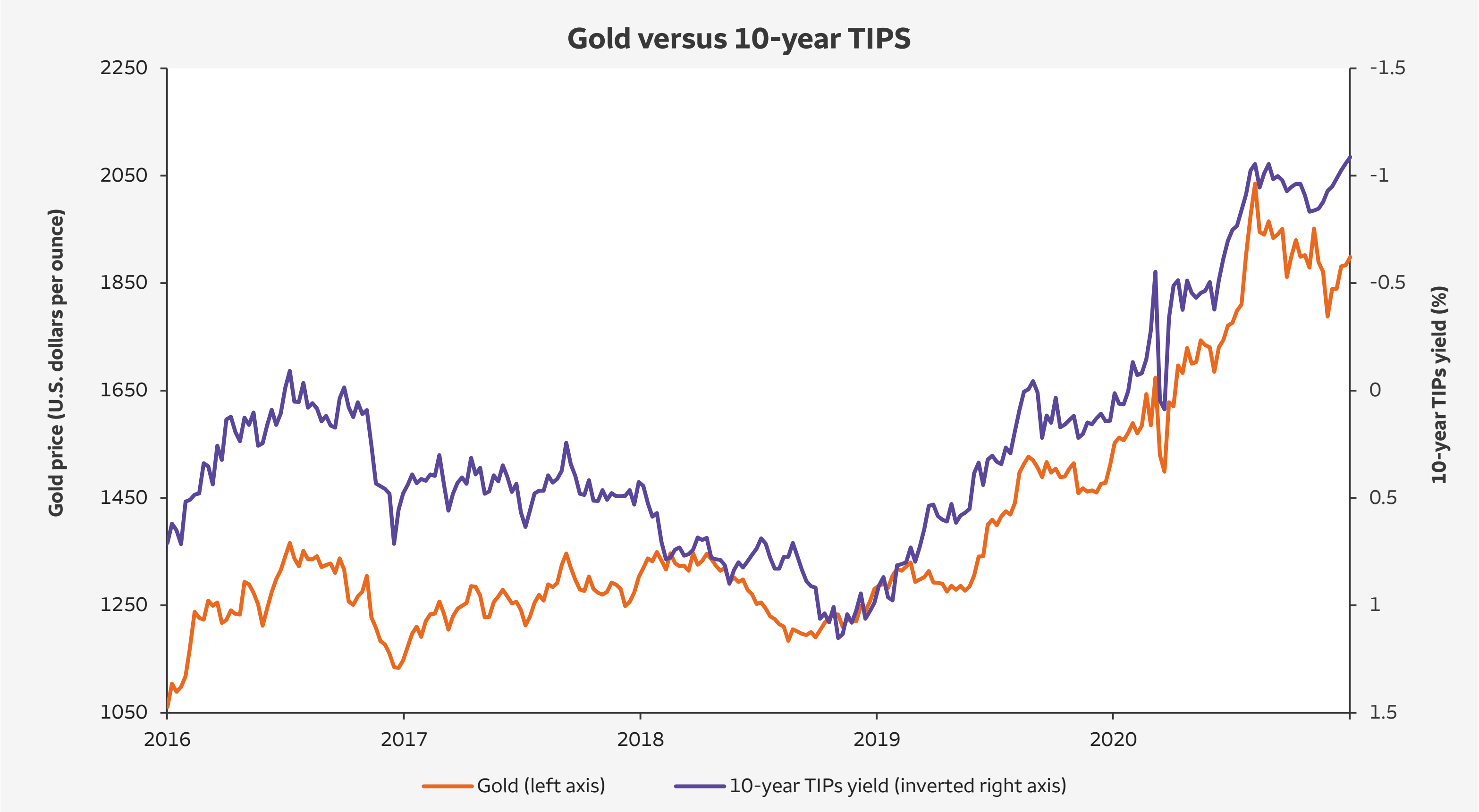


Sources: Bloomberg and Wells Fargo Investment Institute, 2003 Bloomberg Commodity Index: daily data from February 4, 2003 to November 6, 2004. Current Bloomberg Commodity Index: daily data from December 6, 2019 to December 31, 2020. Indexed to 100 as of the commodity peak prior to outbreak fears which correspond to March 7, 2003 and January 6, 2020. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.**

Key takeaways

- Commodity demand has rebounded substantially from second-quarter lows yet remains below pre-pandemic levels.
- Commodity prices have been slower to recover than they were during the 2003 SARS outbreak, as the current pandemic has had a much more severe impact on economic growth and commodity demand.
- Demand uncertainties remain, but optimism surrounding economic growth may support commodity prices.

Gold as a portfolio hedge



Sources: Bloomberg and Wells Fargo Investment Institute. Weekly data from January 1, 2016 to December 31, 2020. TIPS = Treasury Inflation-Protected Securities. Yields represent past performance and fluctuate with market conditions. Current yields may be higher or lower than those quoted above. **Past performance is no guarantee of future results.**

Key takeaways

- Market volatility and uncertainty — like that experienced around the coronavirus outbreak — tend to increase the demand for gold.
- Gold's prime macro drivers, though, continue to be the direction and level of global interest rates and excessive global money printing. Investors are using gold as a hedge against the unknown impacts of persistently low long-term interest rates and excessive QE.

Global oil demand/supply balance rebounding

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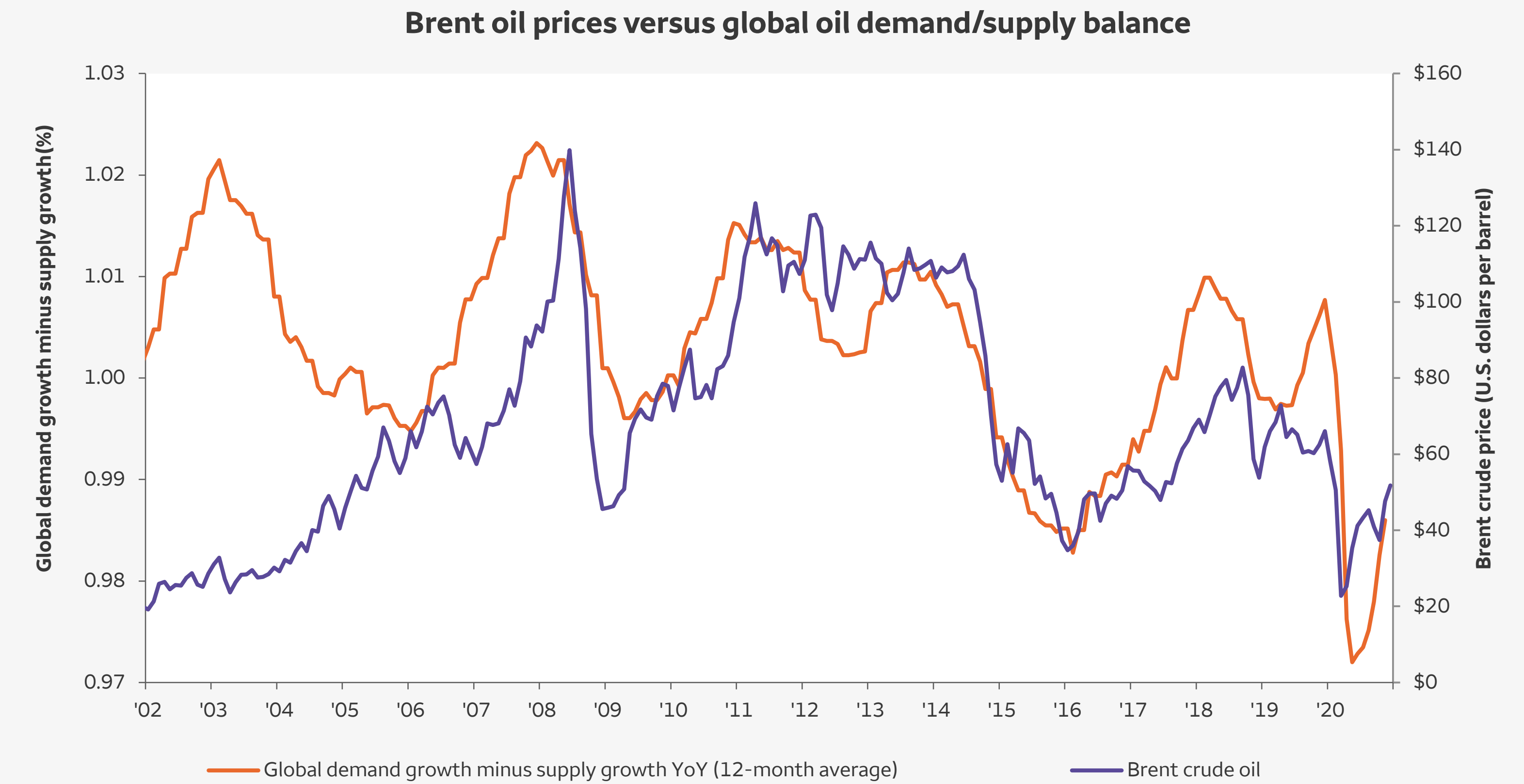

Sources: Bloomberg, Energy Information Administration, and Wells Fargo Investment Institute. Brent crude oil: monthly data from January 1, 2002 to December 31, 2020. Global demand/supply growth: monthly data from January 1, 2002 to November 30, 2020. YoY = year-over-year.

Key takeaways

- The coronavirus outbreak decimated oil demand in 2020. Historic production cuts by the world's top oil producers, along with a demand rebound, have started to help clear excess supplies.
- Yet, the oil supply/demand balance remains on shaky ground, as supply is ample and demand is dependent on pandemic developments.

A tipping point for green energy

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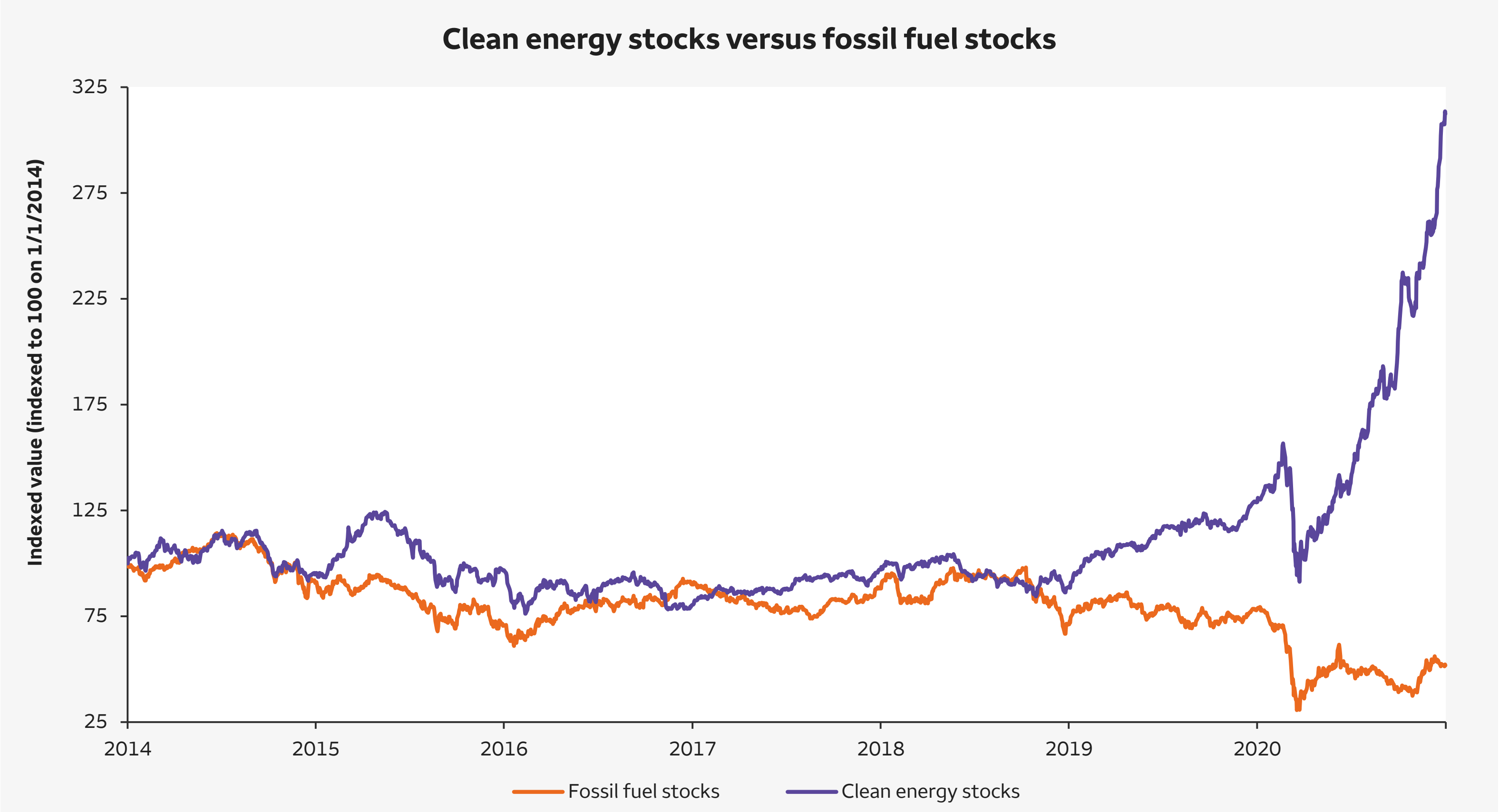

Sources: Bloomberg and Wells Fargo Investment Institute. Daily data from January 1, 2014 to December 31, 2020. Fossil fuel stocks are represented by the total return of the S&P Supercomposite Energy Index which measures those companies included in the S&P Composite 1500 that are classified as members of the GICS® Energy sector. Clean energy stocks are represented by the total return of the S&P Global Clean Energy Index which measures the performance of global companies that represent the listed clean energy universe. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.**

Key takeaways

- Progress in renewables and green technology continues to impress.
- After years of lackluster performance and flows, this past year saw record inflows and impressive outperformance. Could we be witnessing the tipping point for green energy?

Are renewables overtaking fossil fuels?

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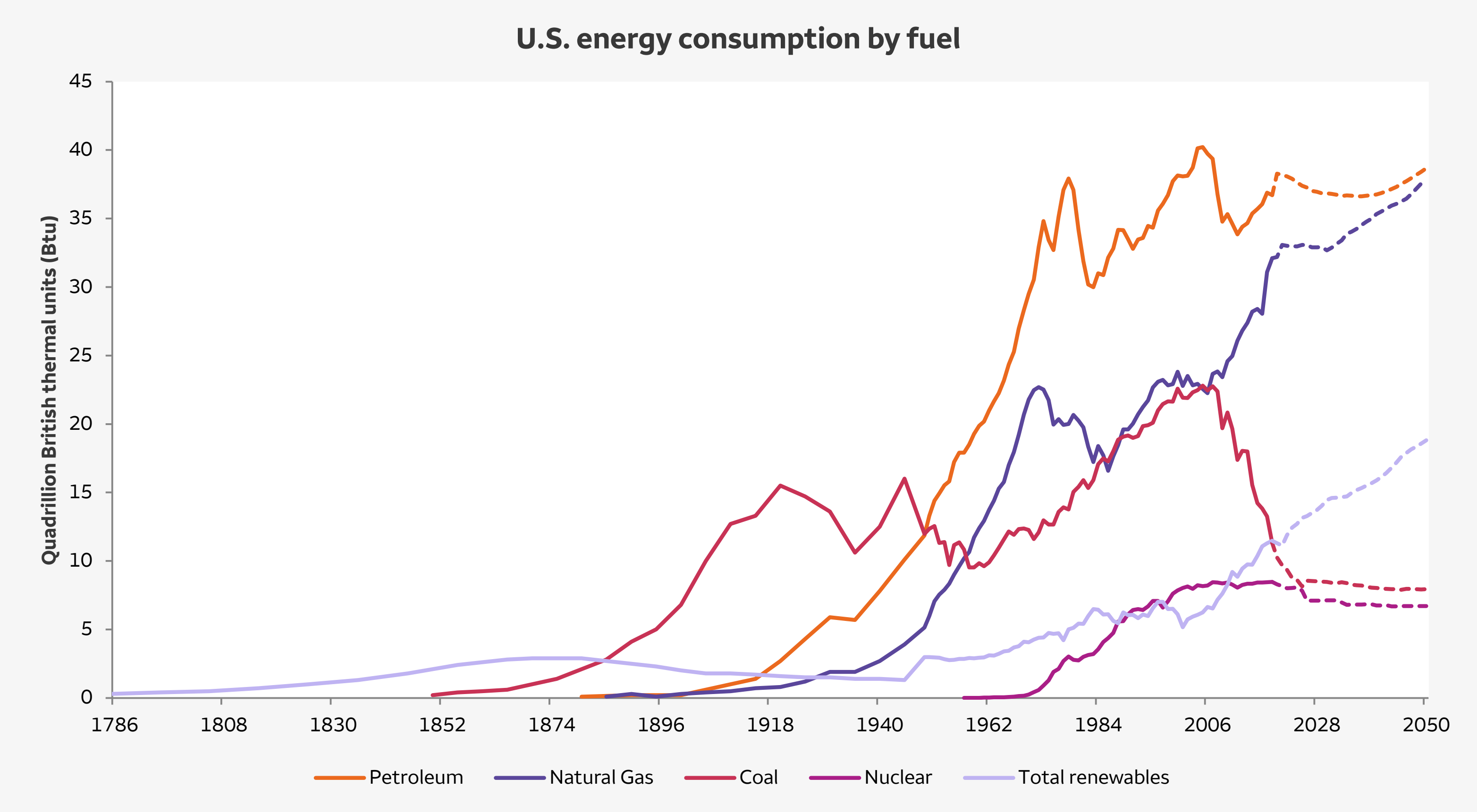
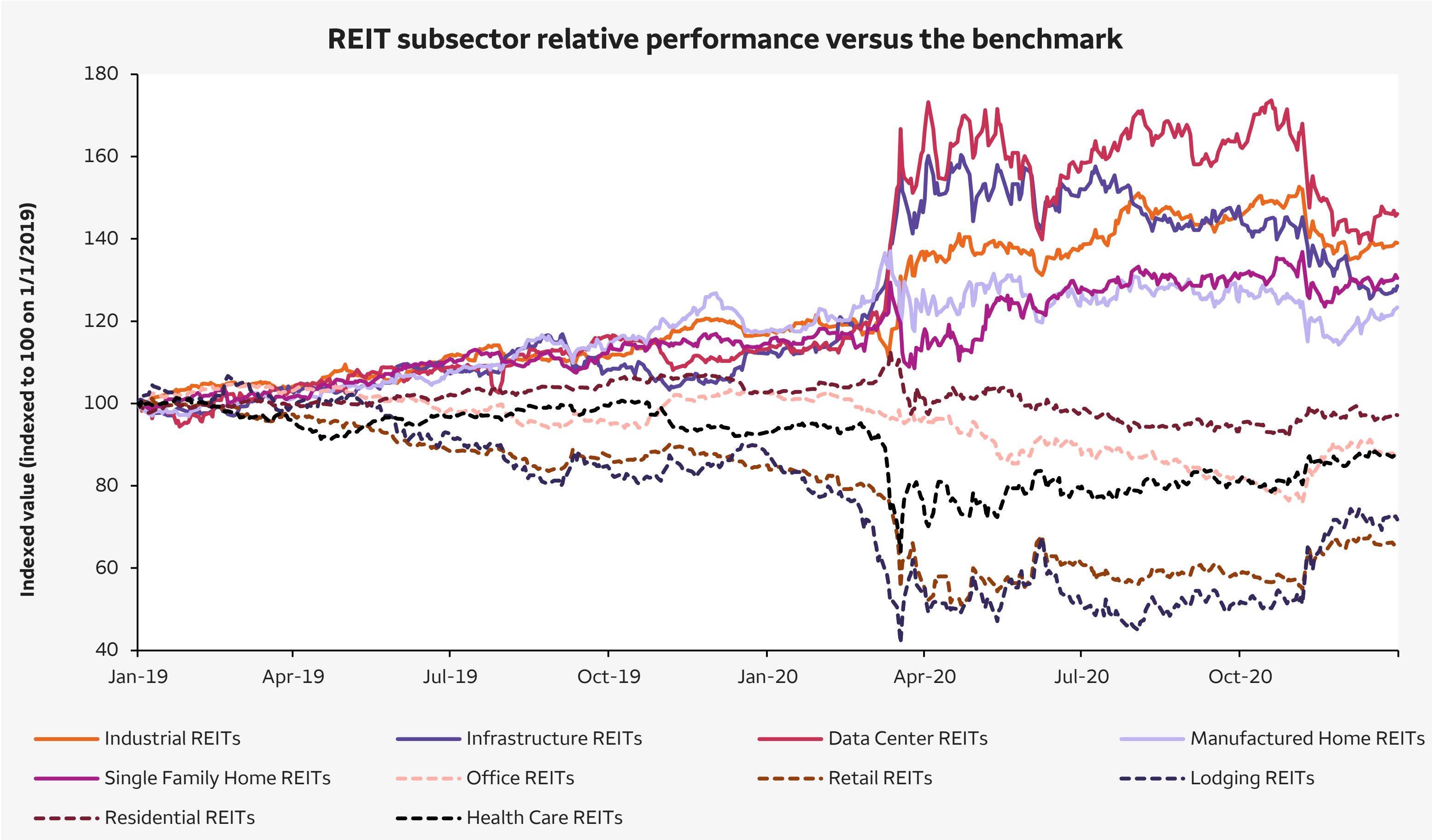


Sources: U.S. Energy Information Administration (EIA) and Wells Fargo Investment Institute. Annual data from January 1, 1786 to December 31, 2050. EIA forecast data from 2020–2050 as of December 31, 2020. Total renewables includes hydro, geothermal, wind, solar, and biomass primary energy consumption. Dotted lines represent EIA forecast data. Forecasts are not guaranteed and based on certain assumptions and on views of market and economic conditions which are subject to change.

Key takeaways

- Our lives revolve around energy use — lots of it. Fossil fuels such as coal, oil, and natural gas generate most of that energy today.
- Progress has been made in renewable energies, and growth will undoubtedly accelerate in the years to come.
- Yet, decades will likely pass before renewables overtake fossil fuels as the world's primary energy source.

A REIT is a REIT is a REIT, right? No.



Sources: Bloomberg, NAREIT, and Wells Fargo Investment Institute. Daily data from January 1, 2019 to December 31, 2020. REIT = real estate investment trust. Relative performance is measured by the FTSE NAREIT subsector indexes versus FTSE NAREIT All Equity REITS Index. **Past performance is no guarantee of future results.** An index is unmanaged and not available for direct investment. Please see the end of the report for the definitions of the indexes.

Key takeaways

- REITs come in all shapes and sizes — a REIT that specializes in data centers differs wildly from a REIT that specializes in malls or office buildings — and returns vary widely as a result.
- The pandemic has accelerated some trends, like the shift towards e-commerce and away from brick-and-mortar retail. It also has generated possible new longer-term trends, like the shift toward working from home.

Alternative investments highlights

Hedge funds

- Over a full market cycle, hedge funds can help decrease risk and improve diversification.
- The 'stock-pickers' environment of 2020 should carry over into 2021, benefiting Equity Hedge strategies.
- Securitized credit should benefit in 2021 from a rebound in economic growth, lower levels of unemployment, modest inflation, and supportive monetary policy.
- Corporate deal activity should accelerate in 2021, fueled by large amounts of dry powder in both corporate coffers as well as private equity portfolios.

Private capital

- Large buyout valuations remain elevated, with better opportunities in middle-market and small buyout strategies.
- We are still constructive on niche private equity strategies — such as those focused on international markets or secondaries.
- Private debt strategies focused on distressed or special situations likely will remain attractive in 2021 despite an overall tightening in credit spreads. We also anticipate opportunities for specialized direct lending strategies.
- Though real estate prices are under pressure from the pandemic, private real assets have historically performed well over a full market cycle.

Alternative investments scorecard

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Index	4Q20 return (%)	3Q20 return (%)	YTD return (%)	YoY return (%)
HFRI Fund Weighted Composite as of 12/31/2020	10.68	4.43	11.61	11.61
HFRI Event Driven as of 12/31/2020	11.76	4.27	9.30	9.30
HFRI Macro as of 12/31/2020	4.73	1.17	5.22	5.22
HFRI Relative Value as of 12/31/2020	5.17	2.94	3.28	3.28
HFRI Equity Hedge as of 12/31/2020	14.50	6.13	17.49	17.49
Cambridge Associates U.S. Private Equity as of 6/30/2020	–	–	-1.61	3.35
ILPA Private Credit as of 6/30/2020	–	–	-6.36	-4.25
NCREIF Property as of 9/30/2020	–	0.74	0.45	2.00

Sources: Bloomberg, Institutional Limited Partners Association (ILPA), © 2020 – Morningstar Direct, All Rights Reserved[1], and Wells Fargo Investment Institute, as of December 31, 2020. YoY = year over year. YTD = year to date. Index returns do not represent investment performance or the results of actual trading. Index returns reflect general market results; assume the reinvestment of dividends and other distributions; and do not reflect deductions for fees, expenses, or taxes applicable to an actual investment. Unlike most asset-class Indexes, HFR index returns are net of all fees. Because the HFR Indexes are calculated based on information that is voluntarily provided, actual returns may be higher or lower than those reported. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.** Please see the end of the report for the definitions of the indexes. The Cambridge Index uses a horizon calculation based on data compiled from more than 1,400 institutional-quality buyout, growth equity, private equity energy, and subordinated capital funds formed between 1986 and 2017. The funds included in the index report their performance voluntarily, and therefore, the index may reflect a bias towards funds with records of success. **More information on the limitations of utilizing this Index can be found at the end of this presentation.**

Key takeaways

- Hedge funds have tended to benefit from a reduction in equity correlations as well as greater dispersion among sectors, industries, and geographies.

