Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

3RD QUARTER 2020

Investment Landscape

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Annual outlooks

2020 REAL ASSETS OUTLOOK

The ongoing impact of COVID-19 on the global economy has dramatically altered our outlook on inflation, risk and asset class returns. Going into 2020, valuations for many risk assets were rich and expected returns were low. In a matter of weeks, we've seen a broad market sell-off, improving valuations.

— A combination of poor performance, high volatility and ESG-related concerns are driving a shift in investor preference within real assets.
— The shutdowns of economies around the globe will likely have lasting impacts and create some stress and distress for affected assets and those with highly levered capital structures.
— Negative impacts in real estate will likely take several quarters to flow through the appraisal cycle on the private side, creating challenges for existing assets and opportunities for fresh capital.

Topics of interest

BROADENING DIVERSITY CONSIDERATION

CIO Ian Toner, CFA, and Public Markets Managing Director Marianne Feeley, CFA, outline broader elements of diversity – beyond ownership – that may be used to characterize the demographic qualities of an investment firm. It frames the broader approach to understanding diversity that we are adapting at Verus, which is an integral part of our process of collecting and using information about investment managers.

STRATEGIC LIQUIDITY

An analysis of illiquid allocations across a universe of portfolios suggests that institution type and size may be the determining factors in how much capital is allocated to illiquid assets. We believe illiquid allocations should be based on the financial situation of the institution. Verus has developed a framework to analyze the impact illiquid asset programs have on the overall portfolio.

Sound thinking

KNOWING WHERE YOU'RE GOING MATTERS

CIO Ian Toner, CFA, and Public Markets Managing Director Marianne Feeley, CFA, outline broader elements of diversity – beyond ownership – that may be used to characterize the demographic qualities of an investment firm. It frames the broader approach to understanding diversity that we are adapting at Verus, which is an integral part of our process of collecting and using information about investment managers.

Table of contents

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2nd quarter summary

THE ECONOMIC CLIMATE

— U.S. GDP grew at a -9.5% rate year-over-year in Q2 (-32.9% quarterly annualized rate). The contraction consisted of decreased consumer spending, exports, inventory investment, fixed investment, as well as state and local government expenditures. Federal government spending partly offset the slowdown. ***p. 11***

— The U.S. labor market experienced a historic shock in Q2, as unemployment jumped from 4.4% in March to 14.7% in April, then recovered partially to 11.1% in June. Recent labor market data have beat expectations materially, but the severity of the shock is notable. A majority of the unemployed have reported their job losses as temporary. It will be important to watch what portion of these losses are indeed temporary rather than permanent. ***p. 13***

PORTFOLIO IMPACTS

— Most major equity benchmarks are within 15% of all-time highs, despite major damage that COVID-19 has inflicted on the global economy. Some of this damage has been mitigated by government support, but some damage is likely yet to be felt. ***p. 28***

— U.S. core inflation fell steeply from 2.1% in March to 1.2% in June, while food prices have risen. COVID-19 has led to a significant rise in at-home meal preparation (greater demand for certain items), while reportedly negatively impacting food processing facilities (less supply). ***p. 12***

THE INVESTMENT CLIMATE

— The Federal Reserve continued to roll out the litany of support programs that were announced in the first quarter. The Fed's balance sheet grew from $5.3 trillion to $7.1 trillion over the second quarter. ***p. 23***

— Moves in the CBOE VIX Index moderated in June. The long-term average of the index is near 19. It has remained above that level since February, reaching a high point of 85 on March 18th, and closing June at 30. ***p. 36***

— The Fed expanded the list of eligible securities for purchase to include corporate debt. While the Fed will primarily target investment grade debt securities, it will also buy some non-investment grade debt from "fallen angels" which were investment-grade prior to the pandemic. ***p. 23***

ASSET ALLOCATION ISSUES

— U.S. equities delivered an incredible comeback, following a sudden and significant sell-off in March. The S&P 500 rallied +20.5% in the second quarter, bringing year-to-date performance to -3.1%, and positive +7.5% over the past twelve months. ***p. 30***

— The U.S. dollar weakened in Q2, falling -2.3%. The market recovery (less demand for safe-haven currencies) and materially lower U.S. interest rates (less attractive U.S. dollar) have likely contributed to depreciation. ***p. 39***

A mildly underweight risk stance appears appropriate in today's environment

We remain watchful of the COVID-19 second wave and its impact on economic reopening

What drove the market in Q2?

"The second wave of coronavirus: How bad will it be as lockdowns ease?"

U.S. DAILY NEW CONFIRMED COVID-19 CASES

1/31	2/29	3/31	4/30	5/31	6/30
2	8	26,169	29,419	19,665	45,596

Article Source: The Philadelphia Inquirer, May 6th, 2020

"Early results from Moderna coronavirus vaccine trial show participants developed antibodies against the virus"

MODERNA U.S. EQUITY SHARE PRICE

1/31	2/29	3/31	4/30	5/31	6/30
\$20.51	\$25.93	\$29.95	\$45.99	\$61.50	\$64.21

Article Source: CNN, May 18th, 2020

"Nasdaq erases losses for 2020 as mega-cap tech rallies offset coronavirus drag"

NASDAQ COMPOSITE INDEX TOTAL RETURN MINUS S&P 500 TOTAL RETURN

Jan	Feb	Mar	Apr	May	Jun
+2.1%	+2.0%	+2.3%	+2.7%	+2.1%	+4.1%

Article Source: Business Insider, May 7th, 2020

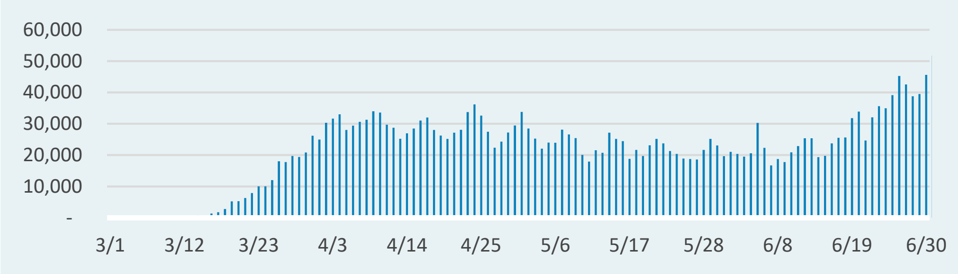
"How China's national security law could change Hong Kong forever"

HONG KONG VISITOR ARRIVALS (YEAR OVER YEAR CHANGE)

Dec	Jan	Feb	Mar	Apr	May
-51.5%	-52.7%	-96.4%	-98.6%	-99.9%	-99.9%

Article Source: CNBC, July 1st, 2020

DAILY NEW COVID-19 CASES (UNITED STATES)

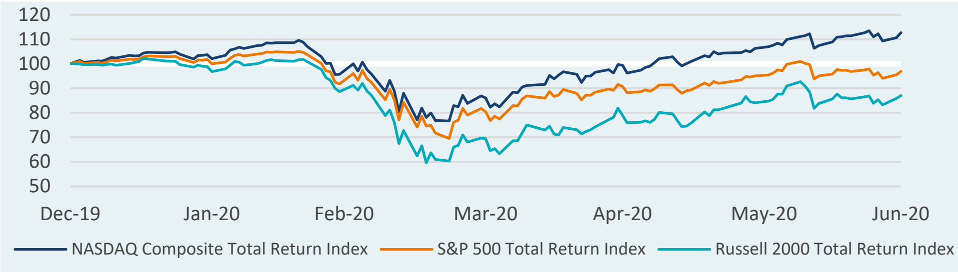


Source: Bloomberg, as of 6/30/20

MODERNA INC. SHARE PRICE

Source: Bloomberg, as of 6/30/20

U.S. EQUITY INDEX PERFORMANCE (INDEXED 12/31/2019=100)