Alternative investments, such as hedge funds and private equity/private debt funds, are not suitable for all investors and are only open to accredited or qualified investors within the meaning of the U.S. securities laws. They are speculative and involve a high degree of risk that is suitable only for those investors who have the financial sophistication and expertise to evaluate the merits and risks of an investment in a fund and for which the fund does not represent a complete investment program. While investors may potentially benefit from the ability of alternative investments to potentially improve the risk/reward profiles of their portfolios, the investments themselves can carry significant risks. There may be no secondary market for alternative investment interests, and transferability may be limited or even prohibited. Hedge fund strategies, such as Equity Hedge, Event Driven, Macro, and Relative Value, may expose investors to risks such as short selling, leverage, counterparty, liquidity, volatility, the use of derivative instruments, and other significant risks. Real estate has special risks, including the possible illiquidity of the underlying properties, credit risk, interest rate fluctuations, and the impact of varied economic conditions.

Diversification benefits of hedge funds

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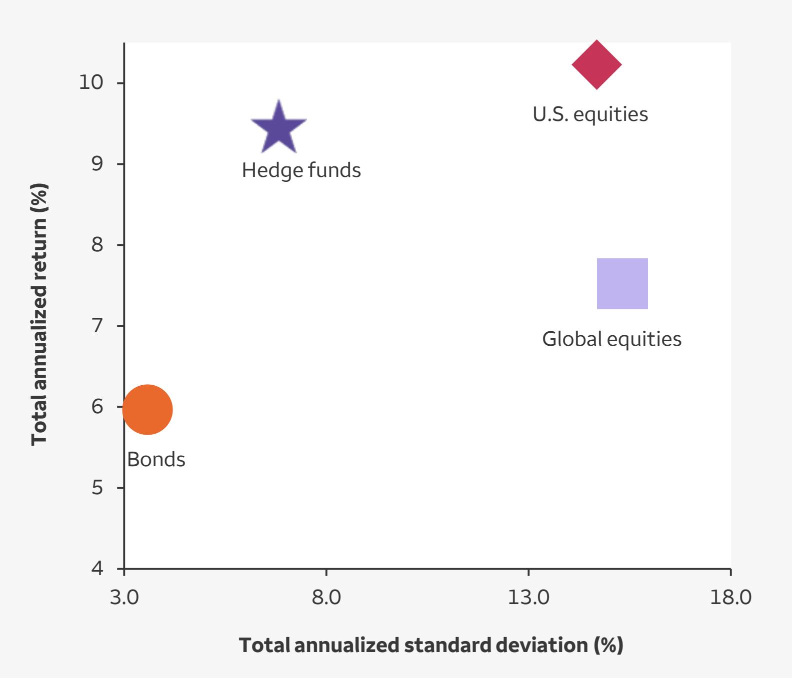
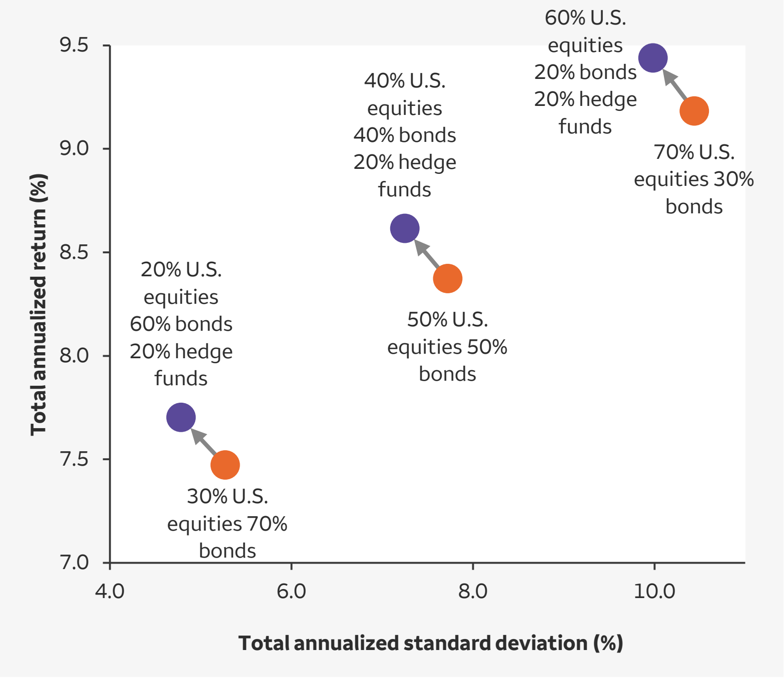
Hedge funds can potentially reduce risk in a portfolio of stocks and bonds





Sources: © 2020 – Morningstar Direct, All Rights Reserved[1], and Wells Fargo Investment Institute. Data from January 1, 1990 to December 31, 2020. Bonds = Bloomberg Barclays U.S. Aggregate Bond Index. U.S. equities = S&P 500 Index. Global equities = MSCI World Index. Hedge funds = HFRI Fund Weighted Composite Index. Index returns do not represent investment performance or the results of actual trading. Index returns reflect general market results, assume the reinvestment of dividends and other distributions and do not reflect deduction for fees, expenses, or taxes applicable to an actual investment. Unlike most asset class Indexes, HFR Index returns are net of all fees. Because the HFR Indexes are calculated based on information that is voluntarily provided actual returns may be lower than those reported. An index is unmanaged and not available for direct investment **Hypothetical and past performance is no guarantee of future results.** Standard deviation is a measure of the volatility of returns. The higher the standard deviation, the greater volatility has been. Please see the end of the report for the definitions of the indexes.

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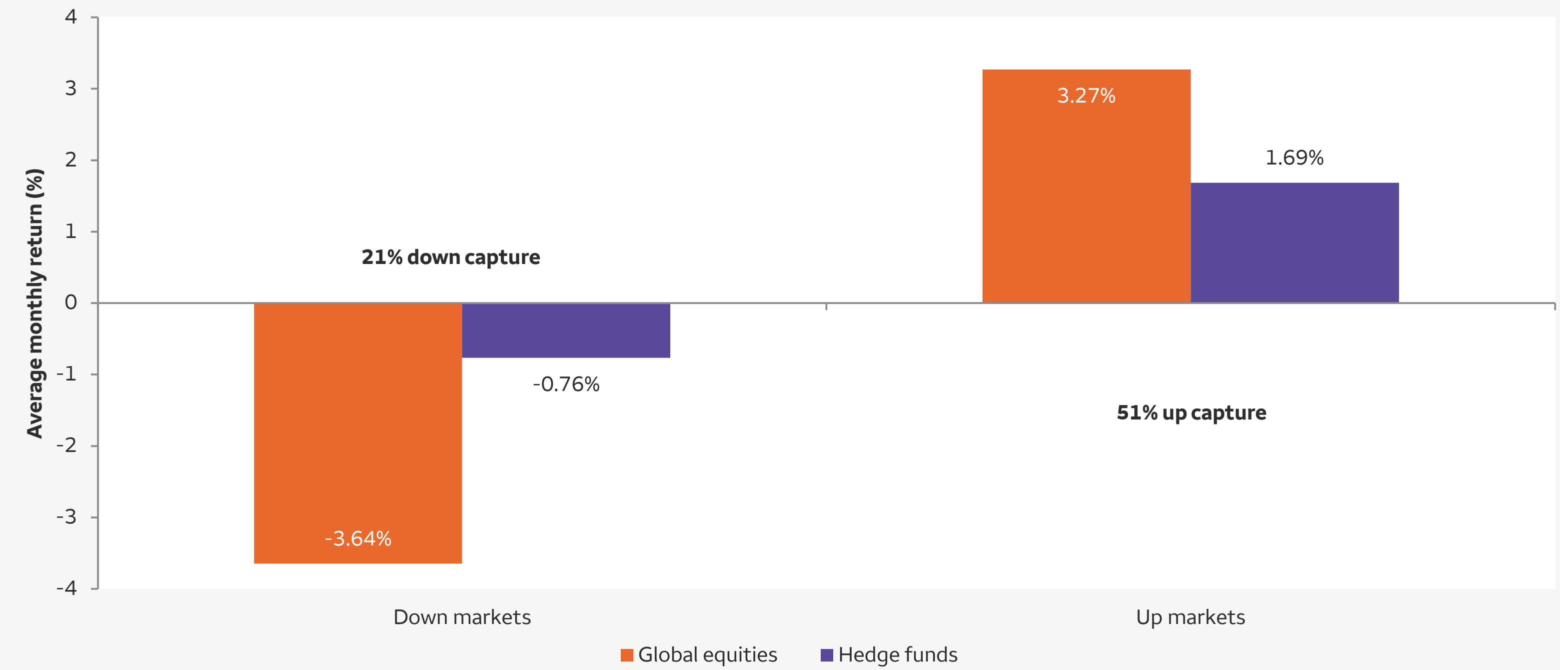
Key takeaways

- Adding hedge funds to a traditional portfolio of stocks and bonds has historically increased returns and decreased risk.

Diversification strategies do not guarantee investment returns or eliminate the risk of loss.

Hedge funds may outperform by not losing

Hedge funds can help reduce losses and hold potential for the upside



Sources: © 2020 – Morningstar Direct, All Rights Reserved[1], and Wells Fargo Investment Institute. Data from January 1, 1990 to December 31, 2020. Hedge funds represented by the HFRI Fund Weighted Composite Index. Global equities represented by the MSCI World Index. Index returns do not represent investment performance or the results of actual trading. Index returns reflect general market results, assume the reinvestment of dividends and other distributions, and do not reflect deduction for fees, expenses or taxes applicable to an actual investment. HFR Index returns are net of all fees. Because the HFR Indexes are calculated based on information that is voluntarily provided actual returns may be lower than those reported. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.** Please see the end of the report for the definitions of the indexes.

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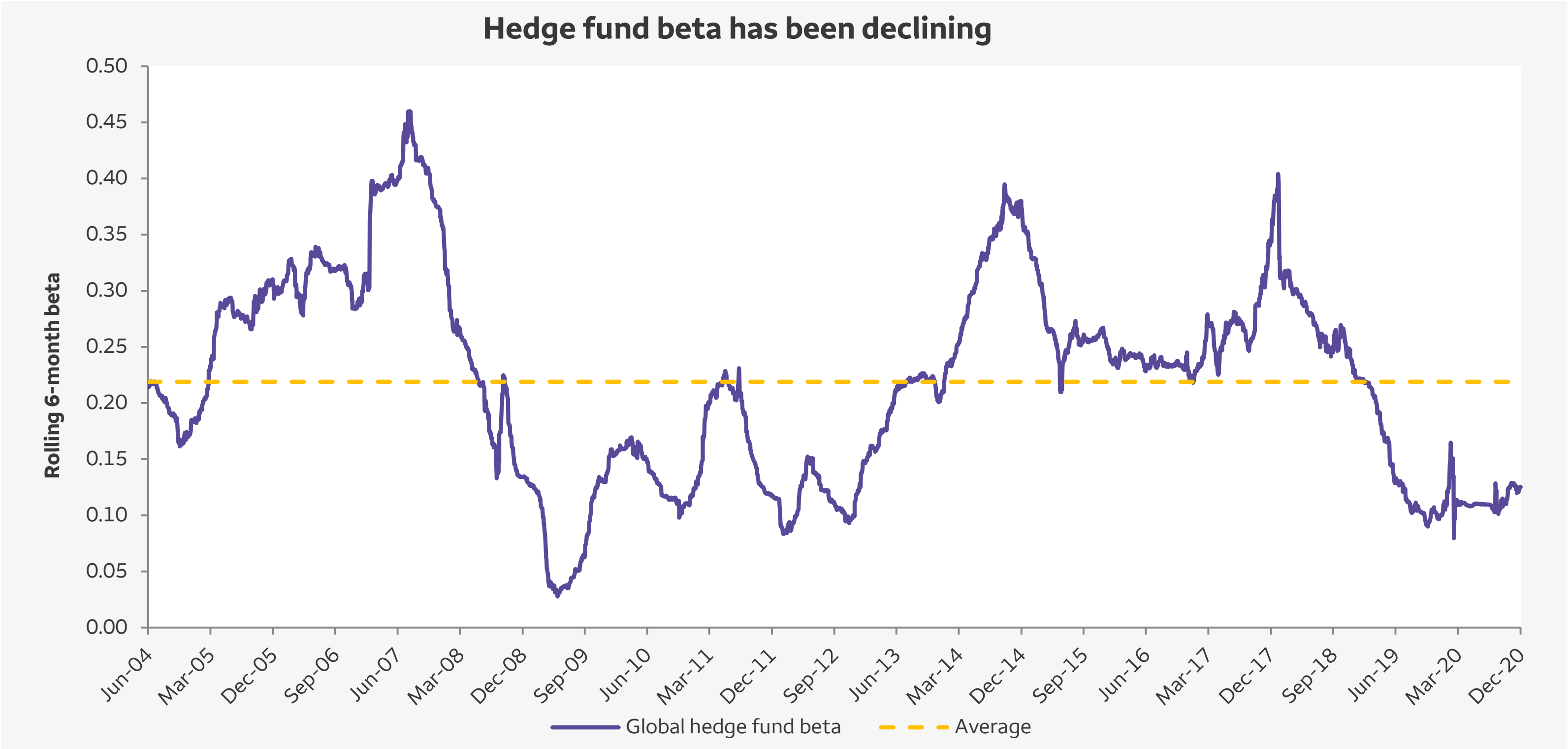
Key takeaways

- Hedge funds can potentially reduce losses during periods of negative global equity market performance while maintaining participation in the upside.

Upside capture ratio measures a manager's performance in up markets relative to the market (benchmark) itself. It is calculated by taking the security's upside capture return and dividing it by the benchmark's upside capture return. Downside capture ratio measures a manager's performance in down markets. In essence, it tells you what percentage of the down market was captured by the manager.

Hedge funds have performed as expected despite low exposure to global equity markets



Sources: Bloomberg and Wells Fargo Investment Institute. Daily data from June 30, 2004 to December 31, 2020. Beta is a measure of market sensitivity and is relative to the MSCI World Index. Hedge funds represented by the HFRX Global Hedge Fund Index. Index returns do not represent investment performance or the results of actual trading. Index returns reflect general market results, assume the reinvestment of dividends and other distributions, and do not reflect deduction for fees, expenses or taxes applicable to an actual investment. Unlike most asset class Indexes, HFR Index returns are net of all fees. Because the HFR Indexes are calculated based on information that is voluntarily provided actual returns may be lower than those reported. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.** Please see the end of the report for the definitions of the indexes.

Key takeaways

- We expect global hedge funds beta, the volatility of hedge funds compared to the volatility of the global equity market, to remain low while still participating in the market's upside.

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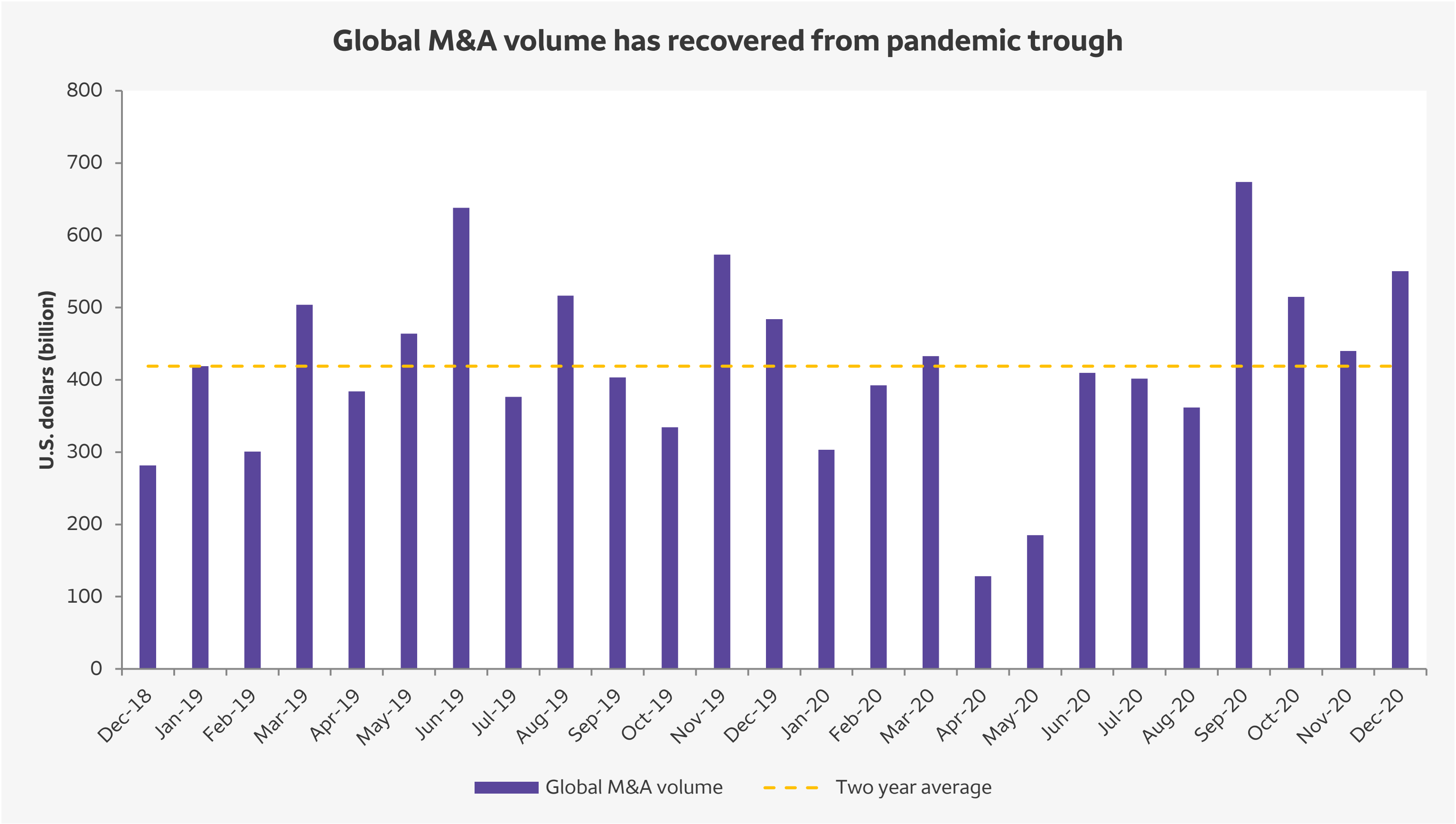
M&A activity is improving

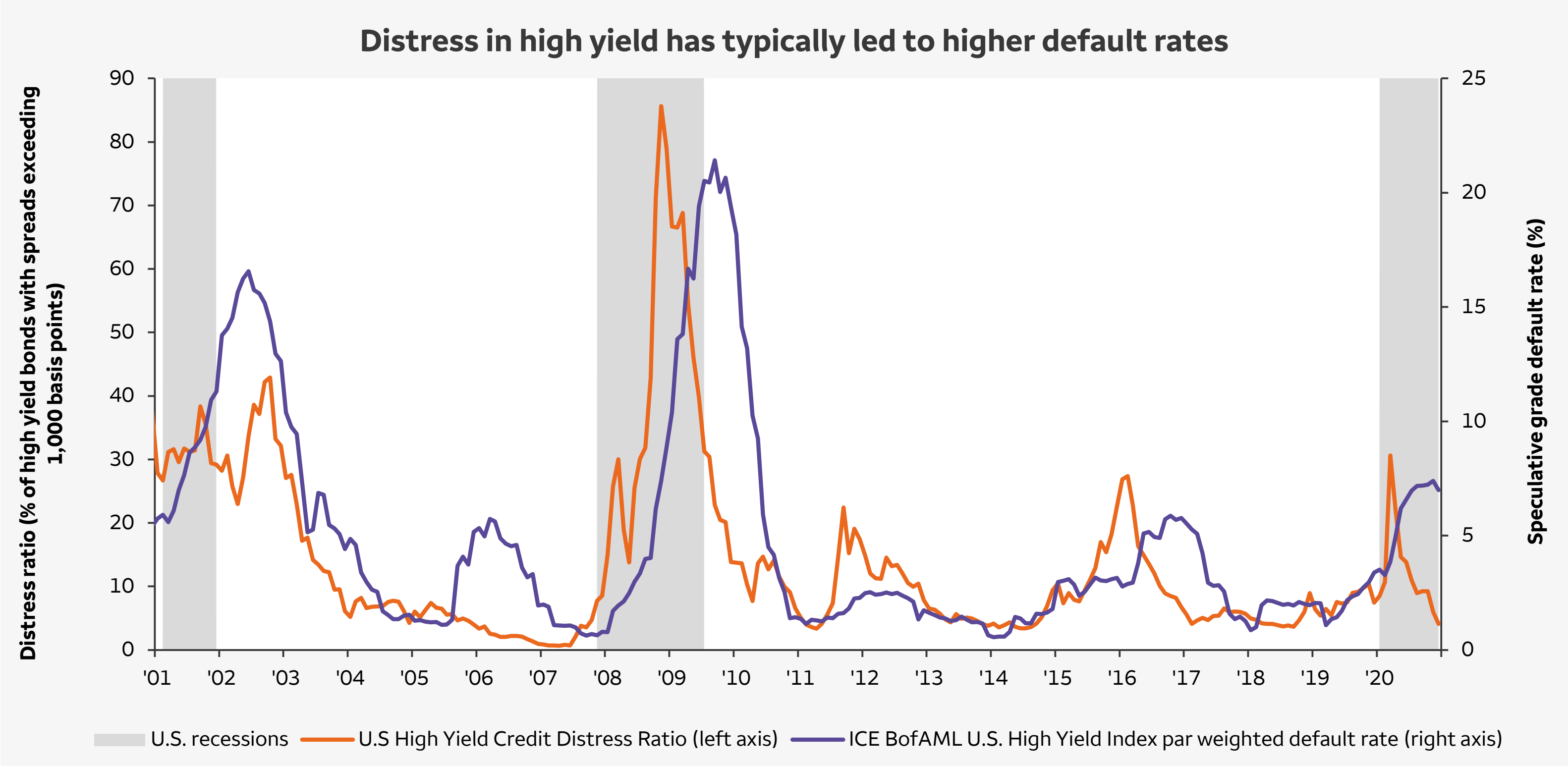


Sources: Bloomberg and Wells Fargo Investment Institute. Monthly data from December 1, 2018 to December 30, 2020. Deal values are based on values at announcement. M&A = merger and acquisition.

Key takeaways

- Global corporate deal volume rebounded strongly in the closing months of 2020. We anticipate a continuation of this trend, especially given the significant amount of cash held on corporate balance sheets.

Downgrades may create opportunities in credit

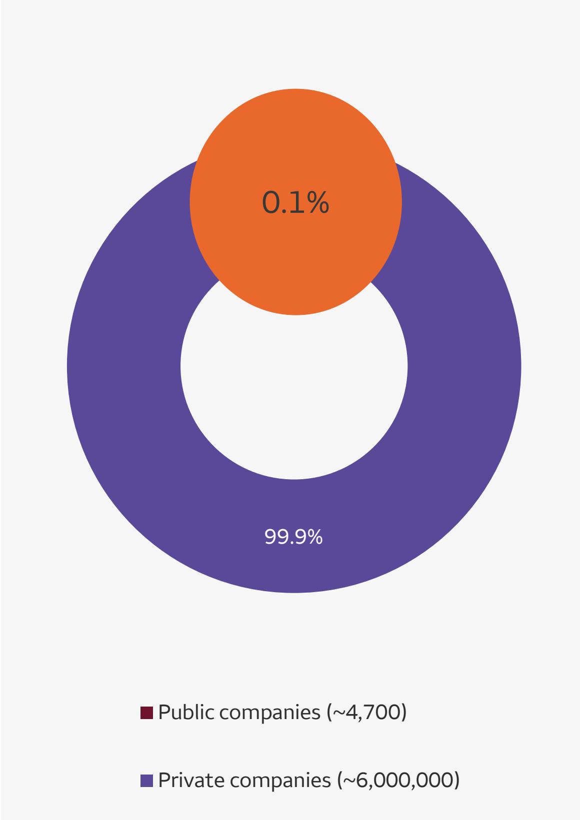


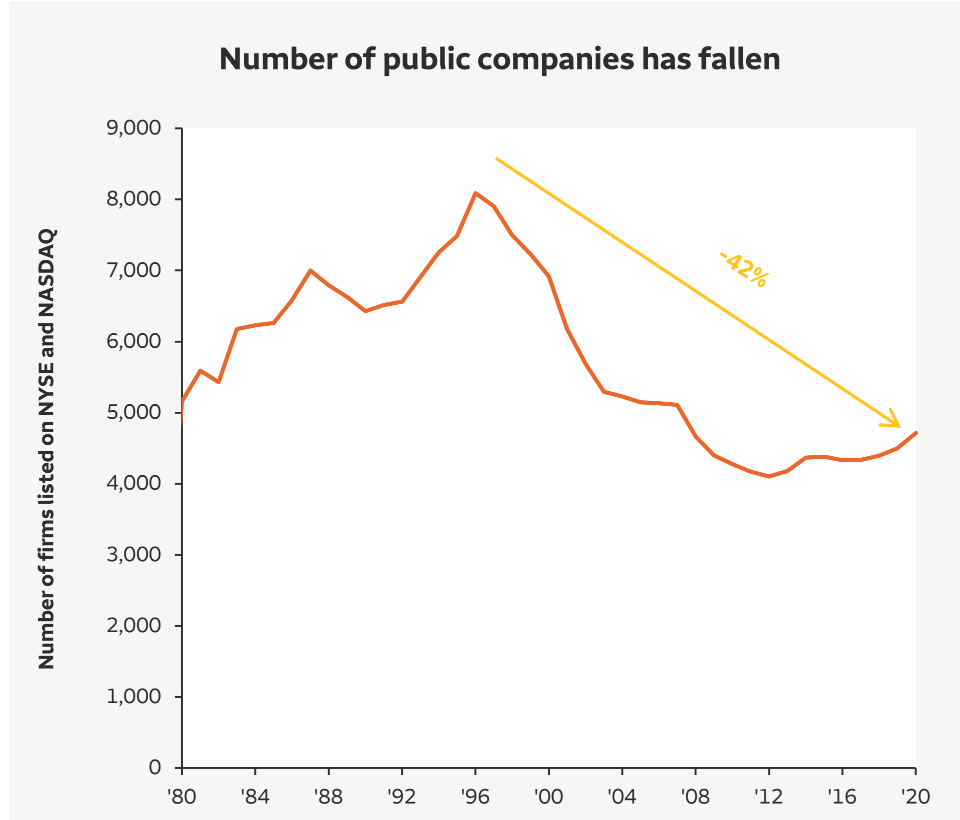
Source: ICE Bank of America. Monthly data from January 1, 2001 to December 31, 2020. An index is unmanaged and not available for direct investment. Please see the end of this presentation for notes associated with this chart and a description of the asset class risks. **Credit ratings are not intended to indicate the value, suitability, or merit of an investment. They are opinions of credit quality and, in some cases, the expected recovery in the event of default. Please see the end of this report for important information on credit ratings and index definitions.**

Key takeaways

- Net downgrades to non-investment grade and distress ratios (measured by the percent of high yield bonds with credit spreads over 10%) have eased since March.
- This has corresponded with a spike in high-yield default rates which may provide an opportunity in distressed debt.

Opportunities in private equity



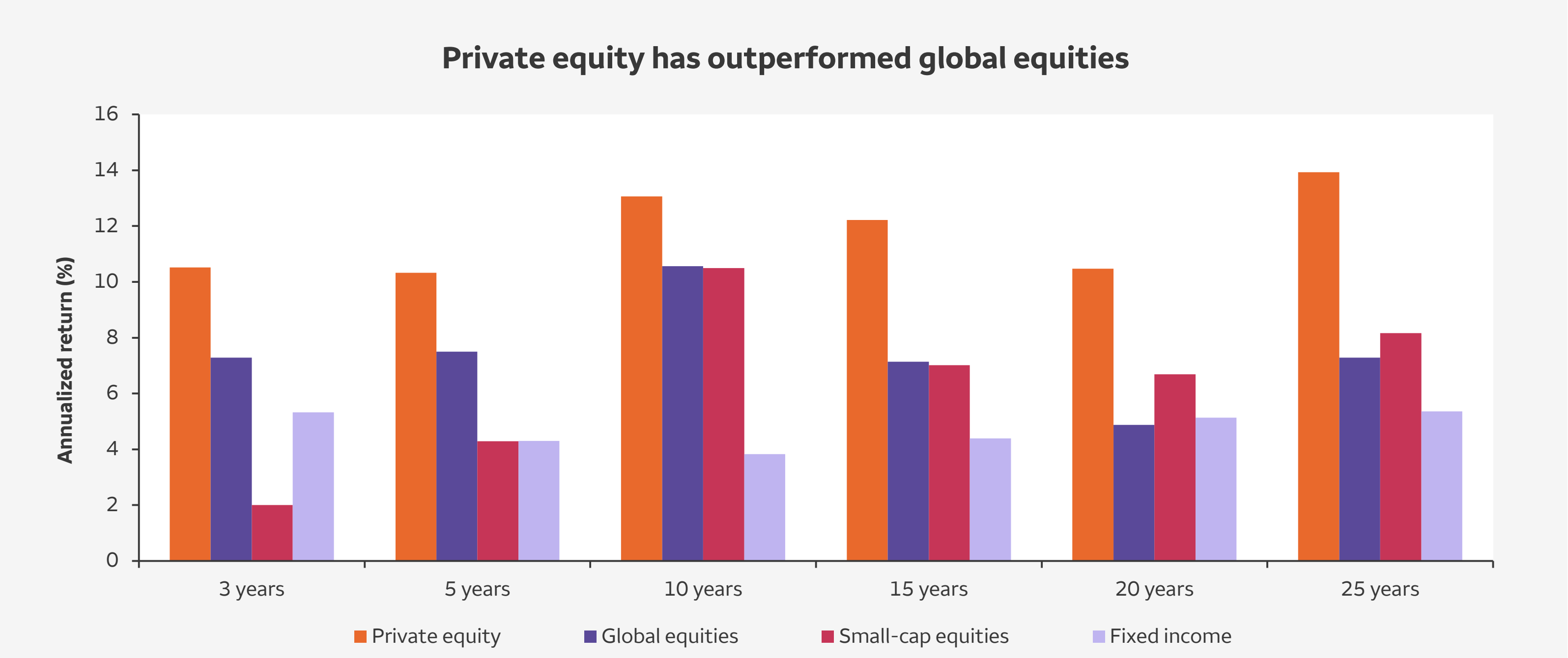


Sources: U.S. Census Bureau, World Federation of Exchanges, and Wells Fargo Investment Institute. Annual data from January 1, 1980 to October 31, 2020. NYSE = New York Stock Exchange. (~ = approximately). NASDAQ = National Association of Securities Dealers Automated Quotations.

Key takeaways

- The majority of companies remain private, which inherently offers private capital strategies a robust opportunity set.
- The delist rate since 2000 is due to an unusually high rate of acquisitions of publicly-listed firms.

Opportunities in private equity



Sources: © 2020 – Morningstar Direct, All Rights Reserved[1], and Wells Fargo Investment Institute, as of June 30, 2020. Private equity = Cambridge Associates Private Equity. (Cambridge Index) Global equities = MSCI World Index. Small-cap equities = Russell 2000 Index. Fixed income = Bloomberg Barclays U.S. Aggregate Bond Index. **Past performance is no guarantee of future results.** An index is unmanaged and not available for direct investment. Please see the end of the report for the definitions of the indexes.

The Cambridge Index uses a horizon calculation based on data compiled from more than 1,400 institutional-quality buyout, growth equity, private equity energy, and subordinated capital funds formed between 1986 and 2017. The funds included in the index report their performance voluntarily, and therefore, the index may reflect a bias towards funds with records of success. **More information on the limitations of utilizing this Index can be found at the end of this presentation**

Alternative investments, such as private capital funds, are not suitable for all investors and are only open to accredited or qualified investors within the meaning of the U.S. securities laws. They are speculative and involve a high degree of risk that is suitable only for those investors who have the financial sophistication and expertise to evaluate the merits and risks of an investment in a fund and for which the fund does not represent a complete investment program.

Key takeaways

- Private equity funds strive to deliver significant capital appreciation for investors over longer periods of time.
- Private equity funds have have outperformed global equities in various time frames.

Private debt can provide an illiquidity premium

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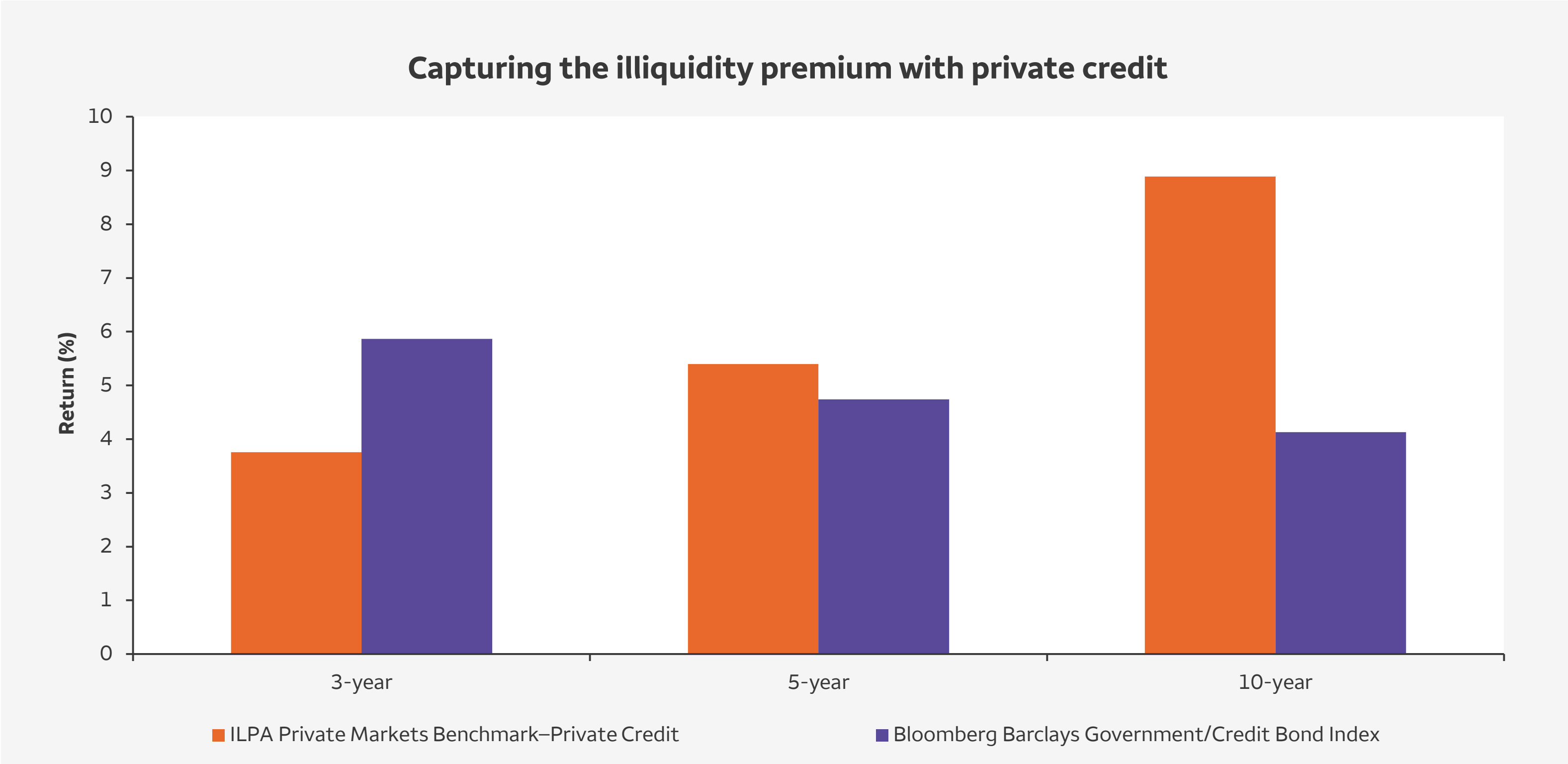


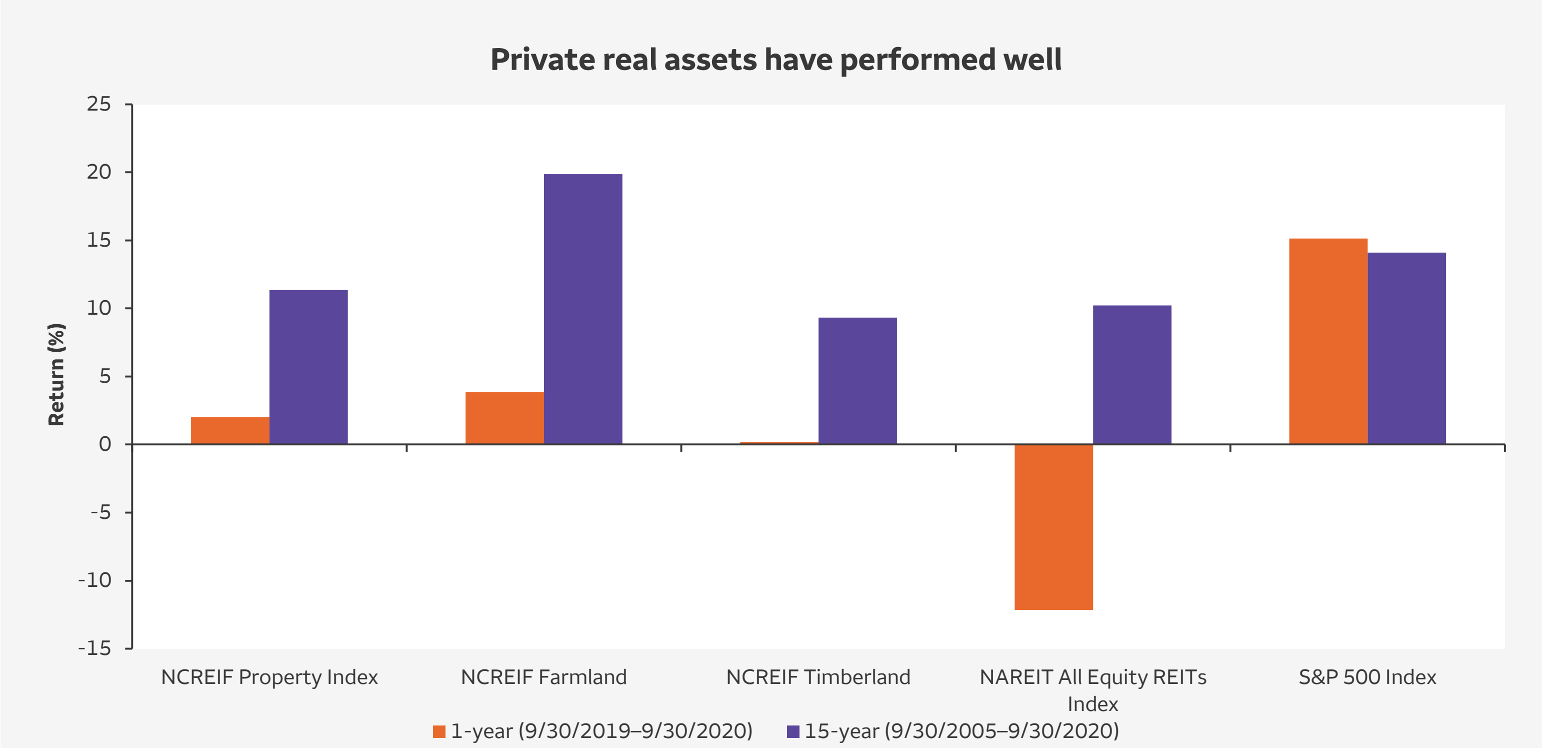
Sources: Bloomberg, Institutional Limited Partners Association (ILPA), and Wells Fargo Investment Institute, as of June 30, 2020. The ILPA Private Markets Benchmark – Private Credit Fund Index (ILPA) is a horizon calculation based on data complied from 269 private credit funds (credit opportunities and subordinated capital funds), including fully liquidated partnerships, formed between 1986 and 2017. Bloomberg Barclays U.S. Government/Credit Index is a broad-based index that measures the non-securitized component of the Barclays U.S. Aggregate Index. It includes investment-grade, U.S. dollar-denominated, fixed-rate Treasuries, government-related and corporate securities. Broad-based Indexes do not represent investment performance or the results of actual trading. Index returns reflect general market results, assume the reinvestment of dividends and other distributions, and do not reflect deduction for fees, expenses, or taxes applicable to an actual investment. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results. More information on the limitations of utilizing ILPA can be found at the end of this presentation.**

Key takeaways

- Though less liquid than public credit, private credit has historically provided an attractive premium, given the complexity of lending to entities that are unable to borrow from traditional capital market sources.

Alternative investments, such as private capital funds, are not suitable for all investors and are only open to accredited or qualified investors within the meaning of the U.S. securities laws. They are speculative and involve a high degree of risk that is suitable only for those investors who have the financial sophistication and expertise to evaluate the merits and risks of an investment in a fund and for which the fund does not represent a complete investment program.

Opportunities in private real assets



Sources: Bloomberg, National Council of Real Estate Investment Fiduciaries (NCREIF), and Wells Fargo Investment Institute, as of September 30, 2020. NCREIF Property Index is a composite total return for private commercial real estate properties held for investment purposes only. NCREIF Farmland Index is a composite return measure of investment performance of a large pool of individual farmland properties acquired in the private market for investment purposes only. NCREIF Timberland Index is a composite return measure of investment performance of a large pool of individual timber properties acquired in the private market for investment purposes only. NAREIT All Equity REIT Index is considered representative of the equity REIT market. Index returns do not represent investment performance or the results of actual trading. S&P 500 Index is a market capitalization-weighted index composed of 500 widely held common stocks that is generally considered representative of the US stock market. Index returns reflect general market results, assume the reinvestment of dividends and other distributions, and do not reflect deduction for fees, expenses or taxes applicable to an actual investment. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.**

Key takeaways

- Private real assets have performed well over a full market cycle, offering diversification via non-correlated return streams.
- Private Real Estate (a sub-strategy of private real assets) features various strategies with differing risk/return profiles. At this point in the cycle, we are more constructive on value-add and opportunistic strategies.

Currencies highlights

U.S. dollar

- After peaking early in 2020, the U.S. Dollar Index (DXY) extended its weakness in the second half (especially after the U.S. elections), mainly due to the strength of the euro.
- The weaker dollar has allowed some emerging market (EM) currencies to recover some losses in the second half of 2020, and vaccine-driven recovery hopes boosted gains late in the year.

Developed currencies

- The euro bottomed early in 2020 and recovered in the second half, driven by a more coordinated and effective European Union fiscal response to the COVID-19 crisis. It continued to gain from broader-based U.S. dollar weakness after the November elections and vaccine announcements.
- In contrast, the yen has remained firmly within its trading range in 2020, as the rally in equities and other risk assets has undercut the currency's perceived "safe-haven" appeal.

Emerging currencies

- Emerging market (EM) currencies stabilized after significant declines in early 2020, and a weaker dollar allowed them to recoup much of their early 2020 losses.
- Hopes of a global growth recovery and a slowdown in the de-globalization trend of recent years may give a boost to EM currencies, many of which fell sharply in 2020 — especially in the context of a continued dollar decline versus developed market currencies.

Currencies scorecard

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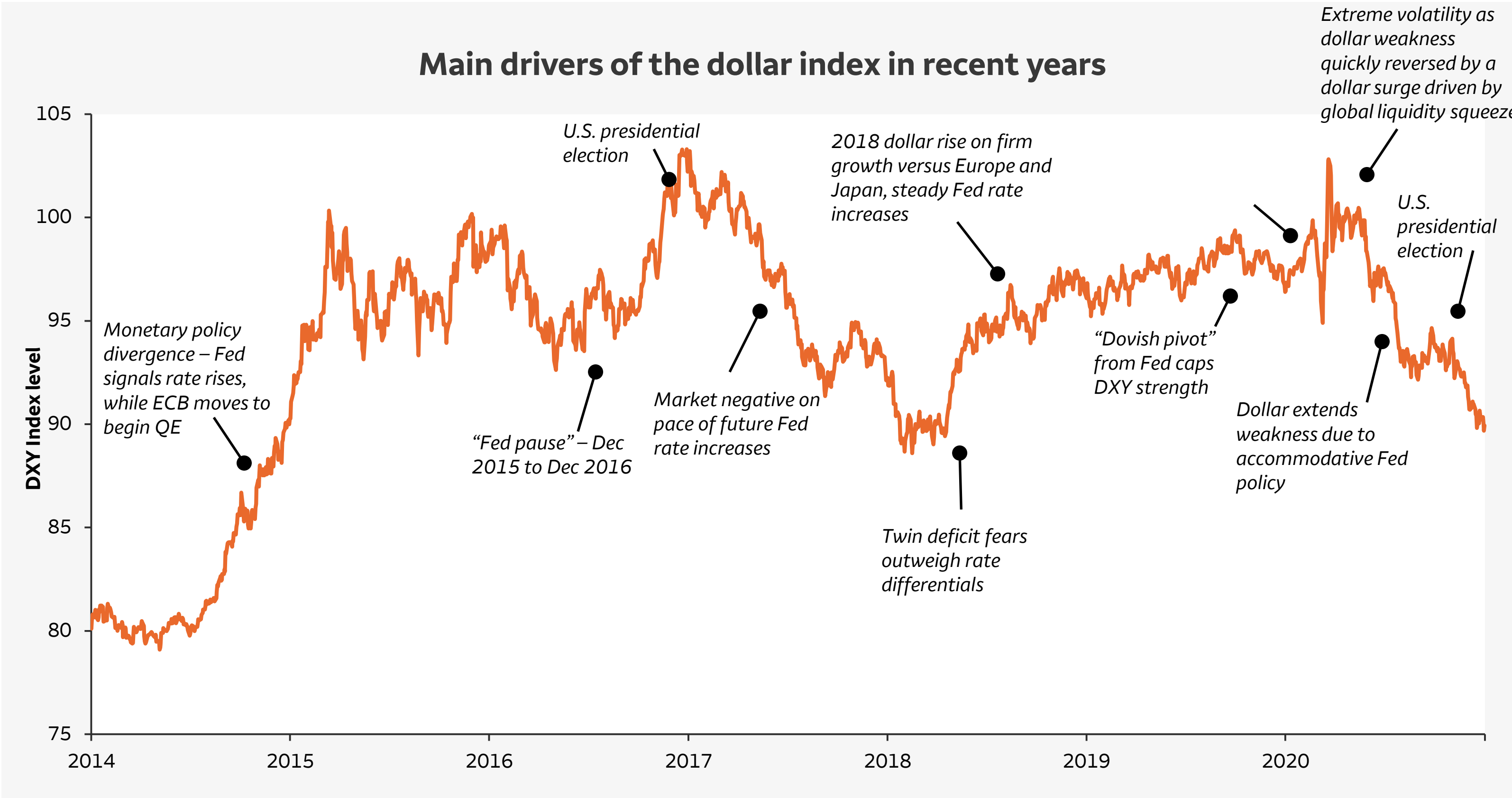
Metric	4Q20	QoQ change (%)	YoY change (%)
DXY Index	89.94	-4.21	-6.69
Euro (dollars per euro)	$1.22	4.22	8.94
Japanese yen (yen per dollar)	¥103.25	2.11	4.94
British pound sterling (dollar per pound)	$1.37	5.80	3.12
Chinese renminbi (yuan per dollar)	¥6.53	0.00	0.00

Sources: Bloomberg and Wells Fargo Investment Institute, as of December 31, 2020. QoQ = quarter over quarter. YoY = year over year. The DXY Index measures the value of the U.S. dollar relative to major developed market currencies, notably the euro, the Japanese yen, and the British pound. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.**

Key takeaways

- After peaking early in 2020, the U.S. Dollar Index (DXY) extended its weakness in the second half (especially after the U.S. elections), mainly due to the strength of the euro.
- EM currencies stabilized after significant declines in early 2020, and a weaker dollar allowed them to recoup much of their early 2020 losses.

Dollar extends weakness as euro rallies further



Sources: Bloomberg and Wells Fargo Investment Institute. Daily data from January 1, 2014 to December 31, 2020. The DXY Index measures the value of the U.S. dollar relative to major developed market currencies, notably the euro, the Japanese yen, and the British pound. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.**

Key takeaways

- The U.S. dollar index (DXY) should continue to drift lower driven by euro strength, but DXY weakness may be limited thanks to better dollar performance versus Japanese yen and British pound.
- If hopes of a vaccine-driven global recovery are fulfilled, then EM currency strength may contribute to broader-based dollar weakness.

Euro volatility picks up, yen stable

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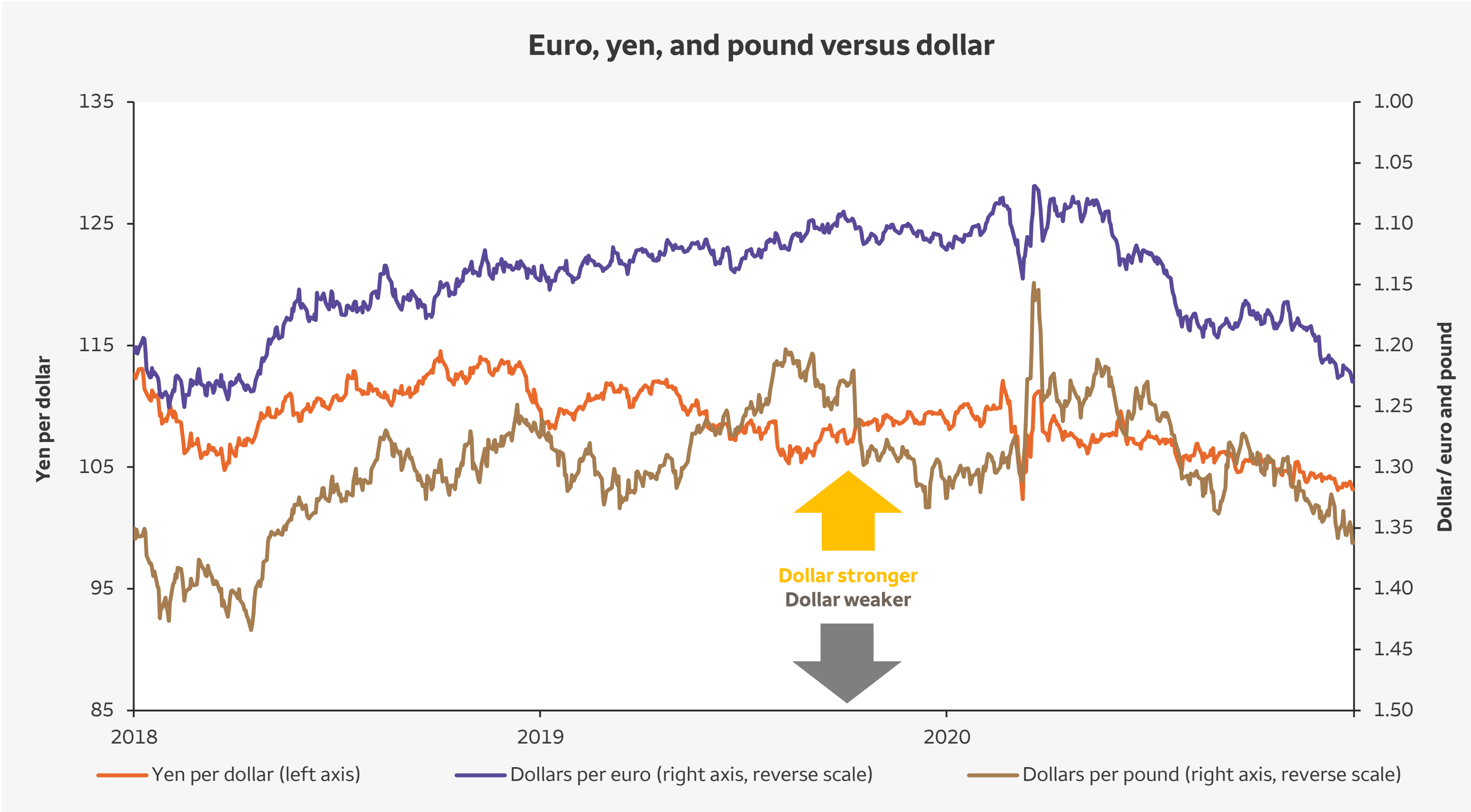
Economy
Equities
Fixed income
Real assets
Alternative investments
Currencies
Asset allocation
Risk considerations
Index definitions



Sources: Bloomberg and Wells Fargo Investment Institute. Daily data from January 1, 2018 to December 31, 2020.