Source: NASDAQ, Standard and Poor's, FTSE Russell, Bloomberg, as of 6/30/20

Economic environment

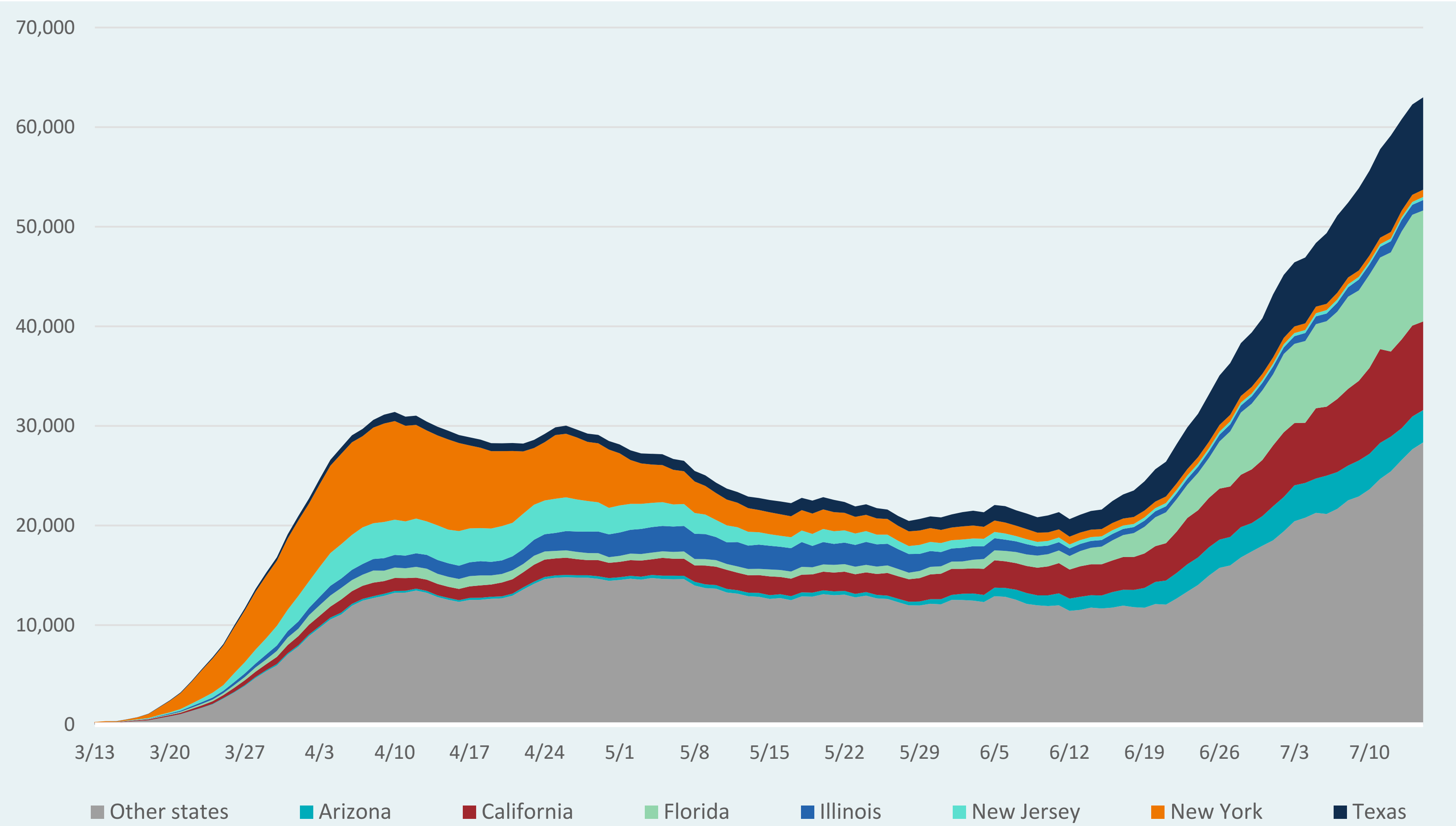
U.S. economics summary

- U.S. GDP grew at a -9.5% rate year-over-year in Q2 (-32.9% quarterly annualized rate). The contraction consisted of decreased consumer spending, exports, inventory investment, fixed investment, as well as state and local government expenditures. Federal government spending partly offset the slowdown.
- As of June 29th there were 34 states with a transmission rate of COVID-19 above 1.0, an indication that the virus continues to spread exponentially. Southern states and Sun Belt states are in retreat—taking lockdown steps reminiscent of March and April—only weeks after governors began to reopen their economies.
- The U.S. labor market experienced a historic shock in Q2 as unemployment jumped from 4.4% in March to 14.7% in April, then recovered partially to 11.1% in June.
- U.S. core inflation exhibited a steep drop from 2.1% in March to 1.2% in June. Headline inflation also slowed from 1.5% to 0.6%, pushed lower by the recent decline in energy prices. On the other hand, food prices have been rising—specifically meats, poultry, fish and eggs—due in large part to interruptions at processing plants.
- The Bloomberg Consumer Comfort Index experienced a dramatic weakening year-to-date, falling from a near-record high of 67.3 in late January to 34.7 in May, then ending June at 43.3.
- It has been reported that 8.6% of all mortgages in the U.S. are in forbearance. To put this number into perspective, during the 2008-2009 housing crisis the mortgage default rate reached approximately 10%. If a large portion of loans in forbearance later face foreclosure, this could put significant pressure on the housing market.

	Most Recent	**12 Months Prior**
GDP *(YoY)*	(9.5%) *6/30/20*	2.0% *6/30/19*
Inflation *(CPI YoY, Core)*	1.2% *5/31/20*	2.0% *5/31/19*
Expected Inflation *(5yr-5yr forward)*	1.5% *6/30/20*	1.8% *6/30/19*
Fed Funds Target Range	0% – 0.25% *6/30/20*	2.25% – 2.50% *6/30/19*
10 Year Rate	0.7% *6/30/20*	2.0% *6/30/19*
U-3 Unemployment	11.1% *6/30/20*	3.7% *6/30/19*
U-6 Unemployment	18.0% *6/30/20*	7.2% *6/30/19*

COVID-19 update

U.S. DAILY NEW CASES DECOMPOSITION (7-DAY TRAILING AVERAGE)



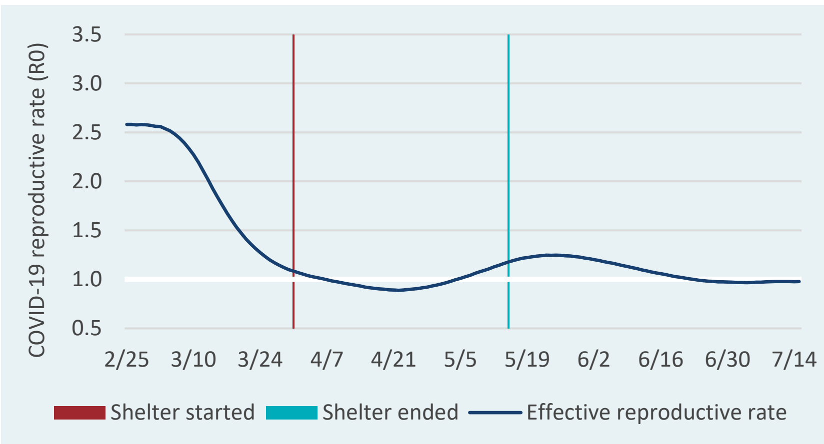
Source: Bloomberg, as of 7/15/20

Toward the end of June, daily case growth began to indicate the emergence of a second wave of COVID-19

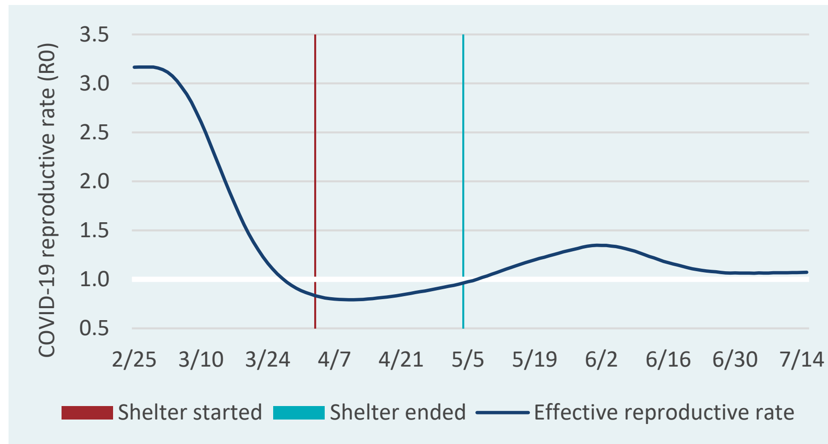
Most of the resurgence has occurred across a small group of U.S. states