Key takeaways

- The euro bottomed early in 2020, and we expect continued strength versus the U.S. dollar.
- In contrast, the yen remained firmly within its trading range in 2020, as the rally in equities and other risk assets undercut the currency's perceived "safe-haven" appeal. We expect the yen to remain in a similar range in 2021.

The euro and equity returns

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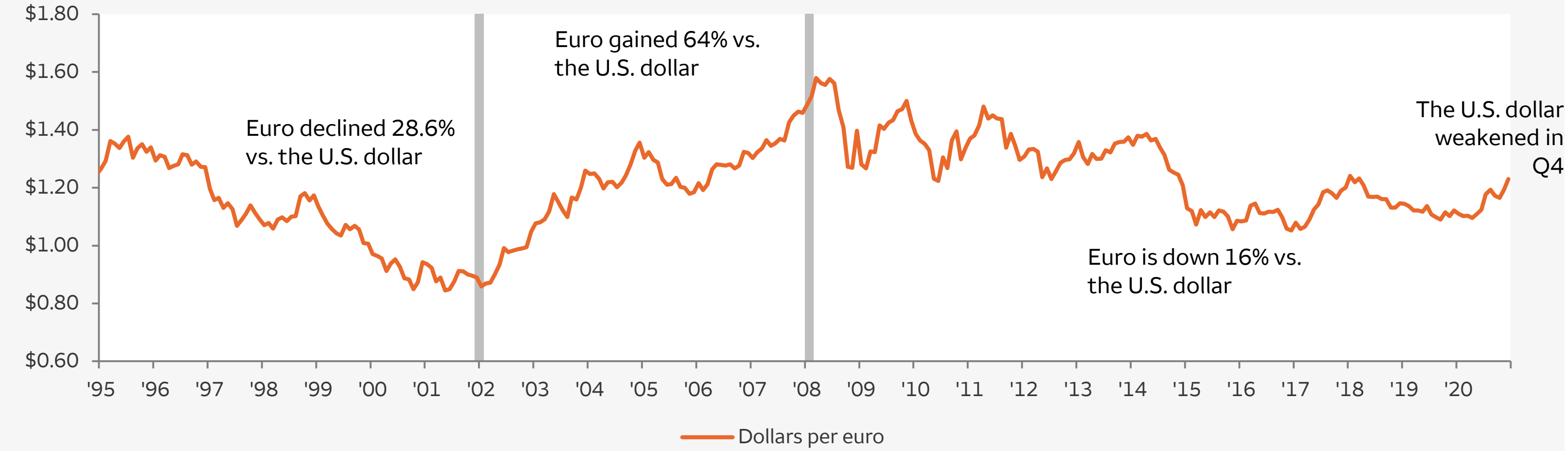
Currency movements affect equity performance



Annual equity returns for the S&P 500 Index and the MSCI EAFE Index

	'95	'96	'97	'98	'99	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20
S&P 500	38%	23%	33%	29%	21%	-9%	-12%	-22%	29%	11%	5%	16%	5%	-37%	26%	15%	2%	16%	32%	14%	1%	12%	22%	-4%	31%	18%
MSCI EAFE	12%	6%	2%	20%	27%	-14%	-21%	-16%	39%	21%	14%	27%	12%	-43%	32%	8%	-12%	18%	23%	-4%	0%	2%	26%	-13%	23%	8%

Sources: Bloomberg and Wells Fargo Investment Institute. Monthly data from January 1, 1995 to December 31, 2020. The S&P 500 Index is a market-capitalization-weighted index generally considered representative of the U.S. stock market. The MSCI EAFE Index is a free-float-adjusted market-capitalization-weighted index that is designed to measure the equity market performance of 21 developed markets, excluding the U.S. and Canada. Index returns do not represent investment performance or the results of actual trading. Index returns reflect general market results, assume the reinvestment of dividends and other distributions, and do not reflect deduction for fees, expenses or taxes applicable to an actual investment. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.**

Key takeaways

- International equities, priced in U.S. dollars, have tended to outperform U.S. equities when the euro is appreciating versus the dollar.
- Uncertainty surrounding the economic recovery in the eurozone and central bank policy could create more currency volatility in the coming year.

Impact of the U.S. dollar

Dollar strength or weakness impact on profits, manufacturing, and equity and fixed-income returns

	DOLLAR DEPRECIATION[1]	DOLLAR APPRECIATION[1]
Average quarterly change in corporate profits	1.30%	2.07%
Average quarterly change in U.S. manufacturing activity	-0.351	0.464
Average quarterly change in global manufacturing activity	0.179	-0.145
Average quarterly commodity total return	2.37%	-0.65%
Average quarterly global equity gross return (USD)	4.84%	0.11%
Average quarterly global equity gross return (LCL)	1.88%	1.08%
Average quarterly global fixed income total return (unhedged)	2.99%	-0.62%
Average quarterly global fixed income total return (hedged)	1.33%	1.11%

Sources: Bloomberg and Wells Fargo Investment Institute. Dollar represented by DXY Index (quarterly data from January 1, 1967 to December 31, 2020). Corporate profits are seasonally adjusted (quarterly data from January 1, 1967 to September 30, 2020). U.S. manufacturing represented by Institute for Supply Management Manufacturing PMI (quarterly data from January 1, 1967 to December 31, 2020). Global manufacturing represented by Global Markit Manufacturing PMI Index (quarterly data from June 1, 1998 to December 31, 2020). Commodities represented by Bloomberg Commodity Index (quarterly data from January 1, 1990 to December 31, 2020). Global equities represented by MSCI All Country World Index USD/Local Currency (quarterly data from March 1, 1988 to December 31, 2020). Global fixed income represented by Bloomberg Barclays Multiverse Index Hedged/Unhedged (quarterly data from March 1, 1999 to December 31, 2020). Index returns do not represent investment performance or the results of actual trading. Index returns reflect general market results, assume the reinvestment of dividends and other distributions, and do not reflect deduction for fees, expenses, or taxes applicable to an actual investment. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.** Please see the end of the report for the definitions of the indexes.

Key takeaways

- An appreciating U.S. dollar has tended to contribute to corporate profits and U.S. manufacturing activity.
- A falling dollar has typically enhanced global equity, commodity, and unhedged fixed-income performance.

1. Dollar depreciation periods are quarters with a declining value in the DXY Index. Dollar appreciation periods are quarters with a rising value in the DXY Index. The DXY Index measures the value of the U.S. dollar relative to major developed market currencies, notably the euro, the Japanese yen, and the British pound.

Emerging Market (EM) currencies mirror the U.S. dollar

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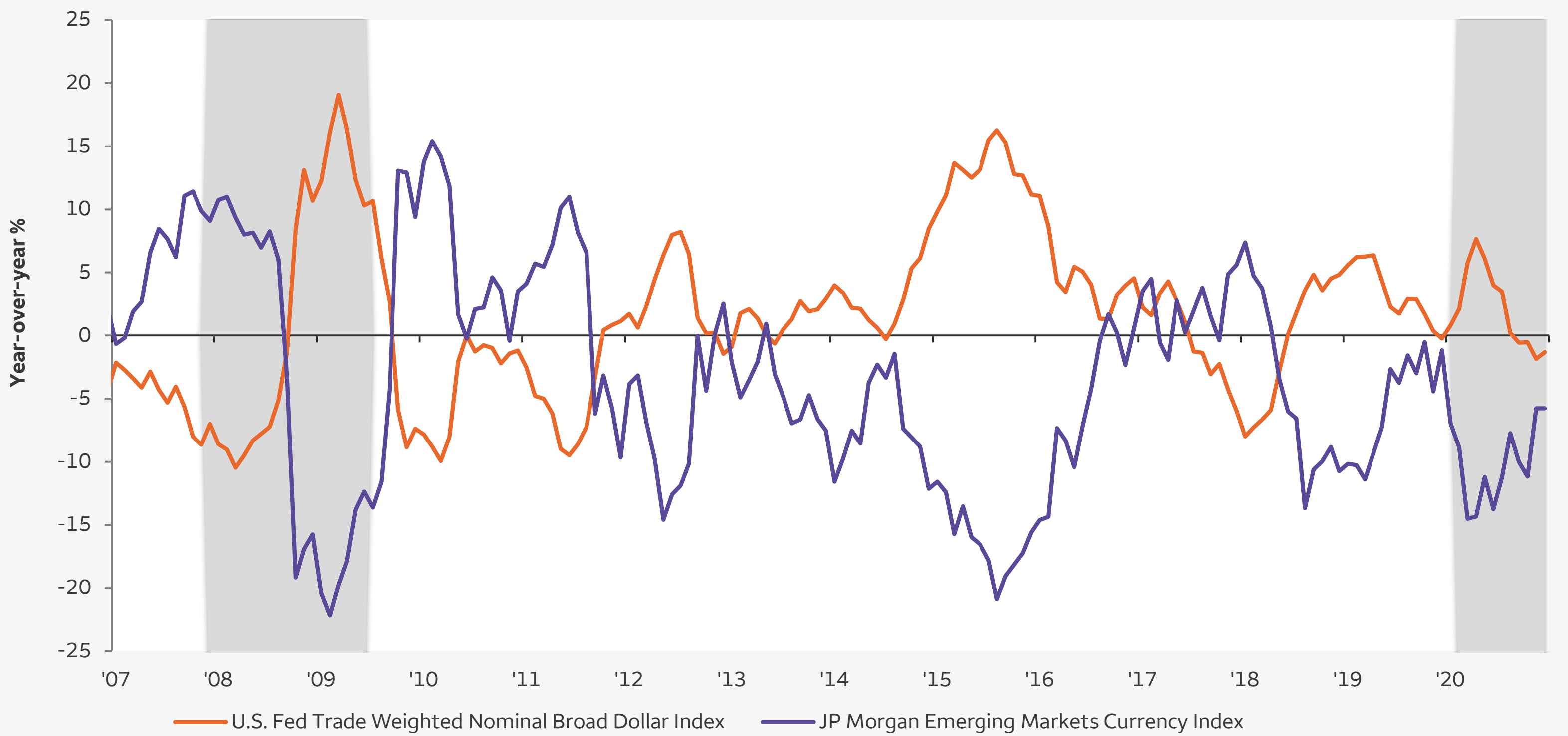
U.S. dollar composite index vs. emerging market currencies



Sources: Bloomberg, Federal Reserve, and Wells Fargo Investment Institute. Monthly data from January 1, 2007 to December 31, 2020. Shaded areas represent periods of a U.S. economic recession. The U.S. Fed Trade Weighted Nominal Broad Dollar Index is a weighted average of the foreign exchange value of the U.S. dollar against the currencies of a broad group of major U.S. trading partners. The J.P. Morgan Emerging Market Currency Index tracks the performance of emerging market currencies relative to the U.S. dollar. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.**

Key takeaways

- EM currencies stabilized after significant declines in early 2020, and a weaker dollar allowed them to recoup much of their early 2020 losses.
- Hopes of a global growth recovery and a slowdown in the de-globalization trend of recent years may give a boost to EM currencies, many of which fell sharply in 2020 — especially in the context of a continued dollar decline versus developed market currencies.

Asset allocation highlights

Background

- Historical performance may serve as a useful guide for investors, but markets frequently trade on factors outside of fundamental valuations for long periods of time.

Potential benefits of diversification and rebalancing

- Regularly rebalancing a portfolio can add value.
- Because each asset class has unique risk, return, and correlation characteristics, a diversified portfolio has the potential to provide more consistent returns with lower volatility.
- Attempting to reduce downside volatility is critical to long-term performance, as it can allow a portfolio to recover more quickly after a crisis event.
- It's important to recognize that the more a portfolio loses in a downturn, the longer it takes to recoup those losses.

Dangers of market timing

- Missing even a handful of days when the market achieves its best gains can dramatically reduce returns.
- Exiting the market after a bad day could be costly. The stock market's best days have often been preceded by the worst days.
- We do not advocate market timing, but we do believe that modest tactical shifts have the potential to take advantage of short-term investment opportunities or help mitigate short-term risks.

Asset allocation scorecard

	4Q20 return (%)	3Q20 return (%)	YoY return (%)
Moderate Income four-asset group without private capital	5.33	2.65	10.07
Moderate Growth and Income four-asset group w/o private capital	10.94	4.74	14.13
Moderate Growth four-asset group without private capital	15.64	6.25	16.00
60% MSCI ACWI/40% Bloomberg Barclays Multiverse	10.28	6.04	14.81
60% S&P 500 Index/40% Bloomberg Barclays U.S. Aggregate Bond Index	7.56	5.61	15.37

Sources: © 2020 – Morningstar Direct, All Rights Reserved[1], and Wells Fargo Investment Institute, as of December 31, 2020. YTD = year to date. YoY = year over year.
Performance results for the Moderate Income, Moderate Growth and Income, Moderate Growth, and 60/40 portfolios are hypothetical and for illustrative purposes only. Index returns do not represent investment performance or the results of actual trading. Index returns reflect general market results; assume the reinvestment of dividends and other distributions; and do not reflect deductions for fees, expenses, or taxes applicable to an actual investment. Unlike most asset-class Indexes, HFR Index returns are net of all fees. Because the HFR Indexes are calculated based on information that is voluntarily provided, actual returns may be higher or lower than those reported. An index is unmanaged and not available for direct investment. **Hypothetical and past performance does not guarantee future results.** Compositions of the Moderate Income, Moderate Growth and Income, Moderate Growth Four-Asset Group without PC, and 60/40 are provided at the end of the report.

Key takeaways

- A diversified portfolio has typically helped smooth out returns over time.
- Adding alternative investment strategies can help enhance return potential and mitigate risk over a traditional portfolio consisting of stocks and bonds.

Diversification strategies do not guarantee investment returns or eliminate the risk of loss.

Market conditions can determine the choice of strategy

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Catastrophe
Cash
U.S. IG fixed income
Commodities
Hedge funds
Managed futures

Income
U.S. IG bonds
U.S. high-yield fixed income
Int'l bonds (DM/EM)
Large/Mid cap equity
DM equity
Real estate

Volatility
U.S. IG fixed income
DM fixed income
Hedge funds
Managed futures

Liquidity
Cash
U.S. IG fixed income
DM fixed income
Large cap equity
DM equity

Inflation
TIPS or short-term fixed income
DM bonds
Domestic equity
Int'l equity (DM/EM)
Real estate
Commodities

Growth
U.S. high-yield fixed income
EM fixed income
U.S. equity
Int'l equity (DM/EM)
Real estate
Private equity

Source: Wells Fargo Investment Institute, as of December 31, 2020. IG = investment grade. DM = developed markets. EM = emerging markets. TIPS = treasury inflation-protected securities.

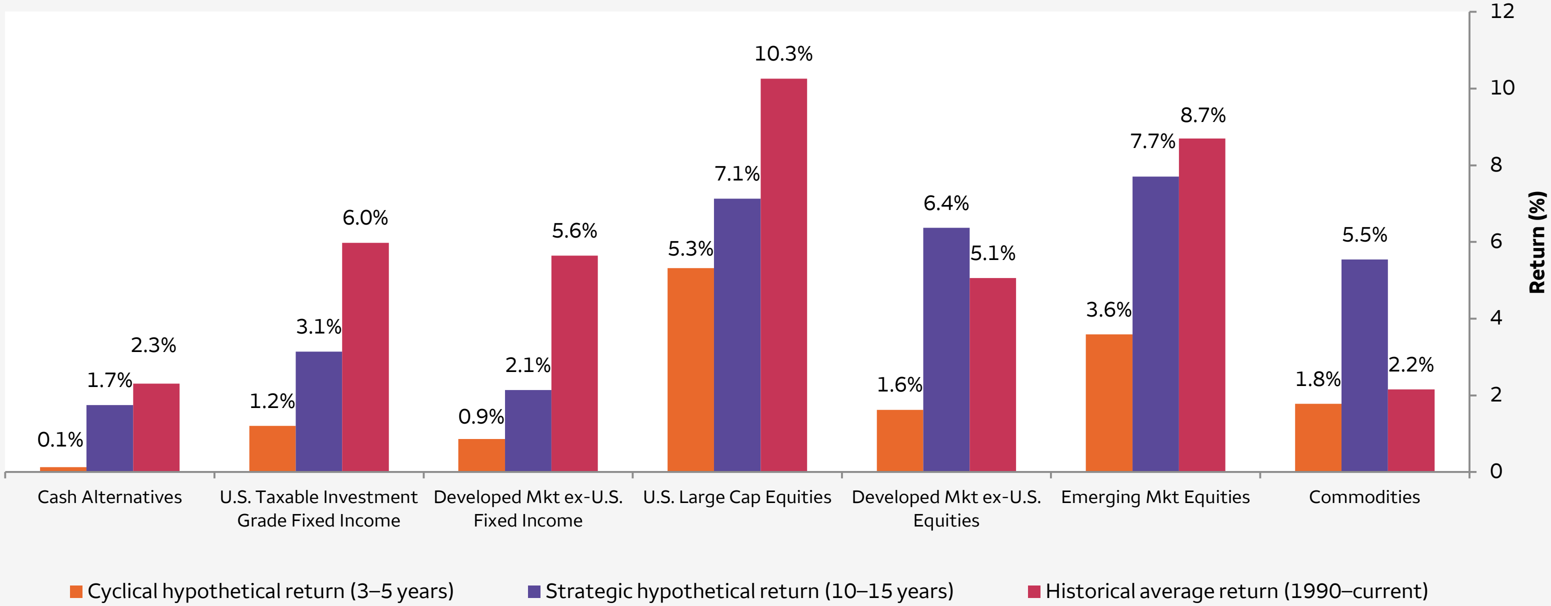
Key takeaways

- Certain asset classes can be appropriate under different circumstances or for different investment objectives.

Hedge Funds, Managed Futures, Real Estate, and Private Equity funds are not suitable for all investors and are only open to "accredited" or "qualified" investors within the meaning of U.S. securities laws. Equity, fixed income, foreign, cash alternatives, and alternative investments are materially different investments with materially different risk and reward characteristics. These risk and reward characteristics should be evaluated carefully before making any investment decision.

Expect lower returns for longer

We are forecasting generally lower strategic (10-15 years) returns than historical averages



Sources: Bloomberg, and Wells Fargo Investment Institute. Historical average returns are for data from January 1, 1991 to December 31, 2020. Cyclical return assumptions are as of January 4, 2020. Strategic return assumptions are as of July 16, 2020. Cyclical and strategic hypothetical returns are forward-looking geometric return estimates from Wells Fargo Investment Institute of how asset classes and combinations of classes may respond during various market environments. Hypothetical returns do not represent the returns that an investor should expect in any particular year. They are not designed to predict actual performance and may differ greatly from actual performance. There are no assurances that any estimates given will be achieved. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.** Indexes in order represented by Bloomberg Barclays U.S. Treasury Bill (1–3 Month) Index, Bloomberg Barclays U.S. Aggregate Bond Total Return Index, JP Morgan GBI Global Ex U.S. Total Return Index, S&P 500 Total Return Index, MSCI EAFE Total Return Index, MSCI Emerging Markets Total Return Index, Bloomberg Commodity Index. Please see the end of the report for the definitions of the indexes.

Key takeaways

- Investors may need to consider saving more or spending less in this environment to reach their financial goals.

Factors that may reduce gross investment return

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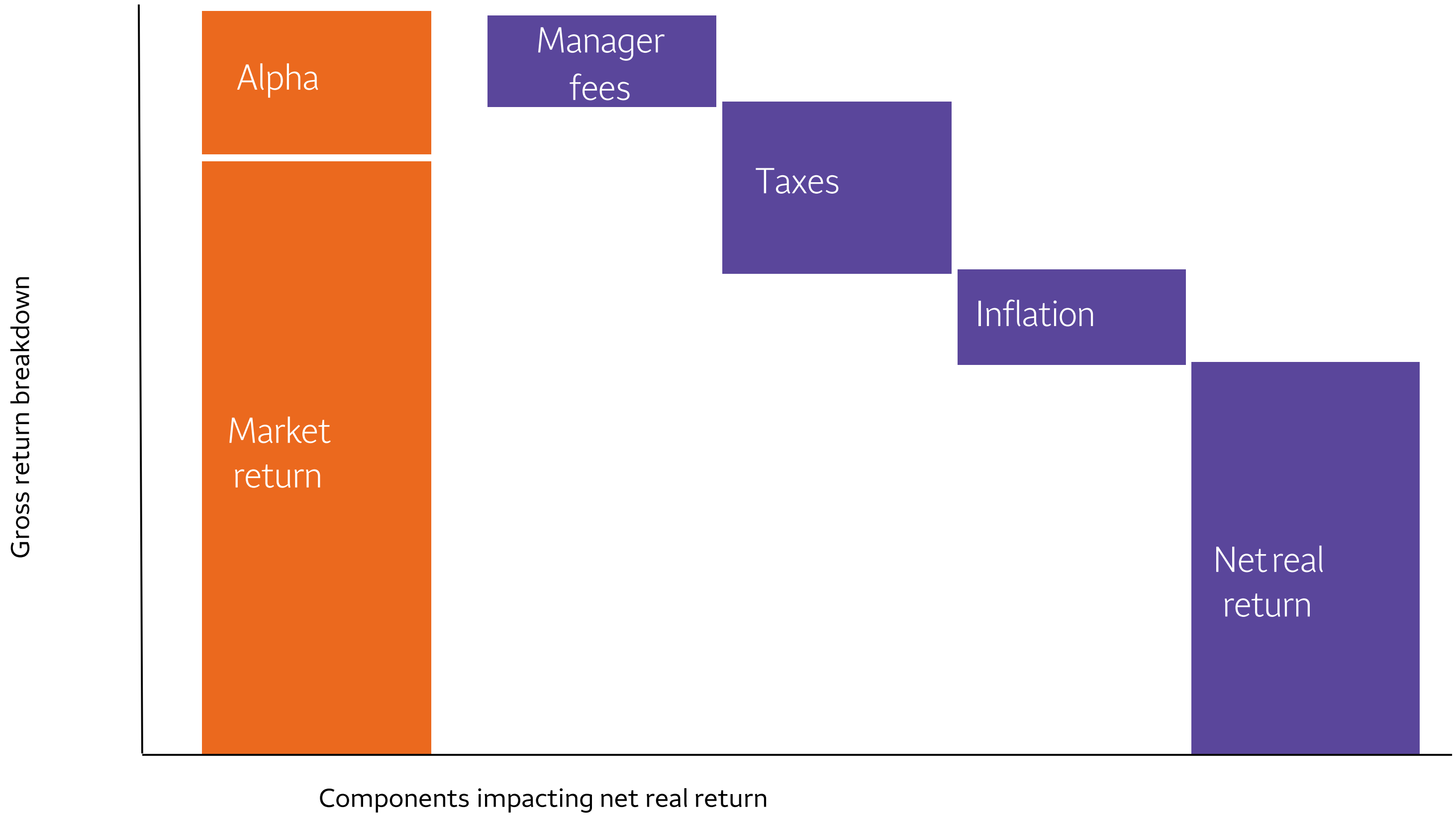
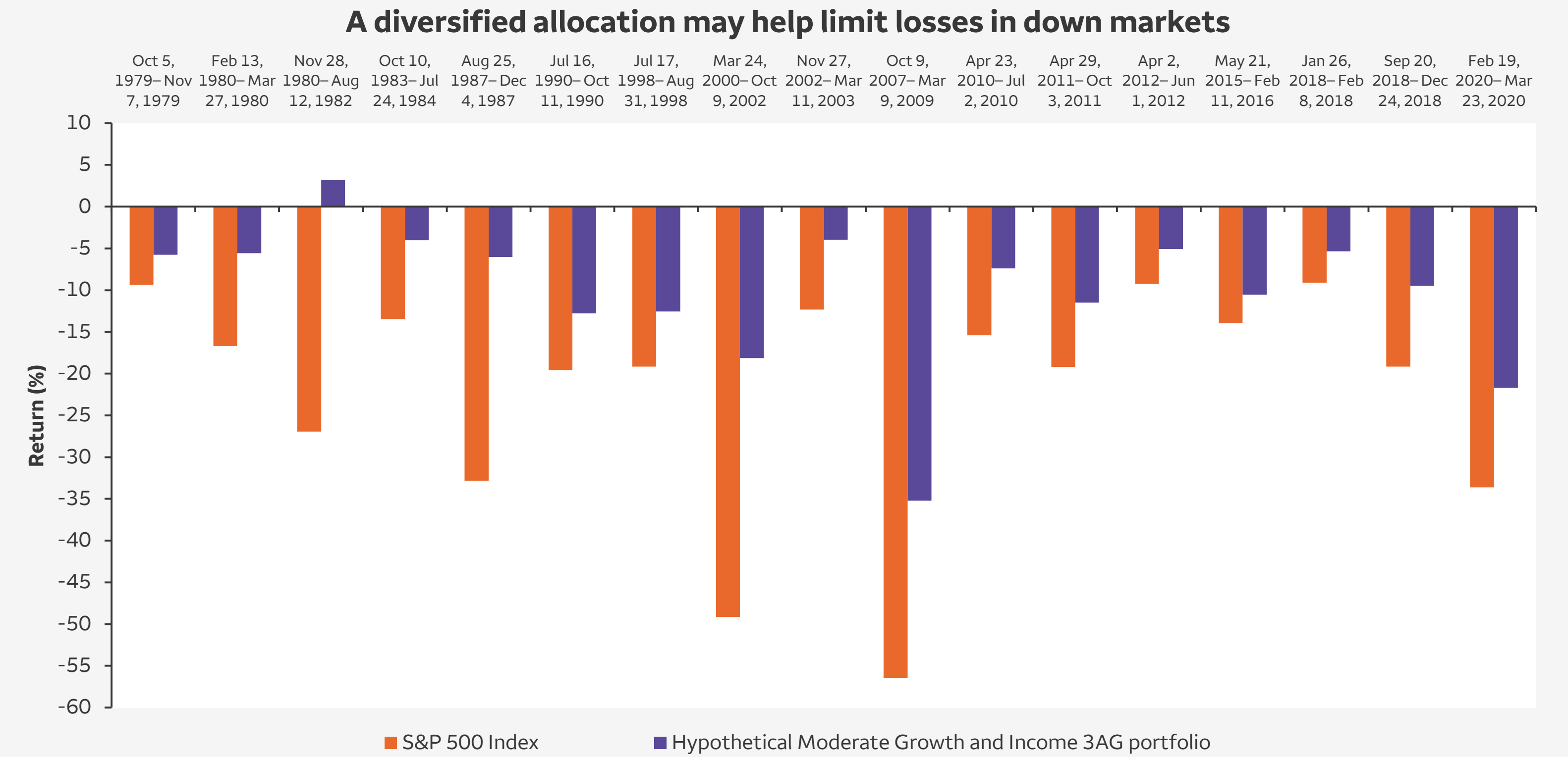


Source: Wells Fargo Investment Institute, as of December 31, 2020. For conceptual and illustrative purposes only. The size of the bars do not indicate the exact expected returns on a real or gross basis.