Reproductive rates (R0) by state hot spot

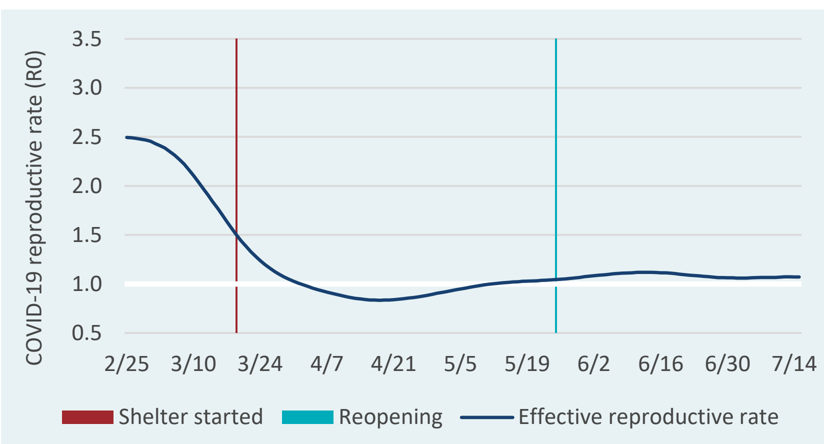
ARIZONA



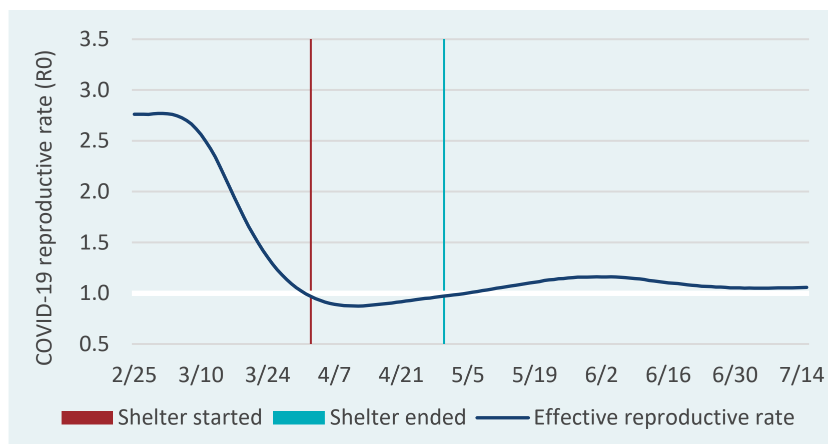
FLORIDA



CALIFORNIA



TEXAS

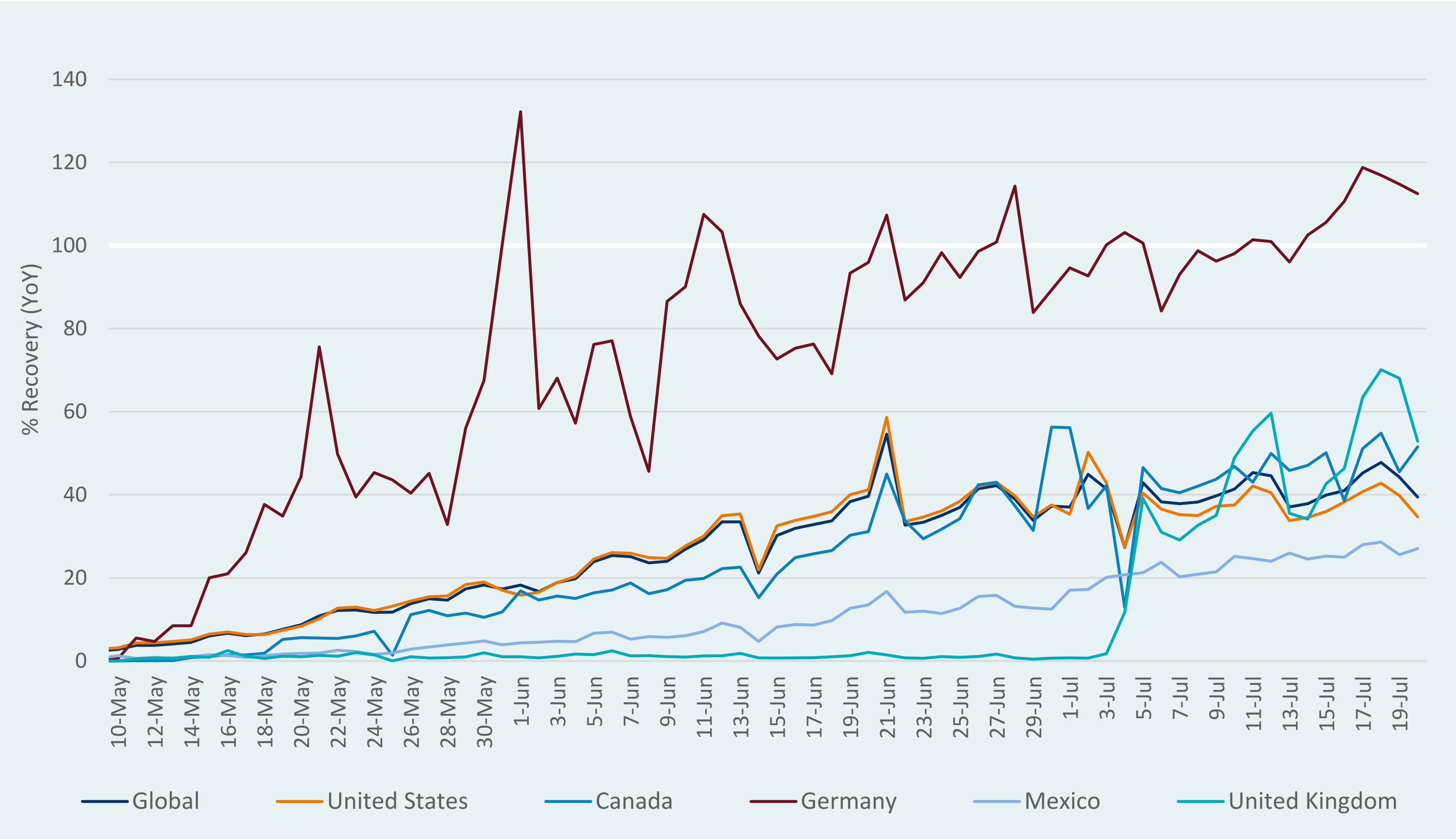


In many states around the country, resurgences in R0 rates above 1.0 began prior to the formal ending of shelter-in-place orders

Source: rt.live, as of 7/15/20. The R0 rate represents the average number of additional people each infected person will transmit the virus to. R0 rates below 1.0 indicate the virus will decline and eventually die out.

Restaurants reopening

RECOVERY OF RESTAURANT INDUSTRY



Source: OpenTable, as of 7/20/20 – Number of meals served for a given week relative to the same week of the prior year

Restaurant activity recovered notably from May through June, but remains far below pre-pandemic levels

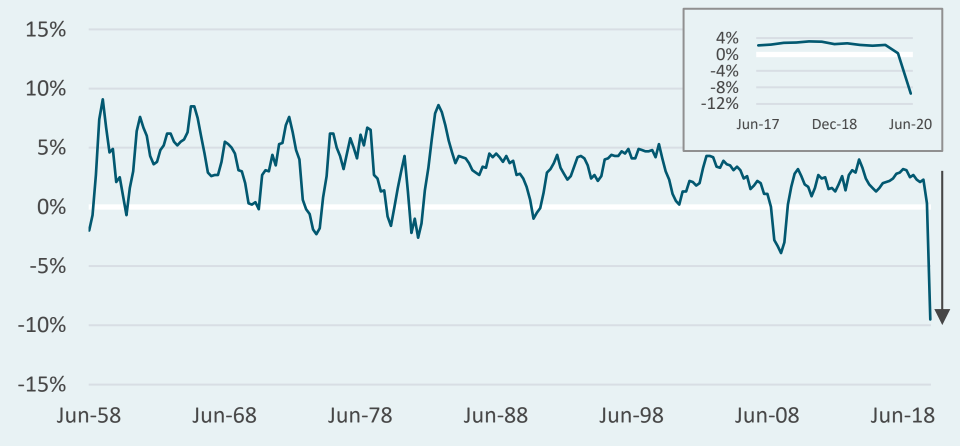
GDP growth

U.S. GDP grew at a -9.5% rate year-over-year in Q2 (-32.9% quarterly annualized rate). The contraction consisted of decreased consumer spending, exports, inventory investment, fixed investment, as well as state and local government expenditures. Federal government spending partly offset the slowdown.

The United States runs a significant trade deficit, and imports far more than it exports in U.S. dollar terms. As a result, the slowdown in global trade in the second quarter provided a tailwind for GDP growth as exports fell less in nominal terms than imports, leading to a reduction in the size of the trade deficit. Additionally, the recent inventory drawdowns may leave room for inventory builds to contribute positively to GDP growth in the coming quarters. Still, consumption accounts for roughly 70% of GDP. The financial health of the consumer and the willingness of the consumer to spend will likely determine the shape of the recovery over the remainder of the year.