Key takeaways

- An investor's net real return may differ from the market return due to manager fees, taxes, and inflation.
- Investors in the highest tax brackets may be able to use tax efficient strategies to improve the net real return that is realized.

Diversification may reduce downside risk



Sources: © 2020 – Morningstar Direct, All Rights Reserved[1], and Wells Fargo Investment Institute. Data from October 5, 1979 to December 31, 2020. Performance results for the Moderate Growth and Income 3AG Portfolio is hypothetical and is presented for illustrative purposes only. Index returns do not represent investment performance or the results of actual trading. Index returns reflect general market results, assume the reinvestment of dividends and other distributions, and do not reflect deduction for fees, expenses or taxes applicable to an actual investment. An index is unmanaged and not available for direct investment. **Hypothetical and past performance does not guarantee future results.** Composition of the Portfolios provided at the end of the report.

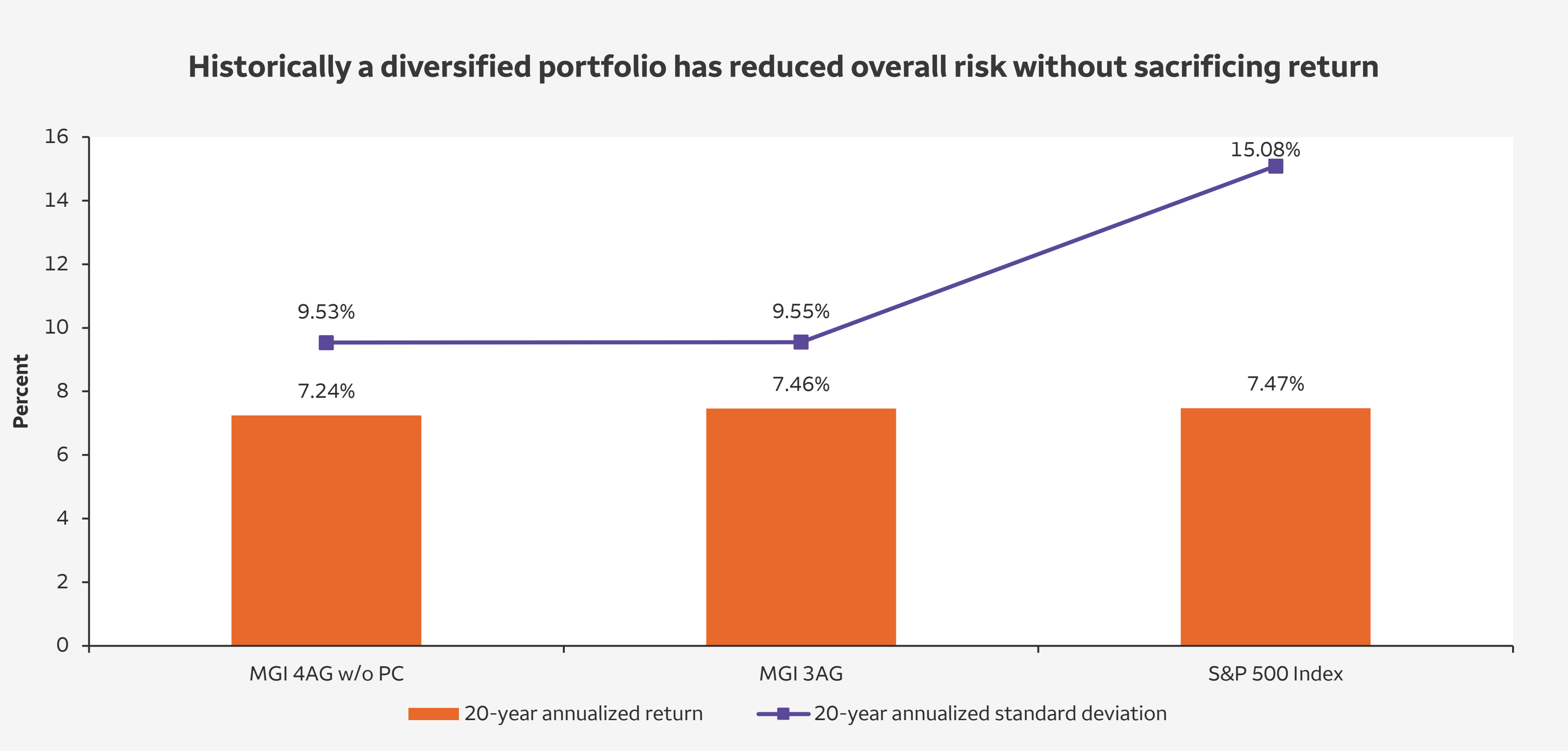
Note: Corrections are declines of 10% or more. Bear markets are declines of 20% or more.

Key takeaways

- A diversified allocation may not experience losses as sharp as an all-equity position during an equity correction or bear market.
- Attempting to reduce downside volatility is critical to long-term performance, as it can allow a portfolio to recover more quickly after a crisis event.

Diversification strategies do not guarantee investment returns or eliminate the risk of loss.

Diversification may improve risk-adjusted returns



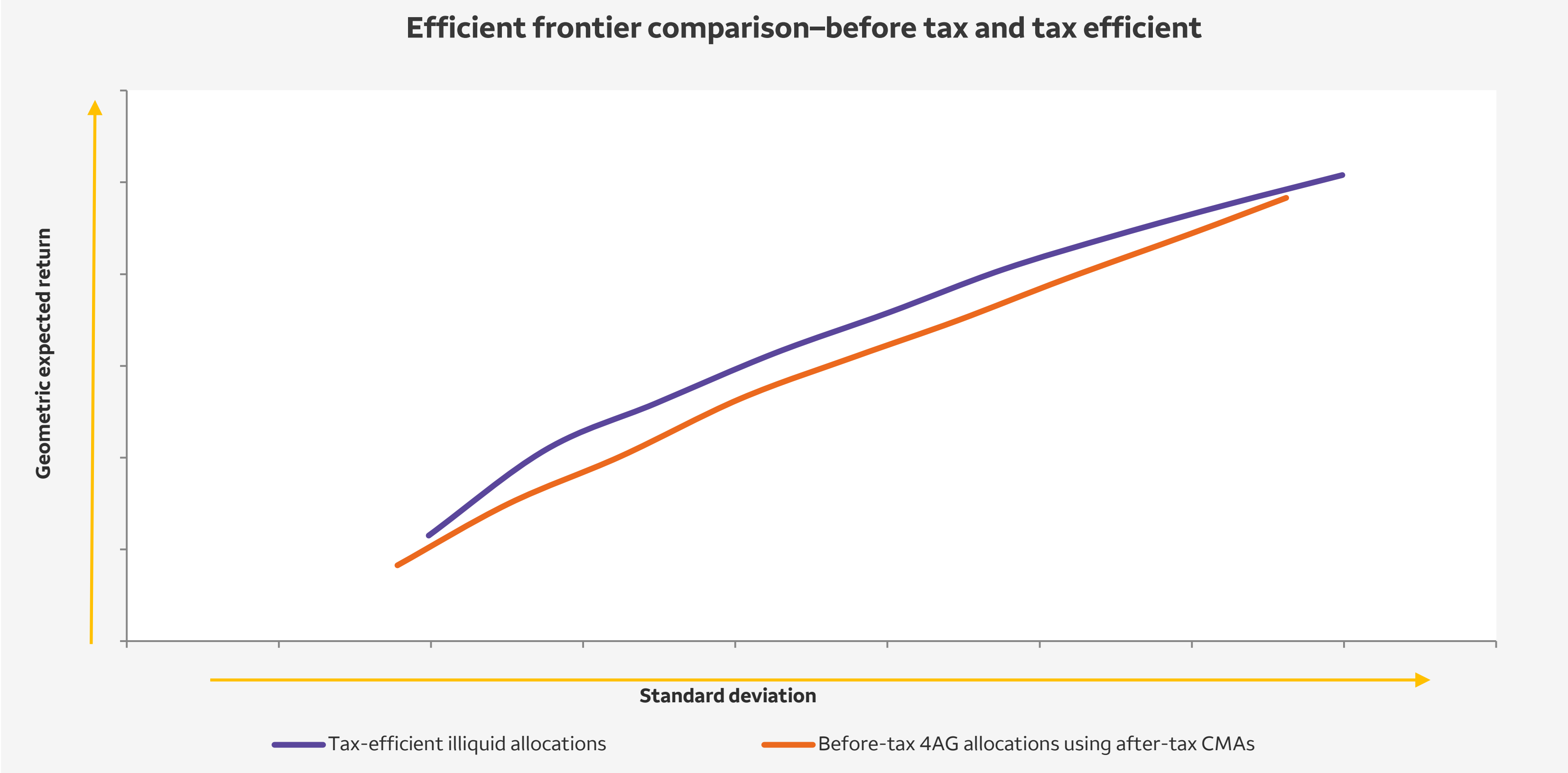
Sources: © 2020 – Morningstar Direct, All Rights Reserved[1], and Wells Fargo Investment Institute. Data from January 1, 2001 to December 31, 2020. Performance for the MGI 4AG w/o PC and the MGI 3AG Portfolios are hypothetical and for illustrative purposes only. Index returns do not represent investment performance or the results of actual trading. Index returns reflect general market results, assume the reinvestment of dividends and other distributions, and do not reflect deduction for fees, expenses or taxes applicable to an actual investment. Unlike most asset class Indexes, HFR Index returns are net of all fees. Because the HFR Indexes are calculated based on information that is voluntarily provided, actual returns may be lower than those reported. An index is unmanaged and not available for direct investment. **Hypothetical and past performance does not guarantee future results.** Standard deviation is a measure of the volatility of returns. The higher the standard deviation, the greater volatility has been. The risk associated with the representative asset classes and the definitions of the Indexes are provided at the end of the report. Diversification does not guarantee investment returns or eliminate risk of loss. Composition of the Portfolios provided at the end of the report.

Key takeaways

- Over time, a diversified portfolio can help mitigate volatility during times of market uncertainty and help smooth returns.
- Real assets and alternative investments add an element of diversification to a traditional portfolio comprised of stocks and bonds.

Diversification strategies do not guarantee investment returns or eliminate the risk of loss.

Taking taxes into consideration adds value



Source: Wells Fargo Investment Institute, as of December 31, 2020. Forecasts are not guaranteed and are subject to change. Strategic hypothetical returns are forward-looking geometric return estimates from Wells Fargo Investment Institute of how asset classes and combinations of classes may respond during various market environments. Hypothetical returns do not represent the returns that an investor should expect in any particular year. They are not designed to predict actual performance and may differ greatly from actual performance. There are no assurances that any estimates given will be achieved.

Key takeaways

- When developing tax-efficient portfolios, WFII has taken into consideration state, federal, and capital gains taxes.
- The tax-efficient allocations are made more tax efficient by swapping from taxable fixed income to tax exempt fixed income and reducing allocations to tax-inefficient asset classes like hedge funds and emerging market fixed income.

The greater the loss, the longer it takes to break even

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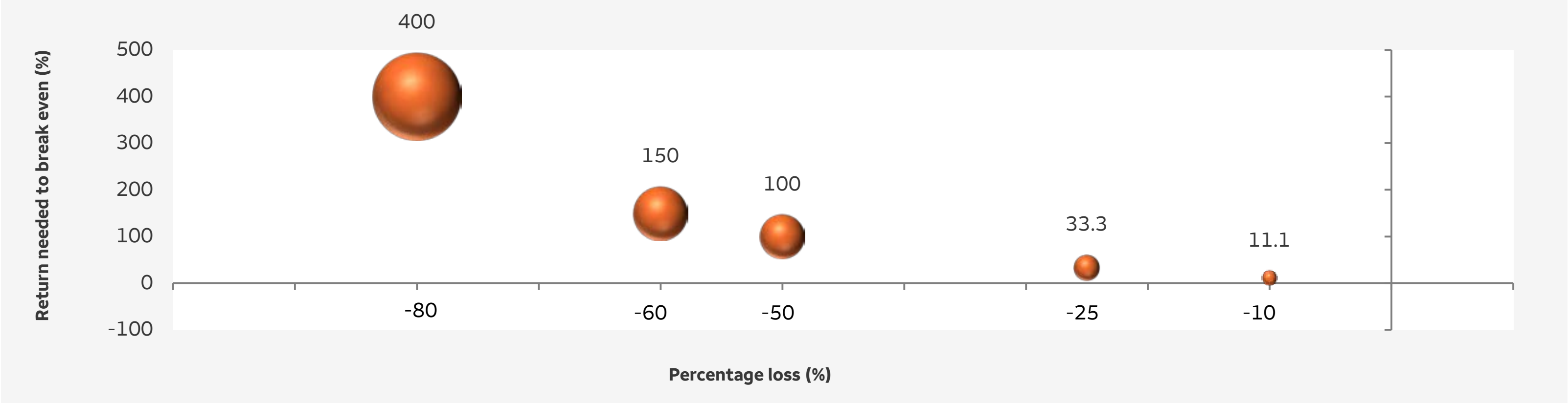
To break even in one period		Periods necessary to break even given a percentage return of		
If you lose	**You need ...**	**1%**	**5%**	**10%**
10%	11.1%	10.6	2.2	1.1
25%	33.3%	28.9	5.9	3.0
50%	100%	69.7	14.2	7.3
60%	150%	92.1	18.8	9.6
80%	400%	161.7	33.0	16.9



Source: Wells Fargo Investment Institute, as of December 31, 2020. There is no guarantee it will be possible to break even. All investing involves risk including the possible loss of principal. **Past performance is no guarantee of future results.**

Key takeaways

- It's important to recognize that the more a portfolio loses in a downturn, the longer it takes to recoup those losses.

Timing the market is risky

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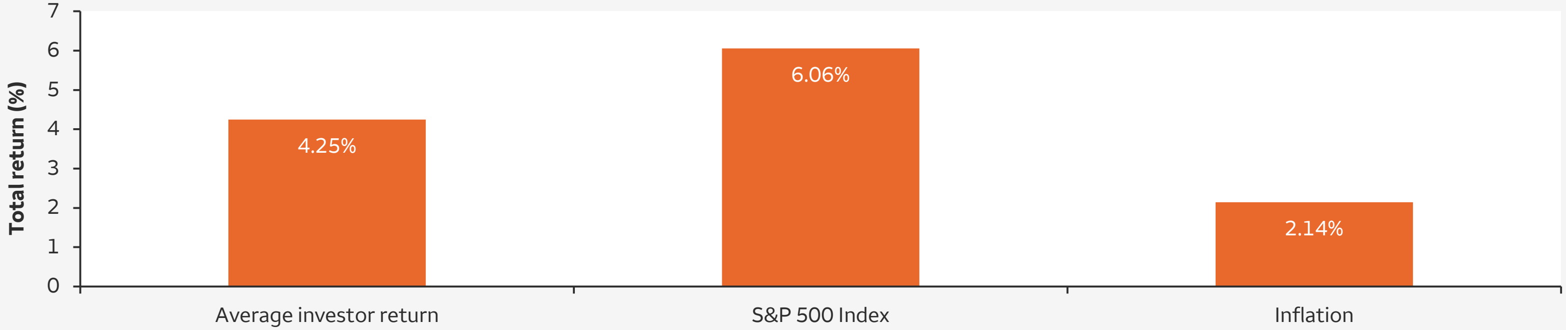
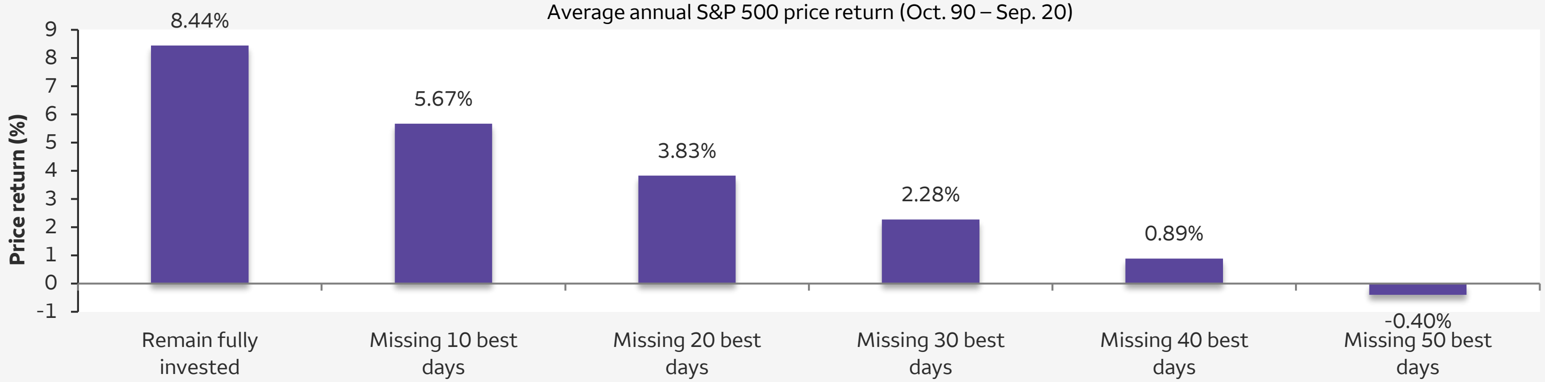
Average equity fund investor underperformed benchmark

(2000–2019)



Missing the best days in the market is costly

Average annual S&P 500 price return (Oct. 90 – Sep. 20)



Sources: Top chart: Dalbar, Inc., 20 years from 2000–2019; "Quantitative Analysis of Investor Behavior," 2020, DALBAR, Inc., www.dalbar.com. Bottom chart: Bloomberg and Wells Fargo Investment Institute. Data from October 1,1990 to December 31, 2020. Dalbar computed the average stock fund investor return by using industry cash flow reports from the Investment Company Institute. The average stock fund return figure represents the average return for all funds listed in Lipper's U.S. Diversified Equity fund classification model. All Dalbar returns were computed using the S&P 500 Index. The S&P 500 Index is a market capitalization weighted index composed of 500 stocks generally considered representative of the U.S. stock market. The fact that buy and hold has been a successful strategy in the past does not guarantee that it will continue to be successful in the future. The performance shown is not indicative of any particular investment. An index is unmanaged and not available for direct investment. A price index is not a total return index and does not include the reinvestment of dividends. Total returns assume reinvestment of dividends and capital gain distributions. **Past performance is not a guarantee of future results.**

Key takeaways

- Market timing is difficult. Investors who allow their emotions to get the best of them can suffer lower returns.
- We do not advocate market timing, but we do believe that modest tactical shifts have the potential to take advantage of short-term investment opportunities or help mitigate short-term risks.

The cost of market timing

Market downturns (1928 – current)

Drawdowns	Number of occurrences	Average Drawdown (%)	Average drawdown time (months)
-5% or more	318	-10.8	1.2
-10% or more	99	-19.5	3.3
-15% or more	45	-28.2	6.2
-20% or more	26	-35.6	9.6

Investing $1,000,000 in the S&P 500 Index

	Past 30 years	Past 20 years	Past 10 years
Remain fully invested	$11,378,107	$2,849,637	$2,990,499
Missing 10 best days	$5,229,091	$1,305,967	$1,645,887
% drop by missing 10 best days	**-54%**	**-54%**	**-45%**
Missing 50 best days	$885,385	$227,971	$549,934
% drop by missing 50 best days	**-92%**	**-92%**	**-82%**

Sources: Bloomberg, Ned Davis Research, and Wells Fargo Investment Institute. Market downturn analysis: data from January 3, 1928 to December 31, 2020. Past 30 years: data from October 1, 1990 to December 31, 2020. Past 20 years: data from October 1, 2000 to December 31, 2020. Past 10 years: data from October 1, 2010 to December 31, 2020. The S&P 500 Index is a market capitalization weighted index composed of 500 stocks generally considered representative of the U.S. stock market. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.** A price index is not a total return index and does not include the reinvestment of dividends.

Note: Corrections are declines of 10% or more. Bear markets are declines of 20% or more.

Key takeaways

- The majority of market drawdowns have been between a 5% and 10% decline, which tend to recover much quicker than more severe corrections.
- Over 20- and 30-year time periods, missing the best 10 days reduced potential investment amount by 50%. Missing the 50 best days resulted in an ending period balance that was below the original investment.

Behavioral biases could be costly

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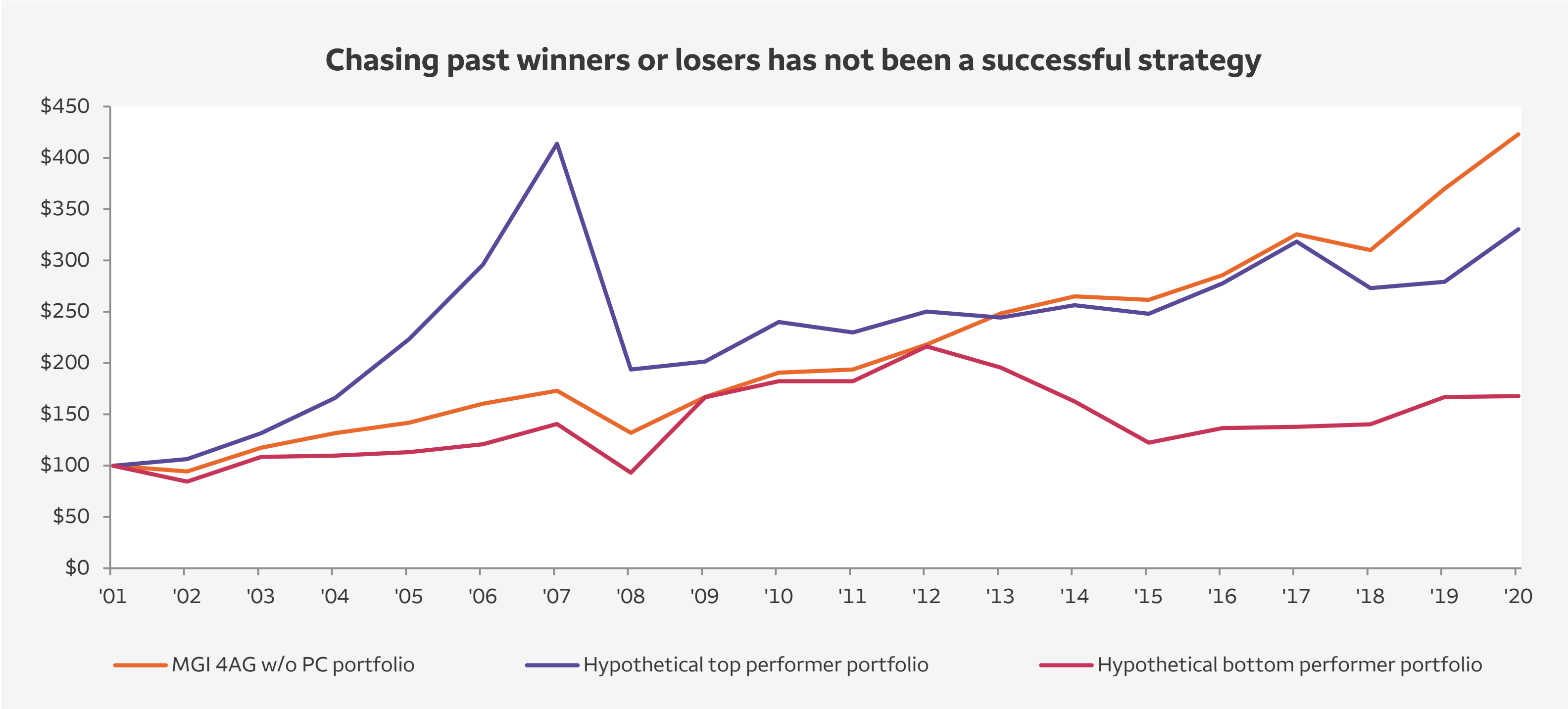


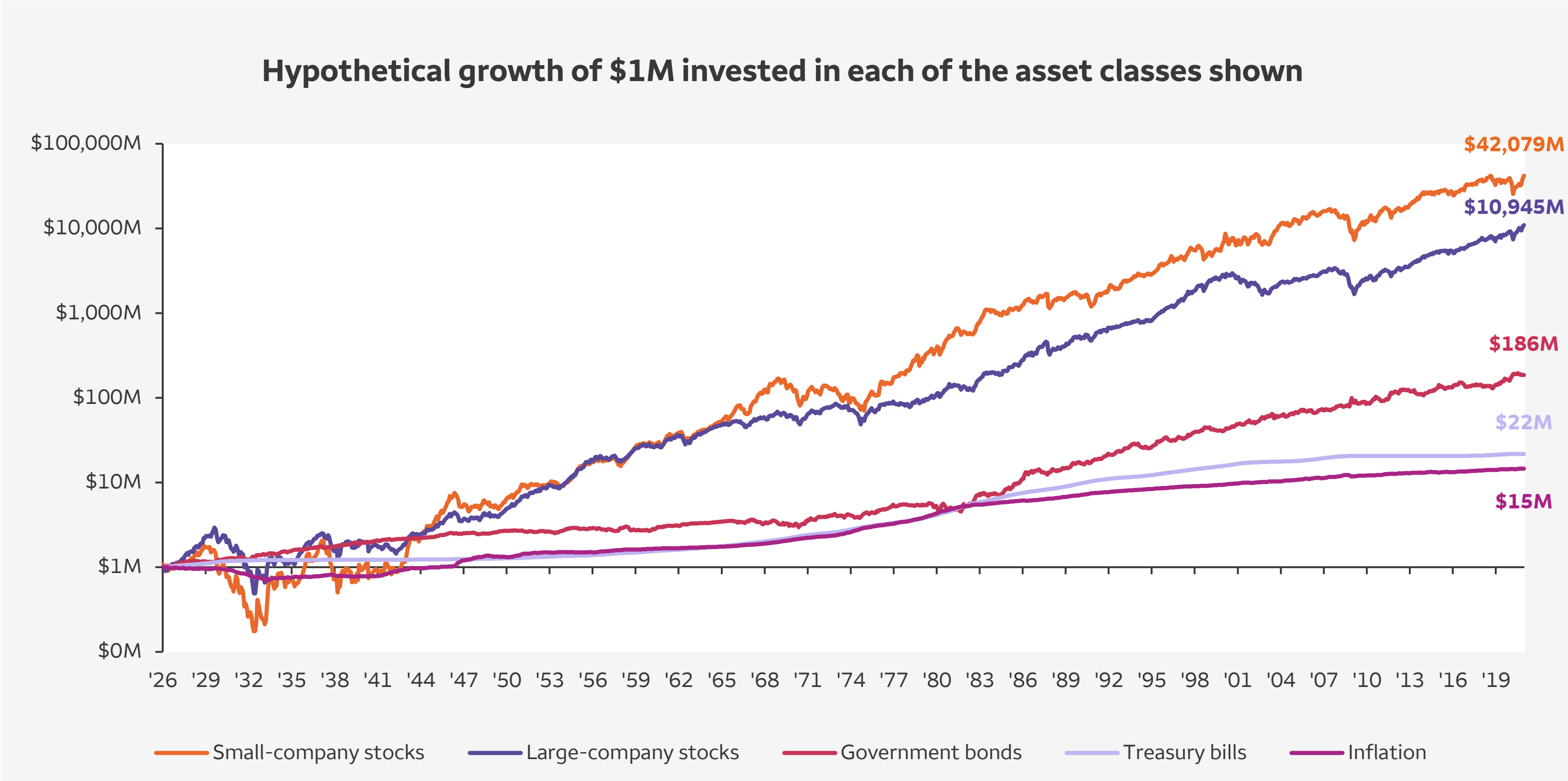
Sources: © 2020 – Morningstar Direct, All Rights Reserved[1], Wells Fargo Investment Institute. Annual data from December 31, 2001 to December 31, 2020. Indexed to 100 as of December 31, 2001. The top performer portfolio consists of the top performing asset class of the previous year invested 100% in the portfolio in the current year. The bottom performer portfolio consists of the bottom performing asset class of the previous year invested 100% in the portfolio in the current year. Performance results for the Moderate Growth & Income 4 Asset Group without Private Capital Portfolio and the top and bottom performer portfolios are hypothetical and do not represent an actual portfolio in existence now or during the time period shown. Index return information is provided for illustrative purposes only. Index returns do not represent investment performance or the results of actual trading. Index returns represent general market results, assume the reinvestment of dividends and other distributions and do not reflect deduction for fees, expenses or taxes applicable to an actual investment. **Hypothetical and past performance is no guarantee of future results.** Unlike most asset class Indexes, HFR Index returns reflect deduction for fees. Because the HFR Indexes are calculated based on information that is voluntarily provided actual returns may be lower than those reported. An index is unmanaged and not available for direct investment. Please see the end of the presentation for the composition of the MGI w/o PC Portfolio, the risks associated with the representative asset classes and the definitions of the Indexes.

Key takeaways

- Chasing the previous year's top-performing asset class or worst-performing investment is a strategy that some investors have tended to follow.
- We found that following the best-performing asset class (hot-hand fallacy) and worst-performing investment (gambler's fallacy) did not result in better performance than a diversified portfolio.

Diversification strategies do not guarantee investment returns or eliminate the risk of loss.

Asset values have grown over time



Sources: © 2020 – Morningstar Direct, All Rights Reserved[1], and Wells Fargo Investment Institute. Monthly data from January 1, 1926 to December 31, 2020. **Small-company stocks**: IA SBBI U.S. Small Stock Index: monthly data from January 1, 1926 to December 31, 2020. **Large-company stocks**: S&P 500 Index. **Government bonds**: IA SBBI U.S. Long-Term Government Bond Index. **Treasury bills**: IA SBBI U.S. 30-Day Treasury Bill Index. **Inflation**: IA SBBI U.S. Inflation Index. Index returns do not represent investment performance or the results of actual trading. Index returns reflect general market results, assume the reinvestment of dividends and other distributions, and do not reflect deduction for fees, expenses or taxes applicable to an actual investment. An index is unmanaged and not available for direct investment. **Hypothetical and past performance is no guarantee of future results.** Please see the end of the report for the definitions of the indexes.

Key takeaways

- Since 1926, riskier assets have outperformed less risky assets.
- U.S. Treasury bills (T-bills) have tracked inflation fairly closely over this time frame. More recently, T-bill yields have been lower than inflation.

Net flows of mutual funds (MFs) and exchange-traded funds (ETFs)

Billions ($)		YTD 2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Domestic equity	MF	-422	-302	-251	-236	-235	-170	-60	18	-159	-134
	ETF	133	112	125	181	146	53	128	–	–	–
Int'l equity	MF	-93	-19	34	71	23	111	69	84	1	5
	ETF	34	25	63	146	16	74	31	–	–	–
EM equity		-14	2	4	13	-4	-4	7	33	17	12
Taxable bond	MF	153	219	-2	233	84	-40	16	-13	256	130
	ETF	175	136	92	116	77	51	48	–	–	–
Government bond		21	29	6	2	11	12	6	-51	34	3
High-yield bond		2	-30	-34	-18	7	-36	-44	56	35	22
Tax-exempt bond	MF	28	92	4	26	23	15	28	-58	50	-12
	ETF	9	10	6	5	5	3	2	–	–	–
Money market		702	553	159	107	-30	21	6	15	–	-124

Sources: FactSet and Wells Fargo Investment Institute. Annual data from January 1, 2011 to November 30, 2020. Data compiled by Investment Company Institute (ICI). Data represents net new cash flows of mutual funds and net issuance of shares of ETFs. Numbers rounded to the nearest whole number. For number of funds in each category according to ICI please refer to https://www.ici.org/research/stats/trends/trends_11_20. For definitions and components of each category according to ICI please refer to https://www.ici.org/research/stats/iob_update/iob_definitions.

Key takeaways

- Investors have decreased their equity exposure but have increased their fixed-income and cash holdings.
- Investors have continued to reduce their net U.S. equity allocations this year. This has been an ongoing trend since 2015.

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Active versus passive heatmap

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Percentage of funds in respective Morningstar categories that outperformed their passive benchmark

Equity				
Morningstar category	Benchmark index	Core	Value	Growth
Large cap	Russell 1000 Index	35	42	57
Mid cap	Russell Mid Cap Index	59	65	63
Small cap	Russell 2000 Index	18	34	25
Developed market ex-U.S.	MSCI EAFE Index	47	48	64
Emerging market	MSCI Emerging Market Index	46		
Global large cap	MSCI All Country World Index	46		
Global small cap	MSCI All Country World Small Cap Index	37		

Fixed Income				
Morningstar category	U.S. investment grade	U.S. investment grade municipal	U.S. government	High yield
Benchmark index	Bloomberg Barclays Aggregate Bond Index	Bloomberg Barclays U.S. Municipal Index	Bloomberg Barclays Intermediate Treasury Index	Bloomberg Barclays U.S. Corporate High Yield Index
	81	80	63	40

Real Assets				
Morningstar category	Domestic REITs	Global REITs	MLPs	Commodities
Benchmark index	FTSE NAREIT All Equity REITs Index	FTSE EPRA/NAREIT Developed Index	Alerian MLP Index	Bloomberg Commodity Index
	30	22	10	77

Liquid Alternatives				
Morningstar category	Equity Hedge	Macro	Relative Value	Event Driven
Benchmark index	Wilshire Liquid Alternatives Equity Hedge Index	Wilshire Liquid Alternatives Macro Index	Wilshire Liquid Alternatives Relative Value Index	Wilshire Liquid Alternatives Event Driven Index
	58	61	63	61

Sources: © 2020 – Morningstar Direct, All Rights Reserved[1], and Wells Fargo Investment Institute, as of December 31, 2020. **Past performance is no guarantee of future results.** An index is unmanaged and not available for direct investment. Morningstar developed the Morningstar Categories. While the prospectus objective identifies a fund's investment goals based on the wording in the fund prospectus, the Morningstar Category identifies funds based on their actual investment styles as measured by their underlying portfolio holdings. Please see the end of the report for the definitions of the indexes and the Morningstar Categories. Shading represents a heat map, ranging from the highest value in the darkest green to the lowest value in the darkest red.

Key takeaways

- U.S. mid cap and large cap growth funds had high rates of success beating their indices, while U.S. small cap funds generally struggled to beat their indices due to the quarter's strong returns and the outperformance of the lowest market cap companies.
- Fixed Income funds had another solid quarter of beating their indices after having a historically difficult start to 2020.

Asset performance — correlations

	Cash	U.S. Taxable IG FI	Municipal FI	HY Taxable FI	DM ex-U.S. FI	EM FI	U.S. LC Equities	U.S. MC Equities	U.S. SC Equities	DM ex-U.S. Equities	EM Equities	Commodity	Hedge Funds
Cash	1.00	0.24	0.08	-0.19	0.00	0.00	-0.20	-0.13	-0.14	-0.12	-0.07	0.15	0.02
U.S. Taxable IG FI		1.00	0.78	-0.07	0.55	0.35	-0.36	-0.30	-0.37	-0.24	-0.19	-0.07	-0.24
Municipal FI			1.00	0.18	0.39	0.51	-0.13	-0.07	-0.20	-0.02	0.04	0.07	0.01
HY Taxable FI				1.00	-0.01	0.71	0.70	0.74	0.67	0.70	0.75	0.47	0.74
DM ex-U.S. FI					1.00	0.27	-0.10	-0.10	-0.14	0.16	0.10	0.14	-0.05
EM FI						1.00	0.49	0.54	0.44	0.53	0.63	0.40	0.57
U.S. LC Equities							1.00	0.96	0.92	0.88	0.78	0.35	0.83
U.S. MC Equities								1.00	0.95	0.89	0.81	0.45	0.90
U.S. SC Equities									1.00	0.84	0.76	0.34	0.84
DM ex-U.S. Equities										1.00	0.88	0.47	0.87
EM Equities											1.00	0.49	0.88
Commodity												1.00	0.57
Hedge Funds													1.00

Source: Wells Fargo Investment Institute. Data from January 1, 2000 to December 31, 2019. Correlation measures the degree to which asset classes move in sync; it does not measure the magnitude of that movement. There is no guarantee that future correlations between the Indexes will remain the same. Index returns do not represent investment performance or the results of actual trading. Index returns reflect general market results, assume the reinvestment of dividends and other distributions and do not reflect deduction for fees, expenses or taxes applicable to an actual investment. Unlike most asset class Indexes, HFR Index returns are net of all fees. Because the HFR Indexes are calculated based on information that is voluntarily provided, actual returns may be lower than those reported. An index is unmanaged and not available for direct investment. Index correlations represent past performance. **Past performance is no guarantee of future results.**

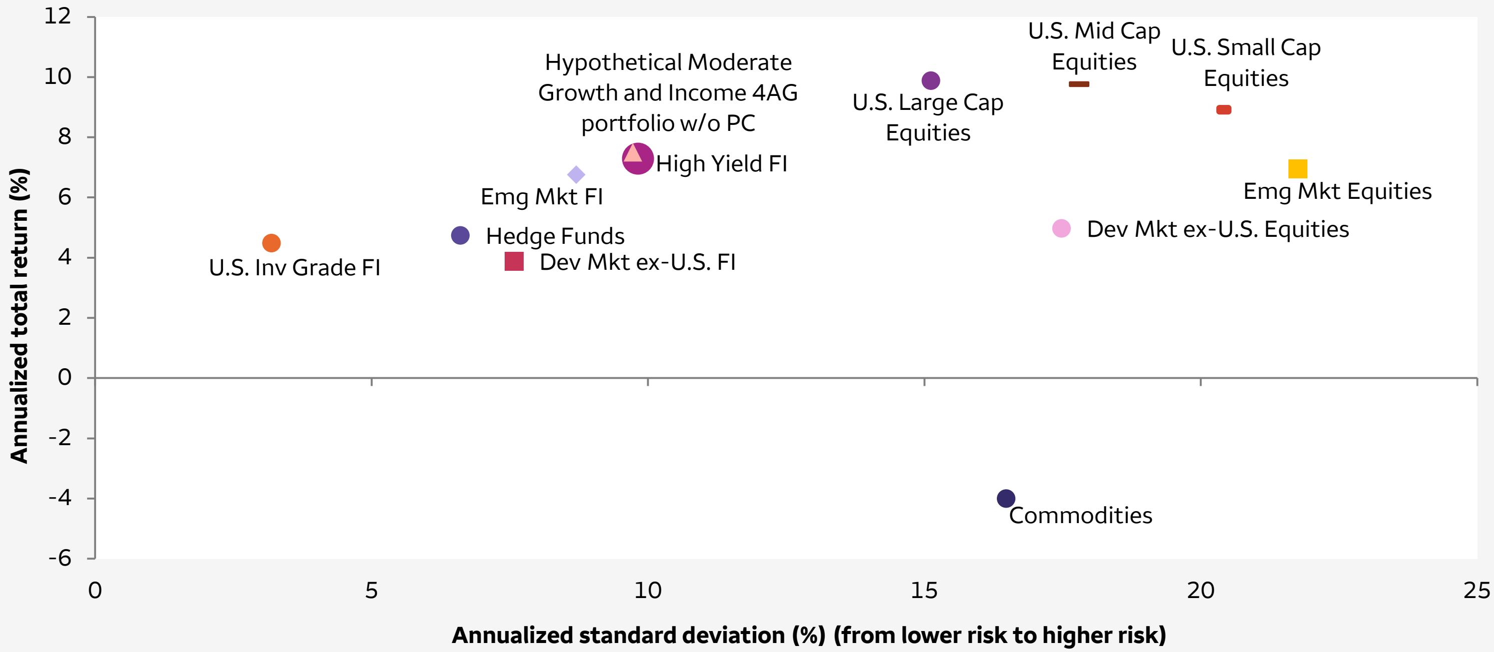
Key takeaways

- Correlations play an important role in portfolio diversification. In addition to risk and return, correlations are primary components of portfolio construction.

Indexes in order represented by Bloomberg Barclays U.S. Treasury Bill 1(–3 Month) Index, Bloomberg Barclays U.S. Aggregate Bond Index, Bloomberg Barclays U.S. Municipal Index, Bloomberg Barclays U.S. Corporate High Yield Bond Index, Bloomberg Barclays High Yield Muni Index, JPM GBI Global Ex U.S. Index, JPM EMBI Global Index, S&P 500 Index, Russell Midcap Index, Russell 2000 Index,, MSCI EAFE Index, MSCI EM Index, FTSE EPRA/NAREIT Developed Index, Bloomberg Commodity Index, HFRI Fund Weighted Index. IG = investment grade. FI = fixed income. LC = large cap. MC = mid cap. SC = small cap. HY = high yield. DM = developed market. EM = emerging market. Please see the end of the report for the definitions of the indexes.

Finding balance between risk and reward

Performance versus risk: 15 years
(January 2006–December 2020)



Sources: © 2020 – Morningstar Direct, All Rights Reserved[1], and Wells Fargo Investment Institute. Data from January 1, 2006 to December 31, 2020. Performance results for the MGI 4AG w/o PC Portfolio is hypothetical and is for illustrative purposes only. Index returns do not represent investment performance or the results of actual trading. Index returns reflect general market results, assume the reinvestment of dividends and other distributions, and do not reflect deduction for fees, expenses or taxes applicable to an actual investment. Unlike most asset class Indexes, HFR Index returns are net of all fees. Because the HFR Indexes are calculated based on information that is voluntarily provided actual returns may be lower than those reported. An index is unmanaged and not available for direct investment. **Hypothetical and past performance is no guarantee of future results**. Standard deviation is a measure of the volatility of returns. The higher the standard deviation, the greater volatility has been. Composition of the MGI 4AG w/o PC provided at the end of the report.

Key takeaways

- A diversified portfolio may strike a good balance between risk and return.

Diversification strategies do not guarantee investment returns or eliminate the risk of loss. Indexes represented: U.S. Investment Grade FI = Bloomberg Barclays U.S. Aggregate Bond Index. Hedge Funds = HFRI Fund Weighted Index. Emerging Market FI = JP Morgan EMBI Global Index. High Yield FI = Bloomberg Barclays U.S. Corporate HY Bond Index. U.S. Mid Cap Equities = Russell Midcap Index. U.S. Small Cap Equities = Russell 2000 Index. Developed Market Ex-U.S. FI = JP Morgan GBI Global Ex U.S. Index. U.S. Large Cap Equities = S&P 500 Index. Developed Market Ex-U.S. Equities = MSCI EAFE Index. Emerging Market Equities = MSCI Emerging Markets Index. Public Real Estate = FTSE EPRA/ NAREIT Developed REITs Index. Commodities = Bloomberg Commodity Index. Please see the end of the report for the definitions of the indexes.

Broadly speaking…

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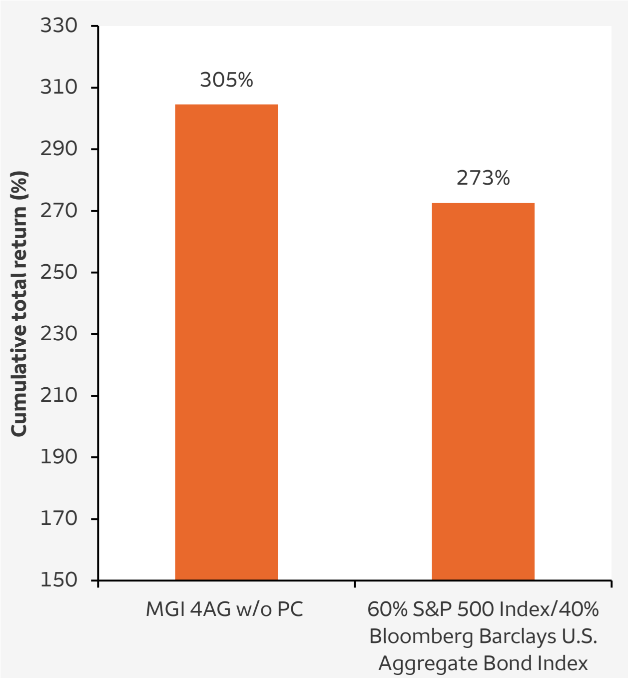
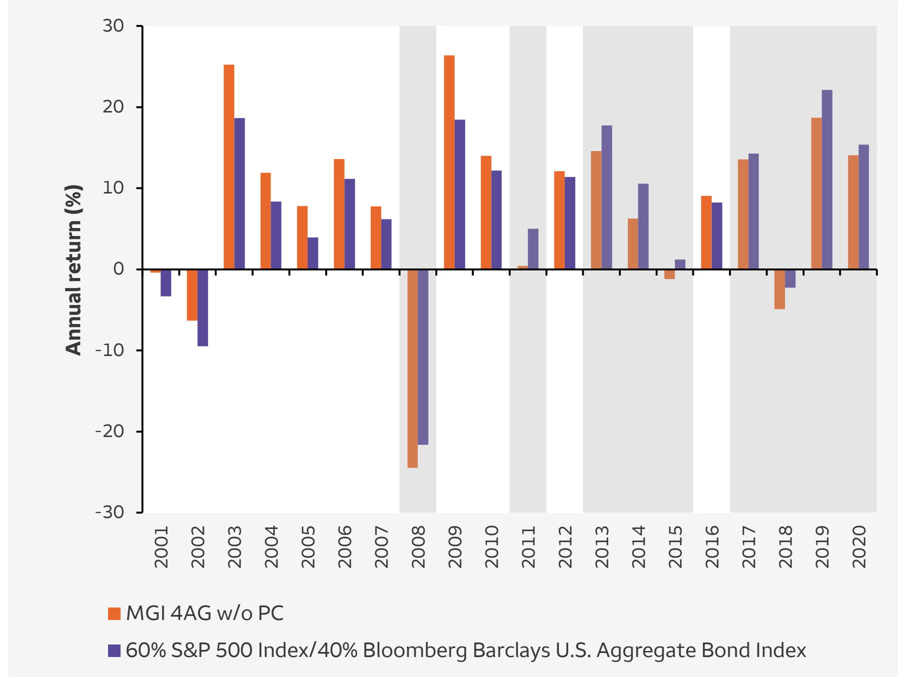
Broad diversification strategies outperformed in 11 of the past 20 years





Sources: © 2020 – Morningstar Direct, All Rights Reserved[1], and Wells Fargo Investment Institute. Data from January 1, 2001 to December 31, 2020. Performance results for the MG&I 4AG w/o PC and the 60% S&P 500 Index/40% Bloomberg Barclays Aggregate Bond Index Portfolios are hypothetical and for illustrative purposes only. Index returns do not represent investment performance or the results of actual trading. Index returns reflect general market results, assume the reinvestment of dividends and other distributions and do not reflect deduction for fees, expenses or taxes applicable to an actual investment. Unlike most asset class Indexes, HFR Index returns are net of all fees. Because the HFR Indexes are calculated based on information that is voluntarily provided actual returns may be lower than those reported. An index is unmanaged and not available for direct investment. **Hypothetical and past performance is no guarantee of future results.** Composition of the Portfolios provided at the end of this presentation.

Key takeaways

- Historical performance may serve as a useful guide for investors, but markets frequently trade on factors outside of fundamental valuations for long periods of time.
- In recent years, a narrowly diversified, U.S.-focused allocation outperformed as U.S. assets led the way. In the coming years, we expect international asset classes to improve, benefitting a more globally diversified allocation.

Diversification strategies do not guarantee investment returns or eliminate the risk of loss.