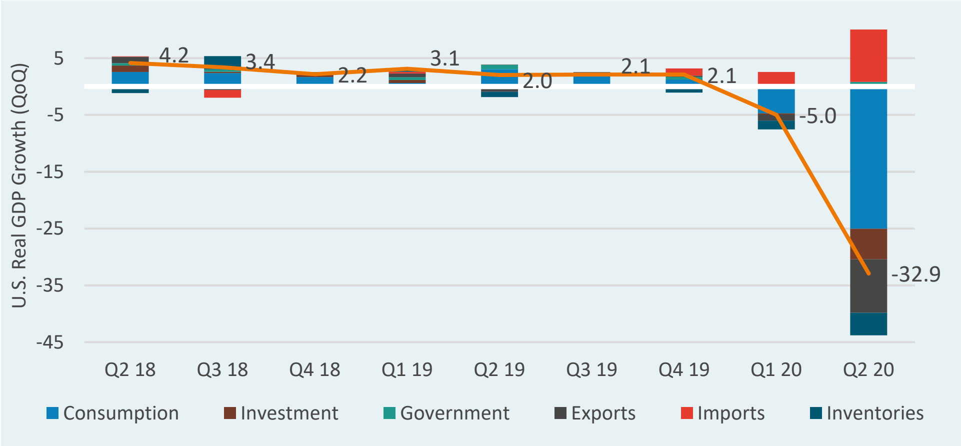
Thus far, fiscal support through the CARES Act and other packages have amounted to roughly 12% of U.S. GDP. Only Japan (42%) has spent more as a percentage of GDP. Moving forward into Q3, the ability and willingness of Congress to provide further accommodation will feature prominently in discussions around the economic outlook.

U.S. REAL GDP GROWTH (YOY)



Source: Bloomberg, as of 6/30/20

U.S. GDP GROWTH ATTRIBUTION



Source: BEA, annualized quarterly rate, as of 6/30/20

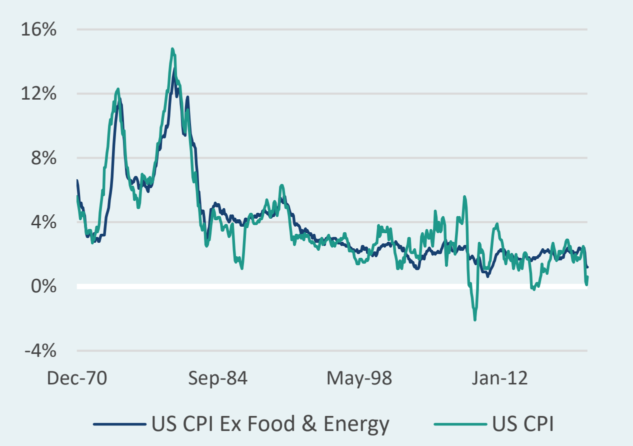
Inflation

U.S. core inflation exhibited a steep drop from 2.1% in March to 1.2% in June. Headline inflation also slowed from 1.5% to 0.6%, pushed lower by the recent decline in energy prices. On the other hand, food prices have been increasing—specifically meats, poultry, fish and eggs. COVID-19 has led to a significant rise in at-home meal preparation (greater demand for certain items), while reportedly interrupting food processing plants (less supply). Both effects may be contributing to recent price increases.

The 10yr U.S. TIPS inflation breakeven rate recovered to 1.3% from a low of 0.5% on March 19th. The breakeven rate is at a level not seen since 2016 at the depths of an oil crash that sparked broad fears of deflation.

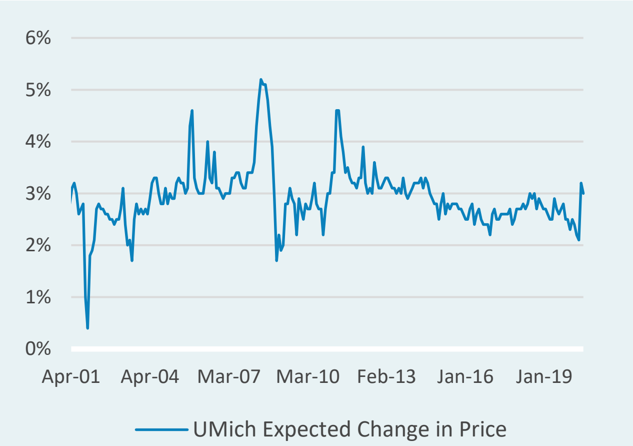
Interestingly, consumer inflation surveys indicate that expectations jumped significantly from 2.1% in April to 3.0% in June. Investors have engaged in an ongoing debate regarding the possible direction of inflation throughout the economic recovery. There seem to be reasonable arguments for inflationary pressures, but also for deflationary pressures, as a result of the COVID-19 induced economic slowdown.

U.S. CPI (YOY)



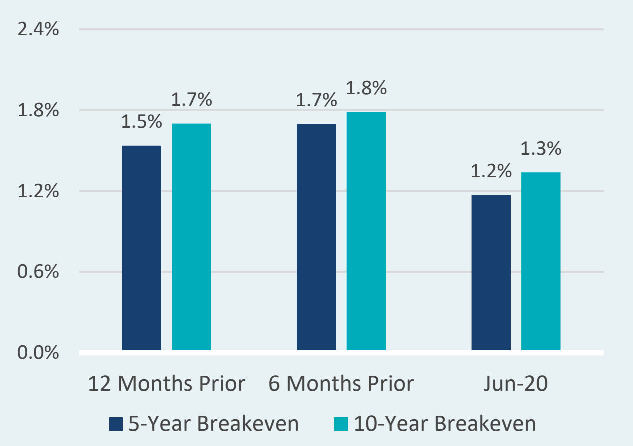
Source: Bloomberg, as of 6/30/20

CONSUMER INFLATION EXPECTATIONS



Source: University of Michigan, as of 6/30/20

BREAKEVEN INFLATION RATES



Source: Bloomberg, as of 6/30/20

Labor market

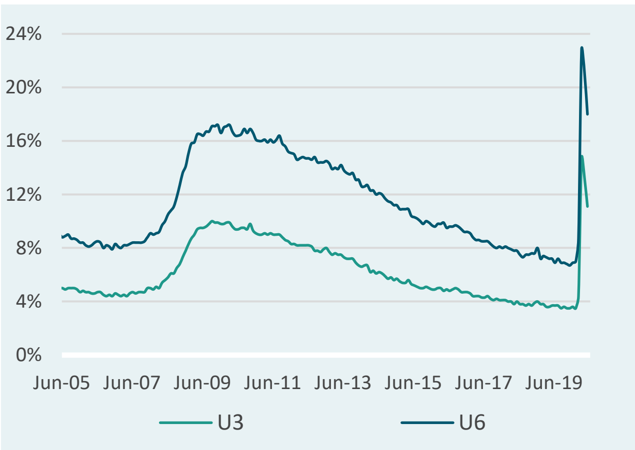
The U.S. labor market experienced a historic shock in Q2, as unemployment jumped from 4.4% in March to 14.7% in April, before recovering partially to 11.1% in June. However, many workers were not present at work but remained categorized as employed. If these workers were instead counted as jobless, the true unemployment rate may have reached 20% before recovering to around 12%. Although recent labor market data has generally beat expectations by a wide margin, the severity of the shock and current magnitude of dislocation is notable. Most of the unemployed have reported their joblessness to be temporary and believe that their employer will be calling them back to work.

It will be important to watch what portion of job losses are indeed temporary, and what portion end up being more permanent in nature.

Churn within the labor market has remained extremely elevated as businesses have contended with the constantly-evolving COVID-19 situation and its impacts on mandated social distancing controls. Additionally, some employers have decided to remain closed until the end of July to allow their employees the flexibility to receive an additional $600 in weekly unemployment benefits set to expire on July 31st.

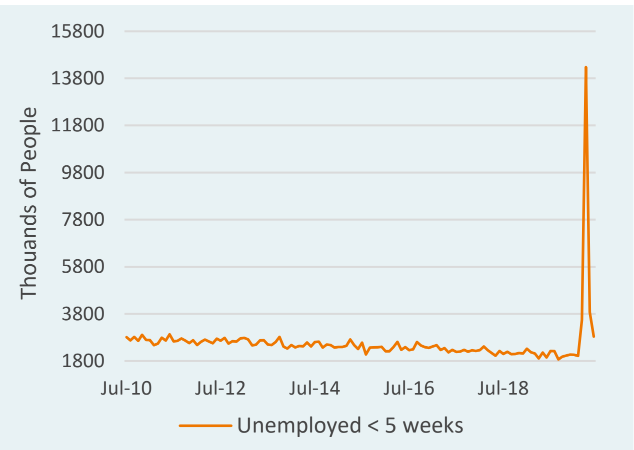
U.S. labor market experienced the largest negative shock in modern history