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Four-asset group w/o private capital — moderate growth and income

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	'06–'20 average
Emg Mkt Equity 32.6%	Emg Mkt Equity 39.8%	Dev ex US Fixed Inc 11.4%	Emg Mkt Equity 79.0%	US Small Cap Equity 26.9%	Emg-Mkt Fixed Inc 8.5%	Emg Mkt Equity 18.6%	US Small Cap Equity 38.8%	US Large Cap Equity 13.7%	US Large Cap Equity 1.4%	US Small Cap Equity 21.3%	Emg Mkt Equity 37.8%	CPI 1.9%	US Large Cap Equity 31.5%	US Small Cap Equity 20.0%	US Large Cap Equity 9.9%
Dev ex US Equity 26.9%	Commod 16.2%	Inv Grade Fixed Inc 5.2%	High Yield Fixed Inc 58.2%	US Mid Cap Equity 25.5%	Inv Grade Fixed Inc 7.8%	Emg-Mkt Fixed Inc 18.5%	US Mid Cap Equity 34.8%	US Mid Cap Equity 13.2%	Emg-Mkt Fixed Inc 1.2%	High Yield Fixed Inc 17.1%	Dev ex US Equity 25.6%	Cash Alternative 1.8%	US Mid Cap Equity 30.5%	Emg Mkt Equity 18.7%	US Mid Cap Equity 9.8%
US Small Cap Equity 18.4%	Dev ex US Equity 11.6%	Cash Alternative 1.8%	US Mid Cap Equity 40.5%	Emg Mkt Equity 19.2%	Dev ex US Fixed Inc 5.9%	Dev ex US Equity 17.9%	US Large Cap Equity 32.4%	60%,40% Portf 10.6%	60%,40% Portf 1.2%	US Mid Cap Equity 13.8%	US Large Cap Equity 21.8%	Inv Grade Fixed Inc 0.0%	US Small Cap Equity 25.5%	US Large Cap Equity 18.4%	US Small Cap Equity 8.9%
US Large Cap Equity 15.8%	Dev ex US Fixed Inc 11.3%	CPI 0.1%	Dev ex US Equity 32.5%	Commod 16.8%	High Yield Fixed Inc 5.0%	US Mid Cap Equity 17.3%	Dev ex US Equity 23.3%	Mod Grwth Inc Portf 6.3%	CPI 0.7%	US Large Cap Equity 12.0%	US Mid Cap Equity 18.5%	Dev ex US Fixed Inc -1.7%	Dev ex US Equity 22.7%	US Mid Cap Equity 17.1%	60%,40% Portf 8.1%
US Mid Cap Equity 15.3%	Hedge Funds 10.0%	Emg-Mkt Fixed Inc -10.9%	Emg-Mkt Fixed Inc 28.2%	High Yield Fixed Inc 15.1%	60%,40% Portf 5.0%	US Small Cap Equity 16.3%	60%,40% Portf 17.7%	Inv Grade Fixed Inc 6.0%	Inv Grade Fixed Inc 0.5%	Commod 11.8%	US Small Cap Equity 14.6%	High Yield Fixed Inc -2.1%	60%,40% Portf 22.1%	60%,40% Portf 15.4%	High Yield Fixed Inc 7.5%
Mod Grwth Inc Portf 13.6%	Mod Grwth Inc Portf 7.7%	Hedge Funds -19.0%	US Small Cap Equity 27.2%	US Large Cap Equity 15.1%	CPI 3.0%	US Large Cap Equity 16.0%	Mod Grwth Inc Portf 14.6%	Emg-Mkt Fixed Inc 5.5%	Cash Alternative 0.0%	Emg Mkt Equity 11.6%	60%,40% Portf 14.3%	60%,40% Portf -2.3%	Emg Mkt Equity 18.9%	Mod Grwth Inc Portf 14.1%	Mod Grwth Inc Portf 7.3%
Hedge Funds 12.9%	Inv Grade Fixed Inc 7.0%	60%,40% Portf -21.6%	US Large Cap Equity 26.5%	Mod Grwth Inc Portf 14.0%	US Large Cap Equity 2.1%	High Yield Fixed Inc 15.8%	Hedge Funds 9.1%	US Small Cap Equity 4.9%	Dev ex US Equity -0.4%	Emg-Mkt Fixed Inc 10.2%	Mod Grwth Inc Portf 13.6%	US Large Cap Equity -4.4%	Mod Grwth Inc Portf 18.7%	Hedge Funds 11.6%	Emg Mkt Equity 7.0%
High Yield Fixed Inc 11.8%	Emg-Mkt Fixed Inc 6.3%	Mod Grwth Inc Portf -24.5%	Mod Grwth Inc Portf 26.4%	60%,40% Portf 12.2%	Mod Grwth Inc Portf 0.4%	Mod Grwth Inc Portf 12.1%	High Yield Fixed Inc 7.4%	Hedge Funds 3.0%	Hedge Funds -1.1%	Mod Grwth Inc Portf 9.1%	Dev ex US Fixed Inc 9.9%	Emg-Mkt Fixed Inc -4.6%	Emg-Mkt Fixed Inc 14.4%	Dev ex US Fixed Inc 10.5%	Emg-Mkt Fixed Inc 6.8%
60%,40% Portf 11.1%	60%,40% Portf 6.2%	High Yield Fixed Inc -26.2%	Hedge Funds 20.0%	Emg-Mkt Fixed Inc 12.0%	Cash Alternative 0.1%	60%,40% Portf 11.4%	CPI 1.5%	High Yield Fixed Inc 2.5%	Mod Grwth Inc Portf -1.2%	60%,40% Portf 8.2%	Emg-Mkt Fixed Inc 9.3%	Hedge Funds -4.7%	High Yield Fixed Inc 14.3%	Dev ex US Equity 8.3%	Dev ex US Equity 5.0%
Emg-Mkt Fixed Inc 9.9%	US Mid Cap Equity 5.6%	US Small Cap Equity -33.8%	Commod 18.9%	Hedge Funds 10.2%	US Mid Cap Equity -1.5%	Hedge Funds 6.4%	Cash Alternative 0.0%	CPI 0.8%	US Mid Cap Equity -2.4%	Hedge Funds 5.4%	Hedge Funds 8.6%	Mod Grwth Inc Portf -4.9%	Hedge Funds 10.4%	Inv Grade Fixed Inc 7.5%	Hedge Funds 4.7%
Dev ex US Fixed Inc 6.8%	US Large Cap Equity 5.5%	Commod -35.6%	60%,40% Portf 18.5%	Dev ex US Equity 8.2%	US Small Cap Equity -4.2%	Inv Grade Fixed Inc 4.2%	Inv Grade Fixed Inc -2.0%	Cash Alternative 0.0%	US Small Cap Equity -4.4%	Inv Grade Fixed Inc 2.6%	High Yield Fixed Inc 7.5%	US Mid Cap Equity -9.1%	Inv Grade Fixed Inc 8.7%	High Yield Fixed Inc 7.1%	Inv Grade Fixed Inc 4.5%
Cash Alternative 4.8%	Cash Alternative 4.8%	US Large Cap Equity -37.0%	Inv Grade Fixed Inc 5.9%	Dev ex US Fixed Inc 6.8%	Hedge Funds -5.3%	CPI 1.7%	Emg Mkt Equity -2.3%	Emg Mkt Equity -1.8%	High Yield Fixed Inc -4.5%	CPI 2.1%	Inv Grade Fixed Inc 3.5%	US Small Cap Equity -11.0%	Commod 7.7%	Emg-Mkt Fixed Inc 5.9%	Dev ex US Fixed Inc 3.9%
Inv Grade Fixed Inc 4.3%	CPI 4.1%	US Mid Cap Equity -41.5%	Dev ex US Fixed Inc 3.9%	Inv Grade Fixed Inc 6.5%	Dev ex US Equity -11.7%	Dev ex US Fixed Inc 0.8%	Dev ex US Fixed Inc -5.1%	Dev ex US Fixed Inc -2.5%	Dev ex US Fixed Inc -4.8%	Dev ex US Fixed Inc 1.9%	CPI 2.1%	Commod -11.2%	Dev ex US Fixed Inc 5.2%	CPI 1.3%	CPI 1.9%
CPI 2.5%	High Yield Fixed Inc 1.9%	Dev ex US Equity -43.1%	CPI 2.7%	CPI 1.5%	Commod -13.3%	Cash Alternative 0.1%	Emg-Mkt Fixed Inc -6.6%	Dev ex US Equity -4.5%	Emg Mkt Equity -14.6%	Dev ex US Equity 1.5%	Commod 1.7%	Dev ex US Equity -13.4%	CPI 2.3%	Cash Alternative 0.5%	Cash Alternative 1.2%
Commod 2.1%	US Small Cap Equity -1.6%	Emg Mkt Equity -53.2%	Cash Alternative 0.1%	Cash Alternative 0.1%	Emg Mkt Equity -18.2%	Commod -1.1%	Commod -9.5%	Commod -17.0%	Commod -24.7%	Cash Alternative 0.3%	Cash Alternative 0.8%	Emg Mkt Equity -14.2%	Cash Alternative 2.2%	Commod -3.1%	Commod -4.0%

DATA AS OF 12/31/2020

Sources: © 2020 – Morningstar Direct, All Rights Reserved[1], and Wells Fargo Investment Institute. Average is calculated as geometric mean. Average is calculated as 15 years from 2006–2020. Portfolios are rebalanced quarterly. The moderate growth and income and 60/40 portfolios are hypothetical. **Hypothetical and past performance does not guarantee future results**. An index is unmanaged and not available for direct investment. Please see the end of the report for the definitions of the indexes that correlate to each asset class.

Index definitions

Performance results for the MGI 4AG w/o private capital and 60/40 portfolios are hypothetical and for illustrative purposes only. Hypothetical results do not represent actual trading, and the results achieved do not represent the experience of any individual investor. In addition, hypothetical results do not reflect the impact of any fees, expenses, or taxes applicable to an actual investment. Unlike most asset-class Indexes, HFR index returns are net of all fees. The Indexes reflect the historical performance of the represented assets and assume the reinvestment of dividends and other distributions. An index is unmanaged and not available for direct investment. **Hypothetical and past performance does not guarantee future results.** Definitions of the Indexes and descriptions of the risks associated with investment in these asset classes are provided below.

60%/40% portfolio: 60% S&P 500 Index and 40% Bloomberg Barclays U.S. Aggregate Bond Index

Moderate Growth and Income without Private Capital: 3% Bloomberg Barclays U.S. Treasury Bill (1–3 Month) Index, 22% Bloomberg Barclays U.S. Aggregate Bond Index, 6% Bloomberg Barclays U.S. Corporate High Yield Bond Index, 5% JPM EMBI Global Index, 20% S&P 500 Index, 10% Russell Midcap Index, 8% Russell 2000 Index, 6% MSCI EAFE Index, 5% MSCI Emerging Markets Index, 15% HFRI Fund Weighted Composite Index.

- **Investment Grade Fixed Income: Bloomberg Barclays U.S. Aggregate Bond Index** is composed of the Bloomberg Barclays U.S. Government/Credit Index and the Bloomberg Barclays U.S. Mortgage-Backed Securities Index and includes Treasury issues, agency issues, corporate bond issues, and mortgage-backed securities.
- **High Yield Fixed Income: Bloomberg Barclays U.S. Corporate High Yield Bond Index** covers the U.S.-dollar-denominated, non-investment-grade, fixed-rate, taxable corporate bond market. Securities are classified as high yield if the middle rating of Moody's, Fitch, and S&P is Ba1/BB+/BB= or below. Included issues must have at least one year until final maturity.
- **Cash Alternatives/Treasury bills: Bloomberg Barclays U.S. Treasury Bill (1–3 Month) Index** is representative of money markets.
- **Commodities: Bloomberg Commodity Index** is a broadly diversified index of commodity futures on 20 physical commodities, subdivided into energy, U.S. agriculture, livestock, precious metals, and industrial metals sectors. Commodity weights are derived in a manner that attempts to fairly represent the importance of a diversified group of commodities to the world economy.
- **Developed Market Ex-U.S. Fixed Income: JP Morgan Global Ex U.S. Index (JPM GBI Global Ex-U.S.)** is a total return, market-capitalization-weighted index, rebalanced monthly, consisting of the following countries: Australia, Germany, Spain, Belgium, Italy, Sweden, Canada, Japan, the United Kingdom, Denmark, the Netherlands, and France.
- **Emerging Market Fixed Income: JPM EMBI Global Index** is a U.S.-dollar-denominated, investible, market-cap-weighted index representing a broad universe of emerging market sovereign and quasi-sovereign debt. While products in the asset class have become more diverse, focusing on both local currency and corporate issuance, there is currently no widely accepted aggregate index reflecting the broader opportunity set available, although the asset class is evolving. By using the same index provider as the one used in the developed market bonds asset class, there is consistent categorization of countries among developed international bonds (ex. U.S.) and emerging market bonds.
- **Developed Market Ex-U.S. Equities: MSCI EAFE Index (Europe, Australasia, Far East) Index** is a free-float-adjusted market-capitalization-weighted index designed to measure the equity market performance of developed markets, excluding the U.S. and Canada.
- **Emerging Market Equities: MSCI Emerging Markets Index** is a free-float-adjusted market-capitalization-weighted index designed to measure equity market performance of emerging markets.
- **U.S. Small Cap Equities: Russell 2000® Index** measures the performance of the 2,000 smallest companies in the Russell 3000® Index, which represents approximately 8% of the total market capitalization of the Russell 3000 Index.
- **U.S. Mid Cap Equities: Russell Midcap® Index** measures the performance of the 800 smallest companies in the Russell 1000® Index, which represent approximately 25% of the total market capitalization of the Russell 1000 Index.
- **U.S. Large Cap Equities: S&P 500 Index** consists of 500 stocks chosen for market size, liquidity, and industry group representation. It is a market-value-weighted index with each stock's weight in the index proportionate to its market value.
- **Inflation-CPI: IA SBBI U.S. Inflation Index** is a custom unmanaged index designed to track the U.S. inflation rate.

Index definitions (continued)

- **Hedge Funds: HFRI Fund Weighted Composite Index** is a global, equal-weighted index of over 2,000 single-manager funds that report to HFR Database. Constituent funds report monthly net-of-all-fees performance in U.S. Dollars and have a minimum of $50M under management or a 12-month track record of active performance. The HFRI Fund Weighted Composite Index does not include Funds of Hedge Funds.

While the HFRI Indexes are frequently used, they have limitations (some of which are typical of other widely used Indexes). These limitations include survivorship bias (the returns of the Indexes may not be representative of all the hedge funds in the universe because of the tendency of lower performing funds to leave the index); heterogeneity (not all hedge funds are alike or comparable to one another, and the index may not accurately reflect the performance of a described style); and limited data (many hedge funds do not report to Indexes, and, therefore, the index may omit funds, the inclusion of which might significantly affect the performance shown. The HFRI Indexes are based on information self-reported by hedge fund managers that decide on their own, at any time, whether or not they want to provide, or continue to provide, information to HFR Asset Management, L.L.C. Results for funds that go out of business are included in the index until the date that they cease operations. Therefore, these Indexes may not be complete or accurate representations of the hedge fund universe, and may be biased in several ways. Returns of the underlying hedge funds are net of fees and are denominated in USD.

NOTE: The 4 asset group without private capital Moderate Growth and Income Portfolio represents a balanced portfolio. A balanced portfolio composed of a variety of asset classes typically does not exhibit the same level of volatility as an individual asset class. This helps to smooth out portfolio performance over time.

Risk considerations

Asset allocation and diversification are investment methods used to help manage risk. They do not ensure a profit or protect against a loss. All investing involves risks, including the possible loss of principal. There can be no assurance that any investment strategy will be successful. Investments fluctuate with changes in market and economic conditions and in different environments due to numerous factors, some of which may be unpredictable. Each asset class has its own risk and return characteristics. Some of the risks associated with the representative index asset classes shown in the charts include:

Alternative investments: Alternative investments, including hedge funds and private capital funds, are speculative and entail significant risks, including those associated with potential lack of diversification, restrictions on transferring interests, no available secondary market, complex tax structures, delays in tax reporting, valuation of securities, and pricing. They trade in diverse complex strategies that are affected in different ways and at different times by changing market conditions. Strategies may, at times, be out of market favor for considerable periods with adverse consequences for the fund and the investor. An investment in these funds involves the risks inherent in an investment in securities and can include losses associated with speculative investment practices, including hedging and leveraging through derivatives, such as futures, options, swaps, short selling, investments in non-U.S. securities, junk bonds, and illiquid investments.

Commodities: The commodities markets are considered speculative, carry substantial risks, and have experienced periods of extreme volatility. Commodities may be affected by changes in overall market movements, commodity index volatility, changes in interest rates, or other factors affecting a particular industry or commodity. Investing in physical commodities, such as gold and other precious metals, exposes a portfolio to other risk considerations, such as potentially severe price fluctuations over short periods of time and storage costs that exceed the custodial and/or brokerage costs associated with a portfolio's other holdings. In addition to the risks of investing in commodities generally, investing in base metals carries additional risks. These metals are highly levered to the relative strength of the U.S. dollar, economic growth, and inflation. They cannot be held physically and are not easily converted to cash. Exposure to base metals is usually accessed through investments in stocks of mining companies, exchange-traded funds, mutual funds, or futures trading.

Currencies: Currency risk is the risk that foreign currencies will decline in value relative to that of the U.S. dollar. Exchange rate movement between the U.S. dollar and foreign currencies may cause the value of an investment to decline.

Equity securities: Stocks are subject to market risk, which means their value may fluctuate in response to general economic and market conditions, the prospects of individual companies, and industry sectors. The prices of **small/mid-company stocks** are generally more volatile than large-company stocks. They often involve higher risks because smaller and midsize companies may lack the management expertise, financial resources, product diversification, and competitive strengths to endure adverse economic conditions.

Fixed income: Investments in fixed-income securities are subject to interest rate, credit/default, liquidity, inflation, and other risks. Bond prices fluctuate inversely to changes in interest rates. Therefore, a general rise in interest rates can result in a decline in the bond's price. Credit risk is the risk that an issuer will default on payments of interest and/or principal. This risk is heightened in lower-rated bonds. If sold prior to maturity, fixed-income securities are subject to market risk. All fixed-income investments may be worth less than their original cost upon redemption or maturity. High-yield fixed-income securities are considered speculative, involve greater risk of default, and tend to be more volatile than investment-grade fixed-income securities. **Municipal bonds** offer interest payments exempt from federal taxes, and potentially state and local income taxes. Municipal bonds are subject to credit risk and potentially the alternative minimum tax (AMT). Quality varies widely depending on the specific issuer. **U.S. government securities** are backed by the full faith and credit of the federal government as to payment of principal and interest if held to maturity. Although free from credit risk, they are subject to interest rate risk.

Foreign/emerging/frontier markets: Investing in foreign securities presents certain risks not associated with domestic investments, such as currency fluctuation, political and economic instability, and different accounting standards. This may result in greater share price volatility. These risks are heightened in emerging and frontier markets.

Real estate: Investing in real estate investment trusts (REITs) has special risks, including possible illiquidity of the underlying properties, credit risk, interest rate fluctuations, and the impact of varied economic conditions.

Treasury Inflation-Protected Securities (TIPS): TIPS are subject to interest rate risk, especially when real interest rates rise. This may cause the underlying value of the bond to fluctuate more than other fixed-income securities.

Morningstar category definitions

Large cap: Large-blend portfolios are fairly representative of the overall US stock market in size, growth rates and price. Stocks in the top 70% of the capitalization of the US equity market are defined as large cap. The blend style is assigned to portfolios where neither growth nor value characteristics predominate. These portfolios tend to invest across the spectrum of US industries, and owing to their broad exposure, the portfolios' returns are often similar to those of the S&P 500 Index.

Mid cap: The typical mid-cap blend portfolio invests in U.S. stocks of various sizes and styles, giving it a middle-of-the-road profile. Most shy away from high-priced growth stocks but aren't so price-conscious that they land in value territory. The U.S. mid-cap range for market capitalization typically falls between $1 billion and $8 billion and represents 20% of the total capitalization of the U.S. equity market. The blend style is assigned to portfolios where neither growth nor value characteristics predominate.

Small cap: Favor U.S. firms at the smaller end of the market-capitalization range. Some aim to own an array of value and growth stocks while others employ a discipline that leads to holdings with valuations and growth rates close to the small-cap averages. Stocks in the bottom 10% of the capitalization of the U.S. equity market are defined as small cap. The blend style is assigned to portfolios where neither growth nor value characteristics predominate.

Developed market ex-U.S equity: Invest in a variety of big international stocks. Most of these portfolios divide their assets among a dozen or more developed markets, including Japan, Britain, France, and Germany. These portfolios primarily invest in stocks that have market caps in the top 70% of each economically integrated market (such as Europe or Asia ex-Japan). The blend style is assigned to portfolios where neither growth nor value characteristics predominate. These portfolios typically will have less than 20% of assets invested in U.S. stocks.

Emerging market equity: Diversified emerging-markets portfolios tend to divide their assets among 20 or more nations, although they tend to focus on the emerging markets of Asia and Latin America rather than on those of the Middle East, Africa, or Europe. These portfolios invest predominantly in emerging market equities, but some funds also invest in both equities and fixed income investments from emerging markets.

Global large cap (World Stock): invest in a variety of international stocks that are larger. Global portfolios have few geographical limitations. It is common for these portfolios to invest the majority of their assets in developed markets, with the remainder divided among the globe's smaller markets. These portfolios typically have 20%-60% of assets in U.S. stocks.

Global small cap: invest in a variety of international stocks that are smaller. Global portfolios have few geographical limitations. It is common for these portfolios to invest the majority of their assets in developed markets, with the remainder divided among the globe's smaller markets. These portfolios typically have 20%-60% of assets in U.S. stocks.

U.S. investment grade: Intermediate-term bond portfolios invest primarily in corporate and other investment-grade U.S. fixed-income issues and typically have durations of 3.5 to 6.0 years. These portfolios are less sensitive to interest rates, and therefore less volatile, than portfolios that have longer durations.

U.S. investment grade municipal: Muni national intermediate portfolios invest in bonds issued by various state and local governments to fund public projects. The income from these bonds is generally free from federal taxes. To lower risk, these portfolios spread their assets across many states and sectors. These portfolios have durations of 4.0 to 6.0 years (or average maturities of five to 12 years).

U.S. government: Intermediate-government portfolios have at least 90% of their bond holdings in bonds backed by the U.S. government or by government-linked agencies. This backing minimizes the credit risk of these portfolios, as the U.S. government is unlikely to default on its debt. These portfolios have durations typically between 3.5 and 6.0 years.

High yield: High-yield bond portfolios concentrate on lower-quality bonds, which are riskier than those of higher-quality companies. These portfolios generally offer higher yields than other types of portfolios, but they are also more vulnerable to economic and credit risk. These portfolios primarily invest in U.S. high-income debt securities where at least 65% or more of bond assets are not rated or are rated by a major agency such as Standard & Poor's or Moody's at the level of BB (considered speculative for taxable bonds) and below.

Domestic REITs: Real estate portfolios invest primarily in real estate investment trusts of various types. REITs are companies that develop and manage real estate properties. There are several different types of REITs, including apartment, factory-outlet, health-care, hotel, industrial, mortgage, office, and shopping center REITs. Some portfolios in this category also invest in real estate operating companies.

Morningstar category definitions (continued)

Global REITs: Global real estate portfolios invest primarily in non-U.S. real estate securities but may also invest in U.S. real estate securities. Securities that these portfolios purchase include: debt securities, equity securities, convertible securities, and securities issued by real estate investment trusts and REIT-like entities. Portfolios in this category also invest in real estate operating companies.

MLPs: Energy Limited Partnership funds invest a significant amount of their portfolio in energy master limited partnerships. These include but are not limited to limited partnerships specializing in midstream operations in the energy industry.

Commodities: Broad-basket portfolios can invest in a diversified basket of commodity goods including but not limited to grains, minerals, metals, livestock, cotton, oils, sugar, coffee, and cocoa. Investment can be made directly in physical assets or commodity-linked derivative instruments, such as commodity swap agreements.

Equity Hedge: Long-short portfolios hold sizeable stakes in both long and short positions in equities, exchange traded funds, and related derivatives. Some funds that fall into this category will shift their exposure to long and short positions depending on their macro outlook or the opportunities they uncover through bottom-up research. At least 75% of the assets are in equity securities or derivatives, and funds in the category will typically have beta values to relevant benchmarks of between 0.3 and 0.8 during a three-year period.

Macro: These funds offer investors exposure to several different alternative investment tactics. Funds in this category have a majority of their assets exposed to alternative strategies. An investor's exposure to different tactics may change slightly over time in response to market movements. Funds in this category include both funds with static allocations to alternative strategies and funds tactically allocating among alternative strategies and asset classes. The gross short exposure is greater than 20%.

Relative Value: These funds offer investors exposure to several different alternative investment tactics. Funds in this category have a majority of their assets exposed to alternative strategies. An investor's exposure to different tactics may change slightly over time in response to market movements. Funds in this category include both funds with static allocations to alternative strategies and funds tactically allocating among alternative strategies and asset classes. The gross short exposure is greater than 20%.

Event Driven: These funds offer investors exposure to several different alternative investment tactics. Funds in this category have a majority of their assets exposed to alternative strategies. An investor's exposure to different tactics may change slightly over time in response to market movements. Funds in this category include both funds with static allocations to alternative strategies and funds tactically allocating among alternative strategies and asset classes. The gross short exposure is greater than 20%.

[1] The information contained herein: (1) is proprietary to Morningstar and/or its content providers; (2) may not be copied or distributed; and (3) is not warranted to be accurate, complete or timely. Neither Morningstar nor its content providers are responsible for any damages or losses arising from any use of this information.

Portfolio compositions

Four-asset-group portfolios without private capital

Moderate Income: 3% Bloomberg Barclays U.S. Treasury Bill (1–3 Month) Index, 52% Bloomberg Barclays U.S. Aggregate Bond Index, 7% Bloomberg Barclays U.S. Corporate High Yield Bond Index, 5% JPM EMBI Global Index, 10% S&P 500 Index, 5% Russell Midcap Index, 2% Russell 2000 Index, 4% MSCI EAFE Index, 12% HFRI Fund Weighted Composite Index.

Moderate Growth and Income: 3% Bloomberg Barclays U.S. Treasury Bill (1–3 Month) Index, 22% Bloomberg Barclays U.S. Aggregate Bond Index, 6% Bloomberg Barclays U.S. Corporate High Yield Bond Index, 5% JPM EMBI Global Index, 20% S&P 500 Index, 10% Russell Midcap Index, 8% Russell 2000 Index, 6% MSCI EAFE Index, 5% MSCI Emerging Markets Index, 15% HFRI Fund Weighted Composite Index.

Moderate Growth: 2% Bloomberg Barclays U.S. Treasury Bill (1–3 Month) Index, 5% Bloomberg Barclays U.S. Aggregate Bond Index, 3% Bloomberg Barclays U.S. Corporate High Yield Bond Index, 3% JPM EMBI Global Index, 25% S&P 500 Index, 15% Russell Midcap Index, 14% Russell 2000 Index, 11% MSCI EAFE Index, 12% MSCI Emerging Markets Index, 10% HFRI Fund Weighted Composite Index.

Three-asset-group portfolios

Moderate Income: 3% Bloomberg Barclays U.S. Treasury Bill (1–3 Month) Index, 61% Bloomberg Barclays U.S. Aggregate Bond Index, 6% Bloomberg Barclays U.S. Corporate High Yield Bond Index, 5% JPM EMBI Global Index, 12% S&P 500 Index, 5% Russell Midcap Index, 4% Russell 2000 Index, 4% MSCI EAFE Index.

Moderate Growth and Income: 3% Bloomberg Barclays U.S. Treasury Bill (1–3 Month) Index, 32% Bloomberg Barclays U.S. Aggregate Bond Index, 6% Bloomberg Barclays U.S. Corporate High Yield Bond Index, 5% JPM EMBI Global Index, 21% S&P 500 Index, 12% Russell Midcap Index, 8% Russell 2000 Index, 6% MSCI EAFE Index, 7% MSCI Emerging Markets Index.

Moderate Growth: 2% Bloomberg Barclays U.S. Treasury Bill (1–3 Month) Index, 11% Bloomberg Barclays U.S. Aggregate Bond Index, 3% Bloomberg Barclays U.S. Corporate High Yield Bond Index, 3% JPM EMBI Global Index, 29% S&P 500 Index, 16% Russell Midcap Index, 13% Russell 2000 Index, 10% MSCI EAFE Index, 13% MSCI Emerging Markets Index.