U.S. UNEMPLOYMENT



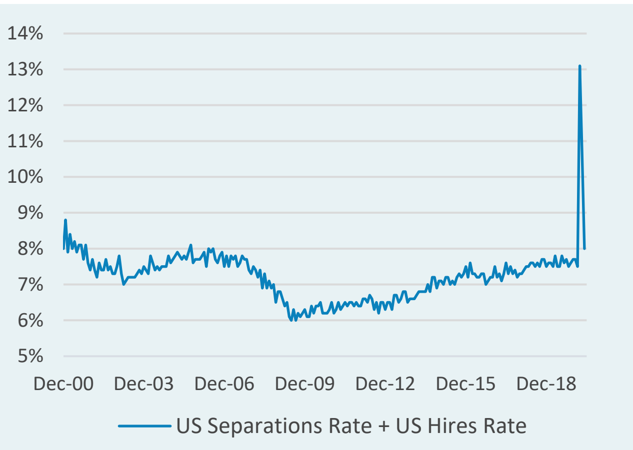
Source: FRED, as of 6/30/20

U.S. UNEMPLOYMENT DURATION



Source: U.S. Bureau of Labor Statistics, as of 6/30/20

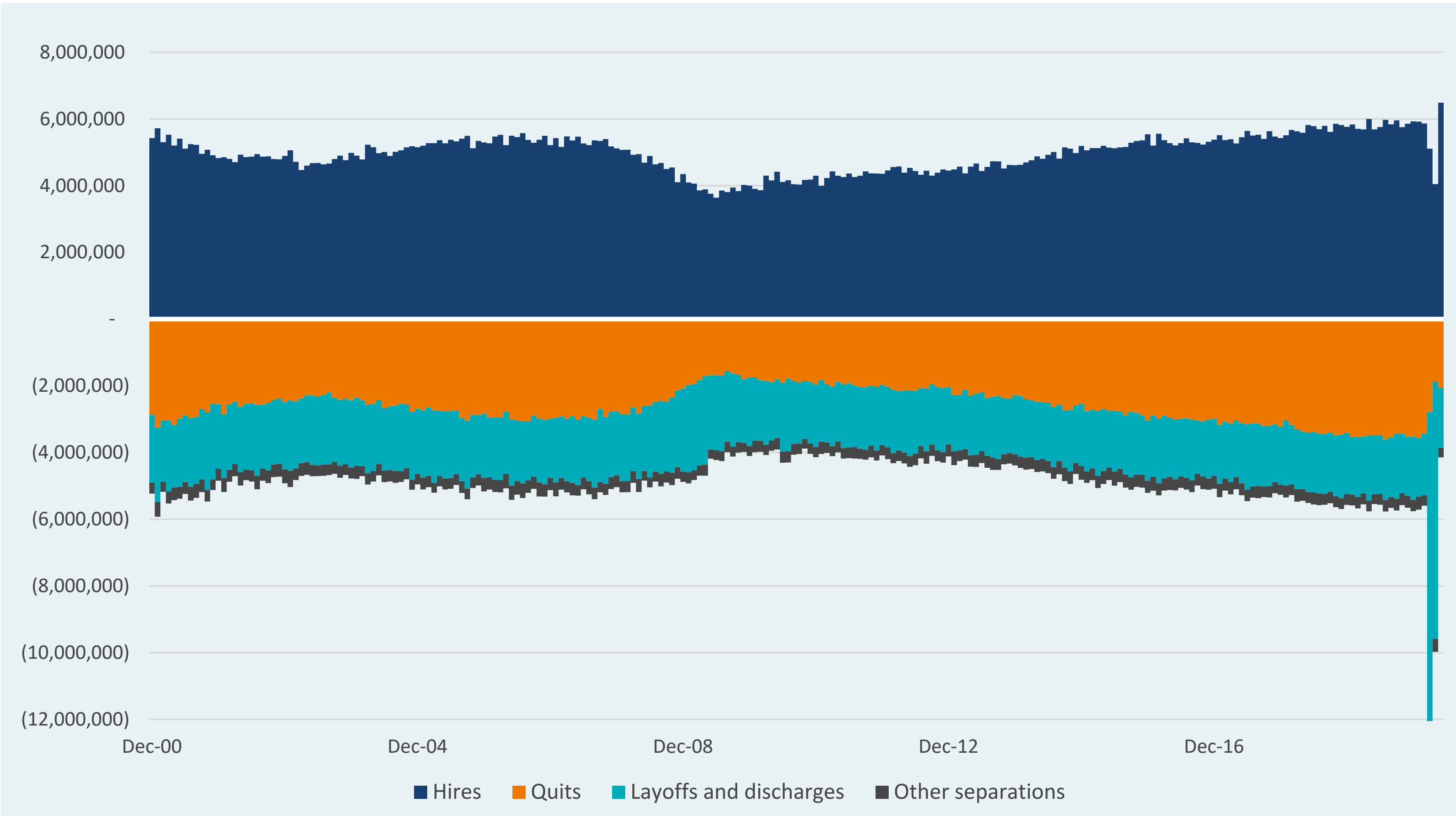
U.S. LABOR MARKET CHURN



Source: BLS, as of 5/31/20 – Chart illustrates the total number of U.S. workers departing work and starting new work

Labor market churn

MONTHLY JOB HIRES, QUITS, LAYOFFS & DISCHARGES, AND OTHER SEPARATIONS LEVELS

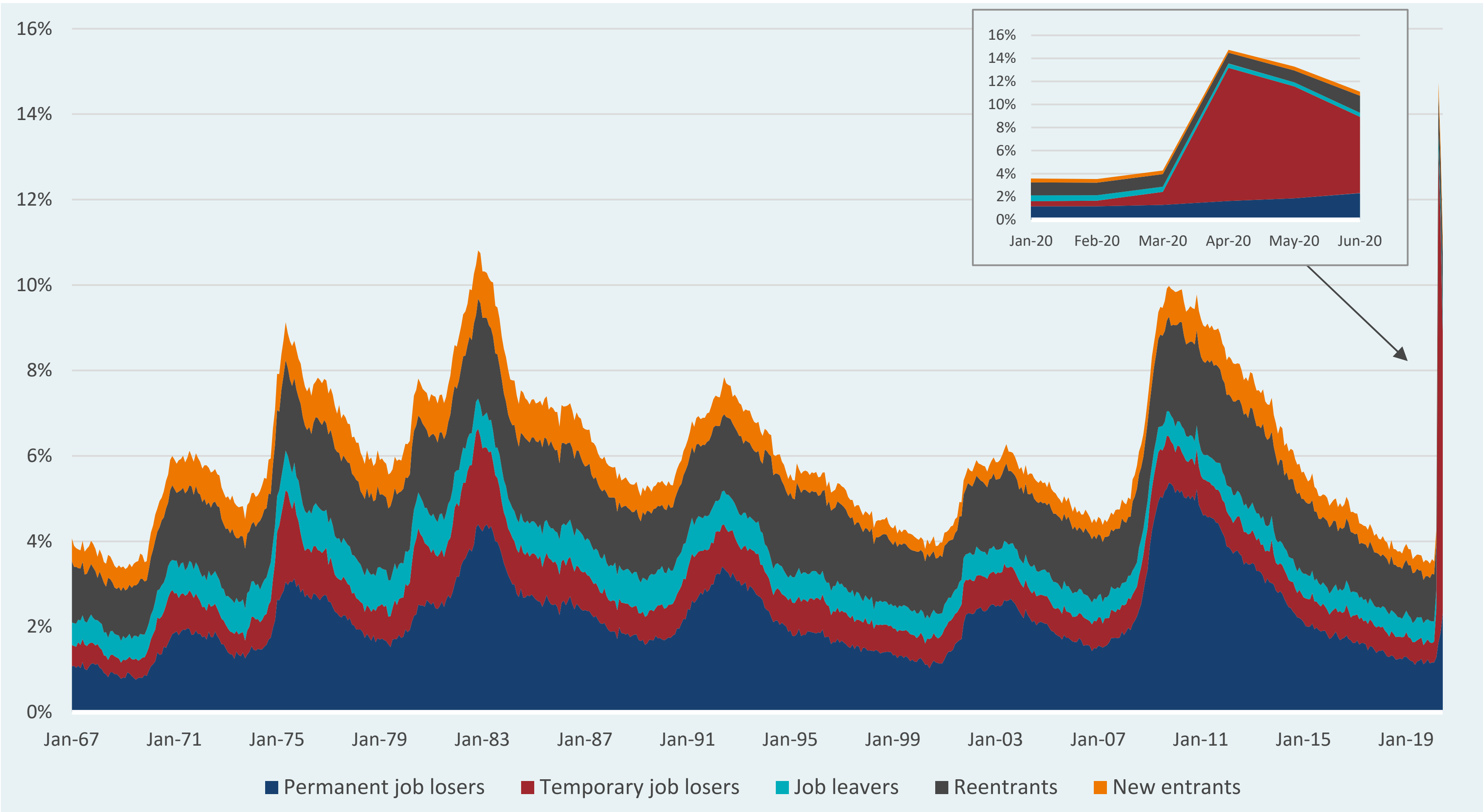


While voluntary separations (quits) have slowed, both hires and involuntary separations have spiked to record levels