Composition for hypothetical portfolios, slide 89:

Hypothetical top-performer portfolio: 2002: 100% Bloomberg Barclays U.S. Aggregate Bond Index (1–3 year); 2003: 100% Bloomberg Commodity Index; 2004: 100% MSCI Emerging Markets Index; 2005: 100% MSCI Emerging Markets Index; 2006: 100% MSCI Emerging Markets Index; 2007: 100% MSCI Emerging Markets Index; 2008: 100% MSCI Emerging Markets Index; 2009: 100% J.P. Morgan GBI Global ex-U.S. Index; 2010: 100% MSCI Emerging Markets Index; 2011: 100% Russell 2000 Index; 2012: 100% Bloomberg Barclays U.S. Aggregate Bond Index (10+year); 2013: 100% MSCI Emerging Markets Index; 2014: 100% Russell 2000 Index; 2015: 100% Bloomberg Barclays U.S. Aggregate Bond Index (10+ year); 2016: 100% S&P 500 Index; 2017: 100% Russell 2000 Index; 2018: 100% MSCI Emerging Markets Index; 2019: 100% Bloomberg Barclays U.S. Treasury Bill 1–3 Month Index, and 2020: 100% S&P 500 Index.

Hypothetical bottom-performer portfolio: 2002: 100% MSCI EAFE Index; 2003: 100% S&P 500 Index; 2004: 100% Bloomberg Barclays U.S. Treasury Bill 1–3 Month Index; 2005: 100% Bloomberg Barclays U.S. Treasury Bill 1–3 Month Index; 2006: 100% J.P. Morgan GBI Global ex-U.S. Index; 2007: 100% Bloomberg Commodity Index; 2008: 100% Russell 2000 Index; 2009: 100% MSCI Emerging Markets Index; 2010: 100% Bloomberg Barclays U.S. Aggregate Bond Index (10+ year); 2011: 100% Bloomberg Barclays U.S. Treasury Bill 1–3 Month Index; 2012: 100% MSCI Emerging Markets Index; 2013: 100% Bloomberg Commodity Index; 2014: 100% Bloomberg Commodity Index; 2015: 100% Bloomberg Commodity Index; 2016: 100% Bloomberg Commodity Index; 2017: 100% Bloomberg Barclays U.S. Treasury Bill 1–3 Month Index; 2018: 100% Bloomberg Barclays U.S. Treasury Bill 1–3 Month Index, 2019: 100% MSCI Emerging Markets Index, and 100% Bloomberg Barclays U.S. Treasury Bill 1–3 Month Index .

Index definitions

Cash alternatives/Treasury bills:

Bloomberg Barclays U.S. Treasury Bills (1–3 Month) Index is representative of money markets.

IA SBBI U.S. 30-Day Treasury Bill Index is a custom index designed to measure the performance of U.S. Treasury bills maturing in 0 to 30 days.

Fixed income:

Bloomberg Barclays Multiverse Index provides a broad-based measure of the global fixed-income bond market. The index represents the union of the Global Aggregate Index and the Global High-Yield Index and captures investment-grade and high-yield securities in all eligible currencies. Stand-alone Indexes such as the Euro Floating-Rate ABS Index and the Chinese Aggregate Index are excluded. The Multiverse Index family includes a wide range of standard and customized subIndexes by sector, quality, maturity, and country.

Short-term fixed income taxable:

Bloomberg Barclays U.S. Aggregate 1–3 Year Bond Index is unmanaged and is composed of the Bloomberg Barclays U.S. Government/Credit Index and the Bloomberg Barclays U.S. Mortgage-Backed Securities Index and includes Treasury issues, agency issues, corporate bond issues, and mortgage-backed securities with maturities of one to three years.

Intermediate-term fixed income taxable:

Bloomberg Barclays U.S. Aggregate 5–7 Year Bond Index is unmanaged and is composed of the Bloomberg Barclays U.S. Government/Credit Index and the Bloomberg Barclays U.S. Mortgage-Backed Securities Index and includes Treasury issues, agency issues, corporate bond issues, and mortgage-backed securities with maturities of five to seven years.

Long-term fixed income taxable:

Bloomberg Barclays U.S. Aggregate 10+ Year Bond Index is unmanaged and is composed of the Bloomberg Barclays U.S. Government/Credit Index and the Bloomberg Barclays U.S. Mortgage-Backed Securities Index and includes Treasury issues, agency issues, corporate bond issues, and mortgage-backed securities with maturities of 10 years or longer.

Investment-grade fixed income taxable:

Bloomberg Barclays U.S. Aggregate Bond Index is composed of the Bloomberg Barclays U.S. Government/Credit Index and the Bloomberg Barclays U.S. Mortgage-Backed Securities Index and includes Treasury issues, agency issues, corporate bond issues, and mortgage-backed securities.

U.S. municipal bond:

Bloomberg Barclays U.S. Municipal Index is considered representative of the broad market for investment-grade, tax-exempt bonds with a maturity of at least one year.

High-yield fixed income taxable:

Bloomberg Barclays U.S. Corporate High Yield Bond Index covers the U.S.-dollar-denominated, non-investment-grade, fixed-rate, taxable corporate bond market. Securities are classified as high yield if the middle rating of Moody's, Fitch, and S&P is Ba1/BB+/BB= or below. Included issues must have at least one year until final maturity.

ICE BofA U.S. High Yield Index is a market-capitalization-weighted index of domestic and Yankee high-yield bonds. The index tracks the performance of high-yield securities traded in the U.S. bond market.

Investment-grade corporate fixed income:

Bloomberg Barclays U.S. Corporate Bond Index measures the performance of the investment-grade corporate bond market.

The Moody's Baa Corporate Bond Index measures the yield on corporate bonds that are rated Baa.

Bloomberg Barclays Corporate Bond BAA Index is a subset of the Bloomberg Barclays U.S. Corporates Index with an index rating of Baa1, Baa2, or Baa3.

High-yield municipal fixed income:

Bloomberg Barclays U.S. Municipal High Yield Index measures the non-investment-grade and nonrated U.S.-dollar-denominated, fixed-rate, tax-exempt bond market within the 50 United States and four other qualifying regions (Washington, D.C.; Puerto Rico; Guam; and the Virgin Islands). The index allows state and local general obligation, revenue, insured, and prerefunded bonds; however, historically, the index has been comprised of mostly revenue bonds. The U.S. Municipal High Yield Index is a stand-alone index with no crossover into other Bloomberg Barclays taxable Indexes, such as the U.S. High Yield Index.

Index definitions (continued)

Government bonds:

IA SBBI U.S. Long-Term Government Bond Index is a custom unmanaged index designed to measure the performance of long-term U.S. government bonds, which includes U.S. Treasury and U.S. government agency bonds with maturities of seven years or longer.

Bloomberg Barclays U.S. Government/Credit Index includes investment-grade, U.S.- dollar-denominated, fixed-rate, taxable corporate- and government-related bonds.

Bloomberg Barclays U.S. Treasury 10+ Year Bond Index includes public obligations of the U.S. Treasury with a remaining maturity of 10 years or more.

Bloomberg Barclays U.S. Intermediate Treasury Index measures US dollar-denominated, fixed-rate, nominal debt issued by the US Treasury with maturities greater than or equal to 1 year and less than 10 years.

Emerging market fixed income:

J.P. Morgan EMBI Global Index (USD) is a U.S.-dollar-denominated, investible, market-cap-weighted index representing a broad universe of emerging market sovereign and quasi-sovereign debt. While products in the asset class have become more diverse, focusing on both local currency and corporate issuance, there is currently no widely accepted aggregate index reflecting the broader opportunity set available, although the asset class is evolving. By using the same index provider as the one used in the developed market bonds asset class, there is consistent categorization of countries among developed international bonds (ex-U.S.) and emerging market bonds.

J.P. Morgan Emerging Markets Global Index (local currency) is a comprehensive global local emerging market index and consists of regularly traded, liquid fixed-rate, domestic currency government bonds.

Developed market fixed income:

J.P. Morgan GBI Global ex-U.S. Index (Unhedged) in USD is an unmanaged index market representative of the total return performance in U.S. dollars on an unhedged basis of major non-U.S. bond markets.

J.P. Morgan Non-U.S. Global Government Bond Index (Hedged) is an unmanaged market index representative of the total return performance, on a hedged basis, of major non-U.S. bond markets. It is calculated in U.S. dollars.

Equities:

Global equities:

MSCI All Country World Index (ACWI) is a free-float-adjusted market-capitalization-weighted index that is designed to measure the equity market performance of 23 developed and 23 emerging markets.

MSCI All Country World Small Cap Index is a free-float-adjusted market-capitalization-weighted index that is designed to measure small cap performance of 23 developed and 23 emerging markets.

U.S. equities:

MSCI U.S. Equity Indexes are a domestic-only series—independent from MSCI's Global Equity Index family—which reflect the investment opportunities in the U.S. equity markets by market-capitalization size, by value and growth investment styles, and by sectors and industries.

The MSCI USA Cyclical Sectors Index is based on MSCI USA Index, its parent index and captures large and mid-cap segments of the US market. The index is designed to reflect the performance of the opportunity set of global cyclical companies across various GICS® sectors. All constituent securities from Consumer Discretionary, Communication Services, Financials, Industrials, Information Technology and Materials are included in the Index.

The MSCI USA Defensive Sectors Index is based on MSCI USA Index, its parent index and captures large and mid-cap segments of the US market. The index is designed to reflect the performance of the opportunity set of global defensive companies across various GICS® sectors. All constituent securities from Consumer Staples, Energy, Healthcare and Utilities are included in the Index.

Small-cap equities:

Small Company Stocks: IA SBBI U.S. Small Stock Index is a custom index designed to measure the performance of small-capitalization U.S. stocks.

Russell 2000® Index measures the performance of the 2,000 smallest companies in the Russell 3000® Index, which represents approximately 8% of the total market capitalization of the Russell 3000 Index.

Index definitions (continued)

Russell 2000® Growth Index measures the performance of those Russell 2000 companies with higher price-to-book ratios and higher forecasted growth values.

Russell 2000® Value Index measures the performance of those Russell 2000 companies with lower price-to-book ratios and lower forecasted growth values.

Mid-cap equities:

Russell Midcap® Index measures the performance of the 800 smallest companies in the Russell 1000® Index, which represents approximately 25% of the total market capitalization of the Russell 1000® Index.

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

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

Large-cap equities:

S&P 500 Index consists of 500 stocks chosen for market size, liquidity, and industry group representation. It is a market-value-weighted index with each stock's weight in the index proportionate to its market value.

Russell 1000® Index measures the performance of the 1,000 largest companies in the Russell 3000 Index, which represents approximately 92% of the total market capitalization of the Russell 3000 Index.

Russell 1000® Growth Index measures the performance of those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.

Russell 1000® Value Index measures the performance of those Russell 1000 companies with lower price-to-book ratios and lower forecasted growth values.

The Dow Jones Industrial Average is a price-weighted average of 30 blue-chip stocks that are generally the leaders in their industry.

Developed market equities:

MSCI World ex USA Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of 22 developed markets excluding the United States.

MSCI EAFE Index is a free-float-adjusted market-capitalization-weighted index designed to measure the equity market performance of developed markets, excluding the U.S. and Canada.

The MSCI EAFE Growth Index is a free-float weighted index. The index represents the securities classified as growth securities by MSCI that are members of the MSCI EAFE Index.

The MSCI EAFE Value Index is a free-float weighted index. The index represents the securities classified as value securities by MSCI that are members of the MSCI EAFE Index.

MSCI Canada Index is a free-float-adjusted market-capitalization-weighted index that is designed to measure the equity market performance of Canada.

MSCI Japan Index is designed to measure the performance of the large and mid cap segments of the Japanese market. With 323 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in Japan.

MSCI Asia Pacific Index captures large and mid cap representation across 5 Developed Markets countries and 9 Emerging Markets. countries in the Asia Pacific region. With 1,335 constituents, the index covers approximately 85% of the free float-adjusted market. capitalization in each country.

MSCI Australia Index is designed to measure the performance of the large and mid cap segments of the Australia market. With 68 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in Australia.

Nikkei 225 Index is the leading and most-respected index of Japanese stocks. It is a price-weighted index comprised of Japan's top 225 blue-chip companies on the Tokyo Stock Exchange. The Nikkei is equivalent to the Dow Jones Industrial Average Index in the U.S.

Hong Kong Hang Seng Index is a market-capitalization-weighted index of 40 of the largest companies that trade on the Hong Kong Exchange. The Hang Seng Index is maintained by a subsidiary of Hang Seng Bank and has been published since 1969. The index aims to capture the leadership of the Hong Kong exchange and covers approximately 65% of its total market capitalization. The Hang Seng members are also classified into one of four subIndexes based on the main lines of business, including commerce and industry, finance, utilities, and properties.

Index definitions (continued)

EURO STOXX 50 Index is Europe's leading blue-chip index for the eurozone and provides a blue-chip representation of supersector leaders in the eurozone. The index covers 50 stocks from 12 eurozone countries: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain.

Emerging market equities:

MSCI Emerging Markets (EM) Index is a free-float-adjusted market-capitalization-weighted index designed to measure equity market performance of emerging markets.

MSCI EM ex Asia Index captures large and mid cap representation across 17 Emerging Markets countries. With 267 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country excluding Asia.

MSCI EM Latin America Index captures large and mid cap representation across 6 Emerging Markets countries in Latin America. With 108 constituents, the index covers approximately 85% of the free float-adjusted market capitalization. in each country.

MSCI EM Europe Index captures large and mid cap representation across 6 Emerging Markets countries in Europe. With 72 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

MSCI EM Asia Index captures large and mid cap representation across 9 Emerging Markets countries in Asia. With 912 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

MSCI South Africa Index is designed to measure the performance of the large and mid cap segments of the South African market. With 46 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in South Africa.

Volatility indexes:

VNKY Index: The Nikkei Stock Average Volatility Index is calculated by using prices of Nikkei 225 futures and Nikkei 225 options on the Osaka Securities Exchange. The real-time (every 15 seconds) calculation started from January 30, 2012. Final confirmation value (KAKUHOU) is 15:20 JPT.

VSTOXX Index is based on a new methodology jointly developed by Deutsche Borse and Goldman Sachs to measure volatility in the eurozone. VSTOXX is based on the EURO STOXX 50 Index options traded on Eurex. It measures implied volatility on options with a rolling 30-day expiry.

HSI Volatility Index aims to measure the 30-calendar-day expected volatility of the Hang Seng Index implicit in the prices of near-term and next-term Hang Seng Index Options, which are now trading on the Hong Kong Exchanges and Clearing Limited's derivatives market.

VIX: The Chicago Board Options Exchange Volatility Index reflects a market estimate of future volatility, based on the weighted average of the implied volatilities for a wide range of strikes. First- and second-month expirations are used until eight days from expiration, then the second and third are used.

Currencies:

U.S. Dollar Index (USDX/DXY) measures the value of the U.S. dollar relative to majority of its most significant trading partners. This index is similar to other trade-weighted Indexes, which also use the exchange rates from the same major currencies.

J.P. Morgan Emerging Market Currency Index tracks the performance of emerging market currencies relative to the U.S. dollar.

Commodities:

Bloomberg Commodity Index is calculated on an excess return basis and reflects commodity futures price movements. The index rebalances annually, weighted two-thirds by trading volume and one-third by world production, and weight-caps are applied at the commodity, sector, and group level for diversification.

Energy sector: Bloomberg Energy Subindex is a commodity group subindex of the Bloomberg Commodity Index. It is composed of futures contracts on crude oil, heating oil, unleaded gasoline, and natural gas. It reflects the return of underlying commodity futures price movements only and is quoted in USD.

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Index definitions (continued)

Agriculture sector: Bloomberg Agriculture Subindex is a commodity group subindex of the Bloomberg Commodity Index. It is composed of futures contracts on coffee, corn, cotton, soybeans, soybean oil, soybean meal, sugar, and wheat. It reflects the return of underlying commodity futures price movements only and is quoted in USD.

Precious metals sector: Bloomberg Precious Metals Subindex is a commodity group subindex of the Bloomberg Commodity Index. It is composed of futures contracts on gold and silver. It reflects the return of underlying commodity futures price movements only and is quoted in USD.

Base metals sector: Bloomberg Industrial Metals Subindex is composed of futures contracts on aluminum, copper, nickel, and zinc. It reflects the return of underlying commodity futures price movements only and is quoted in USD.

The Reuters Continuous Commodity Index is an equal-weighted geometric average of commodity price levels relative to the base-year average price.

REITs:

Global REITs/public real estate: FTSE EPRA/NAREIT Developed Index is designed to track the performance of listed real estate companies and REITs in developed countries worldwide.

Domestic REITs: FTSE NAREIT All Equity REITs Index is designed to track the performance of REITs representing equity interests in (as opposed to mortgages on) properties. It represents all tax-qualified REITs with more than 50% of total assets in qualifying real estate assets, other than mortgages secured by real property that also meet minimum size and liquidity criteria.

International REITs: FTSE EPRA/NAREIT Global Ex-U.S. Index is part of a range of Indexes designed to help U.S. investors benchmark their international investments. The index comprises large-, mid-, and small-cap stocks globally excluding the U.S. The index is derived from the FTSE Global Equity Index Series, which covers 98% of the world's investible market capitalization.

Hedge funds:

HFRI Fund Weighted Composite Index is a global, equal-weighted index of over 2,000 single-manager funds that report to HFR Database. Constituent funds report monthly net-of-all-fees performance in U.S. Dollars and have a minimum of $50M under management or a 12-month track record of active performance. The HFRI Fund Weighted Composite Index does not include Funds of Hedge Funds.

HFRI Macro Index consists of investment managers that trade a broad range of strategies in which the investment process is predicated on movements in underlying economic variables and the impact these have on equity, fixed-income, hard currency, and commodity markets. Managers employ a variety of techniques, both discretionary and systematic analysis, combinations of top-down and bottom-up theses, quantitative and fundamental approaches, and long- and short-term holding periods. Although some strategies employ RV techniques, macro strategies are distinct from RV strategies in that the primary investment thesis is predicated on predicted or future movements in the underlying instruments rather than realization of a valuation discrepancy between securities. In a similar way, while both macro and equity hedge managers may hold equity securities, the overriding investment thesis is predicated on the impact that movements in underlying macroeconomic variables may have on security prices, as opposed to equity hedge, in which the fundamental characteristics on the company are the most significant are integral to the investment thesis.

HFRI Event Driven Index maintains positions in companies currently or prospectively involved in corporate transactions of a wide variety, including but not limited to mergers, restructurings, financial distress, tender offers, shareholder buybacks, debt exchanges, security issuance, and other capital structure adjustments. Security types can range from most senior in the capital structure to most junior or subordinated and frequently involve additional derivative securities. Event driven exposure includes a combination of sensitivities to equity markets; credit markets; and idiosyncratic, company-specific developments. Investment theses are typically predicated on fundamental characteristics (as opposed to quantitative), with the realization of the thesis predicated on a specific development exogenous to the existing capital structure.

HFRI Relative Value Index maintains positions in which the investment thesis is predicated on realization of a valuation discrepancy in the relationship between multiple securities. Managers employ a variety of fundamental and quantitative techniques to establish investment theses, and security types range broadly across equity, fixed income, derivative, or other security types.

HFRI Equity Hedge (Total) Index consists of investment managers that maintain positions both long and short in primarily equity and equity derivative securities. A wide variety of investment processes can be employed to arrive at an investment decision, including both quantitative and fundamental techniques; strategies can be broadly diversified or narrowly focused on specific sectors and can range broadly in terms of levels of net exposure, leverage employed, holding period, concentrations of market capitalizations, and valuation ranges of typical portfolios. Equity hedge managers would typically maintain at least 50% (and may in some cases be substantially entirely invested) in equities, both long and short.

Index definitions (continued)

HFRX Global Hedge Fund Index is designed to be representative of the overall composition of the hedge fund universe. It is comprised of all eligible hedge fund strategies; including but not limited to convertible arbitrage, distressed securities, equity hedge, equity market neutral, event driven, macro, merger arbitrage, and relative value arbitrage. The strategies are asset weighted based on the distribution of assets in the hedge fund industry.

Wilshire Liquid Alternative Equity Hedge Index measures the performance of the equity hedge strategy component of the Wilshire Liquid Alternative Index. Equity hedge investment strategies predominantly invest in long and short equities.

Wilshire Liquid Alternative Relative Value Index measures the performance of the relative value strategy component of the Wilshire Liquid Alternative Index. Relative value strategies are focused on the valuation discrepancy in the relationships between markets or securities.

Wilshire Liquid Alternative Global Macro Index measures the performance of the global macro strategy component of the Wilshire Liquid Alternative Index. Global macro strategies predominantly invest in situations driven by the macro-economic environment across the capital structure as well as currencies and commodities.

Wilshire Liquid Alternative Event Driven Index measures the performance of the event driven strategy component of the Wilshire Liquid Alternative Index. Event driven strategies predominantly invest in companies involved in corporate transactions such as mergers, restructuring, distressed, buy backs, or other capital structure changes.

Private capital:

Private equity:

Private equity: Cambridge Associates LLC U.S. Private Equity Index® - The Cambridge Associates LLC U.S. Private Equity Index® uses a horizon calculation based on data compiled from more than 1,400 institutional-quality buyout, growth equity, private equity energy, and subordinated capital funds formed between 1986 and 2017. The funds included in the index report their performance voluntarily and therefore the index may reflect a bias towards funds with records of success. Funds report unaudited quarterly data to Cambridge and Associates when calculating the index. The index is not transparent and cannot be independently verified because Cambridge Associates does not identify the funds included in the index. Because Cambridge Associates recalculates the index each time a new fund is added, the historical performance of the index is not fixed, can't be replicated and will differ over time from the day presented. The returns shown are net of fees, expenses and carried interest. Index returns do not represent fund performance.

Private debt:

Private credit: ILPA (Institutional Limited Partners Association) Private Markets Benchmark - Private Credit Fund Index is a horizon calculation based on data compiled from 269 private credit funds (credit opportunities and subordinated capital funds), including fully liquidated partnerships, formed between 1986 and 2017. The pooled horizon return is net of fees, expenses, and carried interest. The funds in the index are exclusively those that ILPA members have invested in; the goal of the ILPA private markets benchmark effort is to create a private markets benchmark that represents the investible universe and fund performance for global, institutional investors. The benchmark is issued on a quarterly basis, approximately 140 calendar days after quarter end. All data included in the ILPA Benchmark is derived from the quarterly and annual audited financial statements that general partners produce for their limited partners. Performance statistics include rates of return (net IRR & public market equivalents) and investment multiples (DPI, RVPI and TVPI). These statistics are expressed in terms of time period (since-inception, year-to-date, etc.), quartile ranking, vintage year, geography and strategy. As the benchmark same size expands, the number of statistics, composites and types of analysis is expected to increase. Index returns do not represent fund performance.

Private real assets:

Private real estate: NCREIF Property Index is a quarterly time series composite total rate of return measure of investment performance of a very large pool of individual commercial real estate properties acquired in the private market for investment purposes only.

Farmland: NCREIF Farmland Index is a quarterly time series composite return measure of investment performance of a large pool of individual farmland properties acquired in the private market for investment purposes only.

Timberland: NCREIF Timberland Index is a quarterly time series composite return measure of investment performance of a large pool of individual timber properties acquired in the private market for investment purposes only.

Index definitions (continued)

MLPs:

Alerian MLP Index is the leading gauge of energy infrastructure Master Limited Partnerships (MLPs). The capped, float-adjusted, capitalization-weighted index, whose constituents earn the majority of their cash flow from midstream activities involving energy commodities, is disseminated real-time on a price-return basis (AMZ) and on a total-return basis (AMZX).

Energy:

S&P Supercomposite Energy Index measures those companies included in the S&P Composite 1500 that are classified as members of the GICS® Energy sector.

S&P Global Clean Energy Index measures the performance of global companies that represent the listed clean energy universe.

Economic indexes:

Institute for Supply Management (ISM) Manufacturing Index® is a composite index based on the diffusion Indexes of five of the Indexes with equal weights: new orders (seasonally adjusted), production (seasonally adjusted), employment (seasonally adjusted), supplier deliveries (seasonally adjusted), and inventories. An index value over 50 indicate expansion; below 50 indicates contraction. The values for the index can be between 0 and 100.

Institute for Supply Management (ISM) Non-Manufacturing Index is based on surveys of more than 400 non-manufacturing firms by the Institute for Supply Management. The ISM Non-Manufacturing Index tracks economic data.

Consumer Price Index (CPI) is a measure that examines the weighted average of prices of a basket of consumer goods and services, such as transportation, food, and medical care. It is calculated by taking price changes for each item in the predetermined basket of goods and averaging them.

Producer Price Index (PPI) program measures the average change over time in the selling prices received by domestic producers for their output.

IA SBBI U.S. Inflation Index is a custom unmanaged index designed to track the U.S. inflation rate.

NFIB Small Business Optimism Index is the small business optimism index compiled from a survey that is conducted each month by the National Federation of Independent Business (NFIB) of its members. The index is a composite of 10 seasonally adjusted components based on questions on the following: plans to increase employment, plans to make capital outlays, plans to increase inventories, expect economy to improve, expect real sales higher, current inventory, current job openings, expected credit conditions, now a good time to expand, and earnings trend.

Consumer Confidence Index (CCI) is designed to measure consumer confidence, which is defined as the degree of optimism on the state of the economy that consumers are expressing through their activities of savings and spending. Global consumer confidence is not measured.

Housing Marketing Index (HMI): The National Association of Home Builders (NAHB) Housing Market Index (HMI) is a weighted, seasonally adjusted statistic derived from ratings for present single-family sales, single-family sales in the next six months, and buyers traffic. A rating of 50 indicates that positive responses received from builders is about the same as the number of negative responses; ratings higher than 50 indicate more positive responses.

U.S. Dollar Index (USDX/DXY) measures the value of the U.S. dollar relative to majority of its most significant trading partners. This index is similar to other trade-weighted Indexes, which also use the exchange rates from the same major currencies.

West Texas Intermediate (WTI) is a light, sweet (that is, low sulfur) crude oil and is the main type of U.S. crude oil traded in U.S. futures markets.

The IFO Germany Manufacturing Export Expectations is a composite index based on a survey of manufacturers, builders, wholesalers and retailers. The index is compiled by the Ifo Institute for Economic Research.

The National Financial Conditions Index (NFCI) is constructed to have an average value of zero and a standard deviation of one over a sample period extending back to 1973. Positive values of the NFCI indicate financial conditions that are tighter than on average, while negative values indicate financial conditions that are looser than on average.

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