Source: BLS, as of 5/31/20

Permanent job losses are increasing…

U-3 UNEMPLOYMENT RATE – CONTRIBUTION BY COHORT



Many temporarily unemployed workers have gone back to work

Some temporary job losses have become permanent, while many unemployed have reignited their job search

Source: BLS, as of 6/30/20

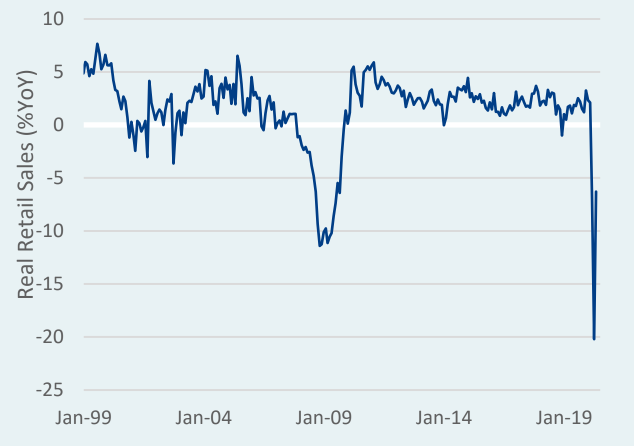
The consumer

The U.S. consumer has been the greatest support to moderate domestic economic growth in recent years. Consumers have also shown conservatism in their spending habits and restraint in the use of credit, with household balance sheets remaining robust. The economic slowdown resulted in a severe drop in spending—a drop-off in fact nearly double the size of the contraction experienced during the 2008-2009 Global Financial Crisis.

Between February and May, revolving U.S. consumer credit outstanding shrunk by about $104 billion to $996 billion, indicating that American consumers have been paying down their credit card debts significantly. Some of this deleveraging has been made possible by recent fiscal stimulus.

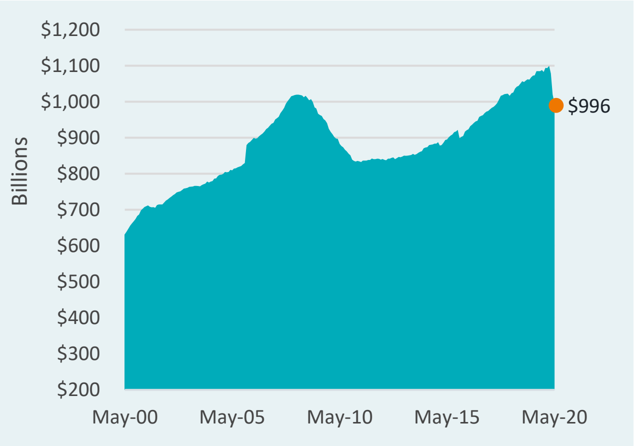
The U.S. personal savings rate reached 32% in April—the highest reading since its inception in the 1960s. The extreme conservativism shown recently has likely been fueled by uncertainty around job security, but also by a simple inability to spend as restaurants and businesses which typically are the recipients of discretionary spending have been forced to (or have willingly) closed their doors, and vacation plans have been delayed or canceled.

REAL RETAIL SALES GROWTH (YOY)



Source: FRED, as of 5/31/20

U.S. REVOLVING CREDIT OUTSTANDING



Source: Federal Reserve, as of 5/31/20

PERSONAL SAVINGS RATE

Source: FRED, as of 5/31/20

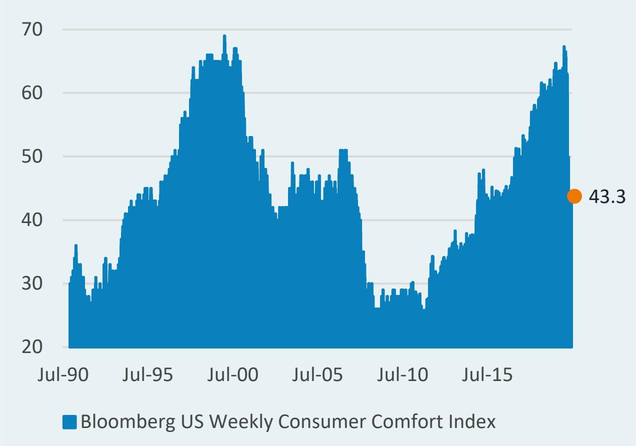
Sentiment

The Bloomberg Consumer Comfort Index attempts to gauge Americans' view on the economy, their personal financial situation, and buying conditions. The index experienced a dramatic weakening year-to-date, falling from a near-record high of 67.3 in late January to 34.7 in May, then ending June at 43.3.

The University of Michigan Consumer Sentiment Survey is similar in purpose to the Bloomberg index. The survey attempts to gauge attitudes about the business climate, personal finances, and spending conditions. This index also showed a significant weakening in Q2 which was comparable in magnitude to past U.S. economic slowdowns, falling from 101.0 in February to 71.8 in April, before partially rebounding to 78.1 in June. The rebound was reportedly supported by gains in employment. Few survey respondents anticipated favorable economic conditions anytime soon.

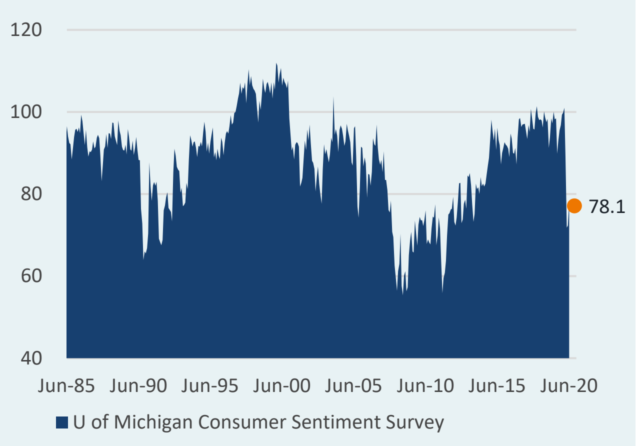
The Small Business Optimism Index has rebounded since the onset of COVID-19 and the subsequent economic slowdown. The index rose to 100.6, as many business owners reportedly expect sales to improve, remain optimistic about future business conditions, and generally expect the recession to be short-lived.

CONSUMER COMFORT



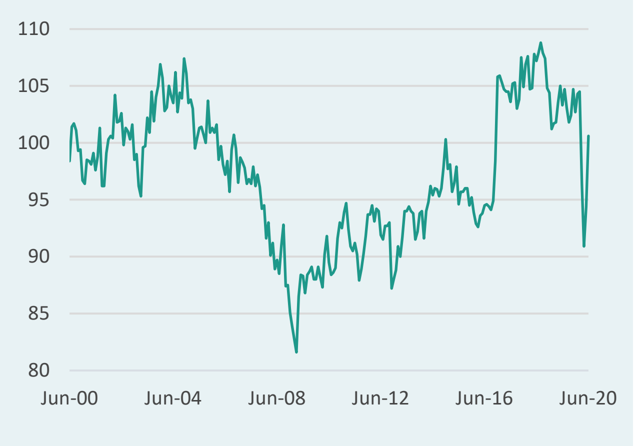
Source: Bloomberg, as of 6/30/20

CONSUMER SENTIMENT



Source: University of Michigan, as of 6/30/20

SMALL BUSINESS OPTIMISM



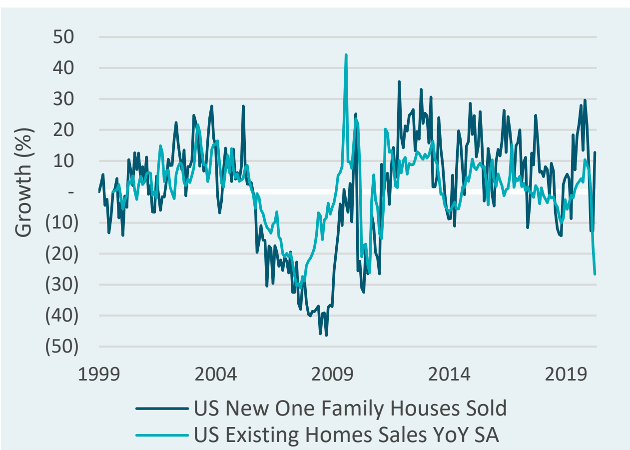
Source: NFIB, as of 6/30/20

Housing

Existing home sales slowed significantly in Q2, dropping -26.6% year-over-year in June. The 30-year fixed mortgage interest rate fell further, finishing the second quarter at 3.07%. Near record-low interest rates have likely boosted home demand, helping to mitigate the significant effects of the economic recession. Trends in the housing market are typically slower-moving and often lag economic downturns, which may mean the true impact of COVID-19 on the U.S. housing market has yet to be seen.

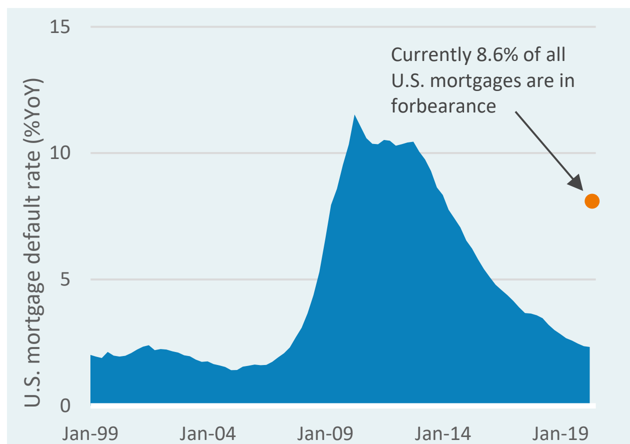
Under the new CARES Act, homeowners with federally-backed mortgages who have been affected by COVID-19 are able to request forbearance on mortgage payments for up to 180 days, with an option to extend for an additional 180 days. According to Black Knight, a mortgage data provider, 8.6% of all mortgages in the United States were in forbearance during late-June. To put this number into perspective, during the 2008-2009 housing crisis the mortgage default rate reached approximately 10%. If these loans in forbearance later face foreclosure, it could put significant pressure on the housing market.

U.S. HOME SALES (YOY)



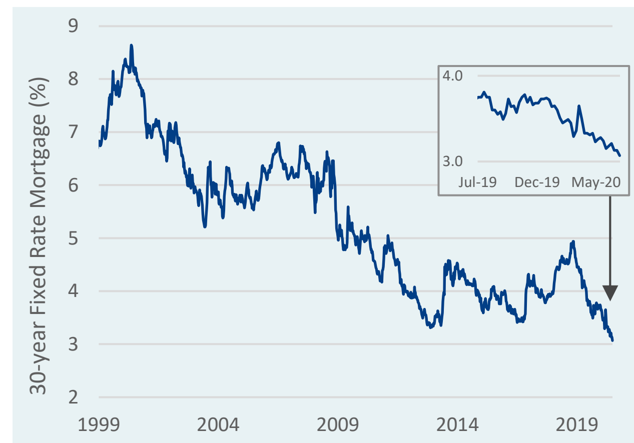
Source: FRED, as of 5/31/20

MORTGAGE DEFAULT RATE (%)



Source: FRED, as of 3/31/20

30YR FIXED RATE MORTGAGE



Source: FRED, as of 6/30/20

International economics summary

— In Q1, most international economies began contracting in what will likely turn out to be a global recession. The steady and stable economic expansion in recent years has shifted suddenly with the onset of COVID-19. The IMF now expects 2020 global GDP to fall -4.9%, followed by a +5.4% recovery in 2021.

— Policymakers in Brussels achieved unanimous approval on a €750 billion stimulus package to help support an economic recovery within the European Union. After much debate, officials decided to distribute €390 billion in the form of grants to member states hardest hit by the pandemic (Italy/Spain), and the other €360 in low-interest, non-concessionary loans for members of the bloc.

— U.S.-China relations were further strained Q2. The Trump administration placed restrictions on U.S. exports to Hong Kong in response to a Chinese law which effectively tightens control over the territory. The restrictions apply to only 2.2% of U.S. exports, but sanctions on China could unravel an already fragile agreement between the two global powers. U.S.-China tensions have been escalating and will warrant close monitoring in the coming months.

— Headline consumer prices fell materially over the second quarter as spending at brick-and-mortar stores, restaurants, and bars weakened alongside the implementation of social distancing controls. Continued broad-based price declines could soon lead to deflation risks for many economies.

— Since hitting lows of -304.6 in early May, the Citi Eurozone Economic Surprise Index rallied back to -99.8, indicating that economic data have been improving relative to median economist estimates. Continued relative strengthening could be supportive to the equity market.

Area	**GDP (Real, YoY)**	**Inflation (CPI, YoY)**	**Unemployment**
United States	(9.5%) *6/30/20*	0.1% *5/31/20*	11.1% *6/30/20*
Eurozone	(3.1%) *3/31/20*	0.3% *6/30/20*	7.4% *5/31/20*
Japan	(1.7%) *3/31/20*	0.3% *6/30/20*	2.9% *5/31/20*
BRICS Nations	(4.1%) *3/31/20*	4.9% *3/31/20*	5.1% *3/31/20*
Brazil	(0.3%) *3/31/20*	1.9% *5/31/20*	12.9% *5/31/20*
Russia	1.6% *3/31/20*	2.9% *5/31/20*	6.1% *5/31/20*
India	4.7% *12/31/19*	5.8% *3/31/20*	8.5% *12/31/17*
China	(6.8%) *3/31/20*	2.4% *5/31/20*	3.7% *3/31/20*

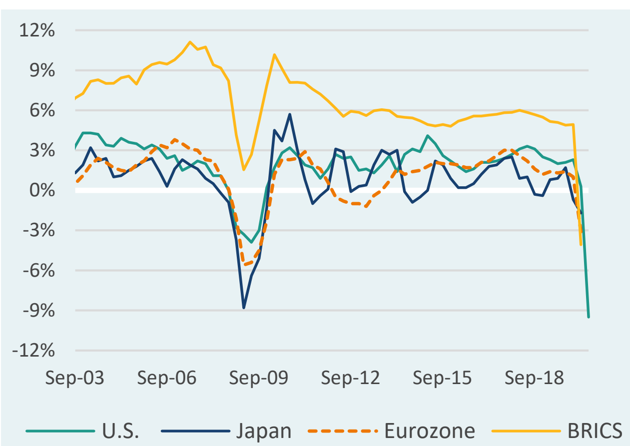
International economics

In the first quarter, most international economies began contracting, in what will likely turn out to be a global recession. The steady and stable economic expansion in recent years has shifted suddenly with the onset of COVID-19. The IMF now expects 2020 global GDP to fall -4.9%, followed by a +5.4% recovery in 2021.

Headline consumer prices fell internationally over Q2 as spending at brick-and-mortar stores, restaurants, and bars weakened alongside the implementation of social distancing controls. Continued broad-based price declines could soon lead to deflation risks for many economies. A large contributor to disinflation has been the recent sell-off in crude oil. The price of a barrel of Brent crude oil fell from around $80 per barrel at year-end to around $30 per barrel at the end of Q1, and bottomed at $22.90 on April 28th. Oil later recovered, due in part to certain economies beginning to gradually reopen, as well as price-supportive output cuts announced by OPEC+.

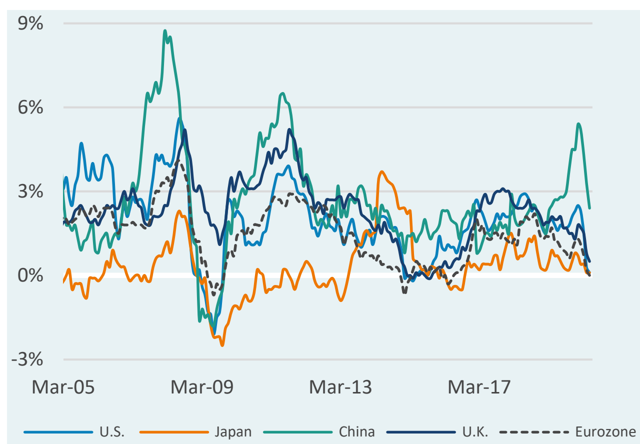
Policymakers in Brussels managed to achieve unanimous approval on a €750 billion stimulus package to help support an economic recovery within the European Union. After much debate, officials decided to distribute €390 billion in the form of grants to member states hardest hit by the pandemic (Italy/Spain), and the other €360 in low-interest, non-concessionary loans for members of the bloc.

REAL GDP GROWTH (YOY)



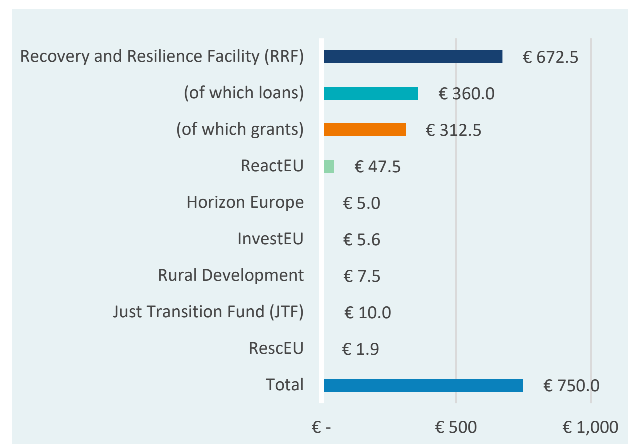
Source: Bloomberg, as of 6/30/20, or most recent release

INFLATION (CPI YOY)



Source: Bloomberg, inflation range of past 5 years, as of 5/31/20

E.U. STIMULUS PACKAGE (BILLIONS)



Source: European Council, as of 7/21/20

U.S.-China tensions escalating

2019

October 9th – The U.S. Secretary of State announces visa restrictions against Chinese officials accused of human rights abuses of ethnic populations in the Xinjiang region, including "mass detentions in internment camps; pervasive, high-tech surveillance; draconian controls on expressions of cultural and religious identities; and coercion of individuals to return from abroad to an often perilous fate in China."

2020

January 15th – U.S. and China sign the Phase One Deal. Agreements include the rollback of recently applied tariffs, increased purchases of certain goods, greater intellectual property protection, and limited currency practices.

January 31st – The U.S. implements a ban against all non-U.S. citizens who have visited China recently, amid COVID-19 fears.

March 18th – China ousts American journalists from the country, including the Wall Street Journal, the New York Times, and the Washington Post. China adds new requirements that these companies must share details of their operations with the Chinese government.

May 1st – The Trump Administration directs the Federal Retirement Thrift Investment Board, a retirement fund with over $500 billion in assets, to halt its plans to invest in Chinese equities. The U.S. Labor Secretary explained that these investments would put American funds "in risky companies that pose a threat to U.S. national securities."

May 15th – In a continued push to stop China's proliferation of its 5G technology, the U.S. Commerce Department amends export rules which cut off Huawei from global chip manufacturers that use American technology.

June 30th – China passes a sweeping new Hong Kong national security law, effectively eliminating free speech and the right to protest, and eroding the sovereignty of the country. Under the new law, any talk or protesting for Hong Kong independence, or of anti-China sentiment, can result in imprisonment.

June 30th – The United States revokes its special trade status with Hong Kong—a move which signals that Hong Kong is no longer viewed as autonomous from China. All U.S. trade with Hong Kong will effectively be treated as trade with China.

July 10th – President Trump comments that he is not focused on a Phase Two Trade Deal, and that the U.S. relationship with China has been "severely damaged" by the outbreak of COVID-19. The President continues his comments that China is at fault for failing to prevent the global spread of the virus.

July 13th – The U.S. announces new interpretations of China's recent claims in the South China Sea. "We are making clear: Beijing's claims to offshore resources across most of the South China Sea are completely unlawful, as is its campaign of bullying to control them." —Secretary of State Mike Pompeo

July 14th – The U.S. Navy conducts a freedom of navigation operation near the contested Spratly Islands, and sends a guided missile destroyer into waters which China claims as its own.

July 22nd – The U.S. orders China to close its consulate in Houston, Texas, "in order to protect American intellectual property and Americans' private information" said U.S. State Department spokeswoman Morgan Ortagus.

Fixed income rates & credit

Interest rate environment

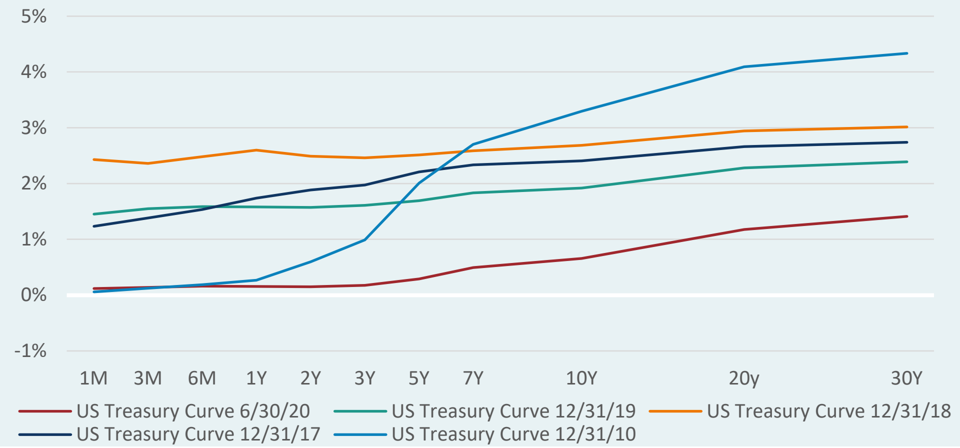
- The Federal Reserve continued to roll out the litany of support programs it announced in the first quarter. The Fed's balance sheet grew from $5.3 trillion to $7.1 trillion over the second quarter.
- It appears the Federal Reserve may implement a yield curve control policy as a component of its policy toolkit. At the June Fed meeting, officials acknowledged that while setting intermediate-term yield caps may help strengthen short-term rate guidance, they remained concerned about several potential implications of beginning down that path.
- The Fed also expanded the list of eligible securities for purchase through its Primary and Secondary Market Credit Facilities to include corporate debt, either directly through companies or through exchange-traded funds. The Fed indicated that it would primarily target investment grade debt securities, and that it would also purchase certain non-investment grade debt from "fallen angels" which held investment-grade debt ratings prior to the pandemic.
- The European Central Bank increased the size of its Pandemic Emergency Purchase Programme from the initial €750 billion to a total of €1.35 trillion. The ECB will now be able to deploy the funds in a "flexible manner over time, across asset classes and among jurisdictions" through June 2021, which may help reduce borrowing costs.
- Real yields continued to decline around the globe as nominal sovereign bond yields were largely unchanged and longer-term inflation expectations recovered.
- Emerging market debt yields fell considerably in the second quarter, likely supported by disinflationary effects of the sell-off in commodities which emboldened central bankers to adopt more accommodative policy.

Area	Short Term (3M)	10-Year
United States	0.13%	0.66%
Germany	(0.56%)	(0.46%)
France	(0.52%)	(0.11%)
Spain	(0.49%)	0.46%
Italy	(0.29%)	1.26%
Greece	0.32%	1.20%
U.K.	0.01%	0.17%
Japan	(0.17%)	0.02%
Australia	0.21%	0.87%
China	1.74%	2.84%
Brazil	2.04%	6.83%
Russia	4.57%	5.92%

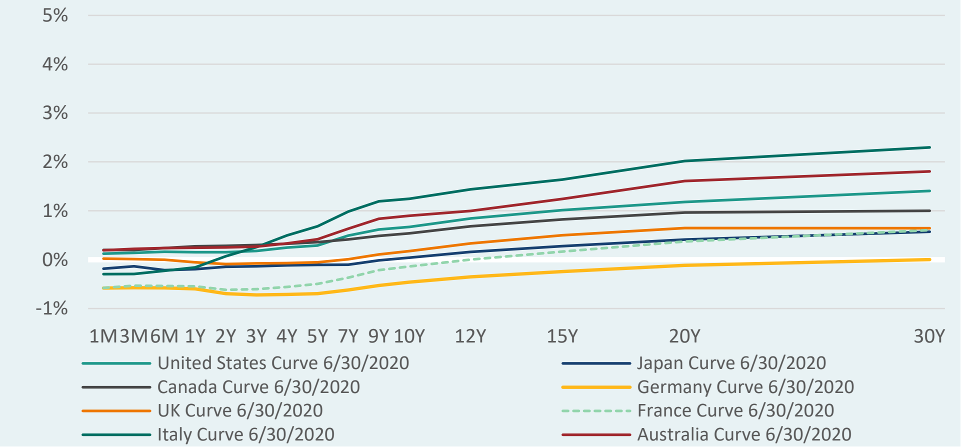
Source: Bloomberg, as of 6/30/20

Yield environment

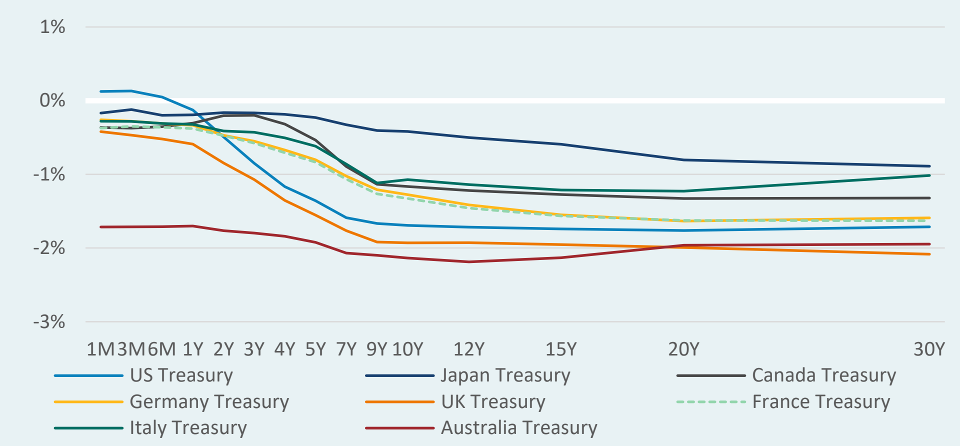
U.S. YIELD CURVE



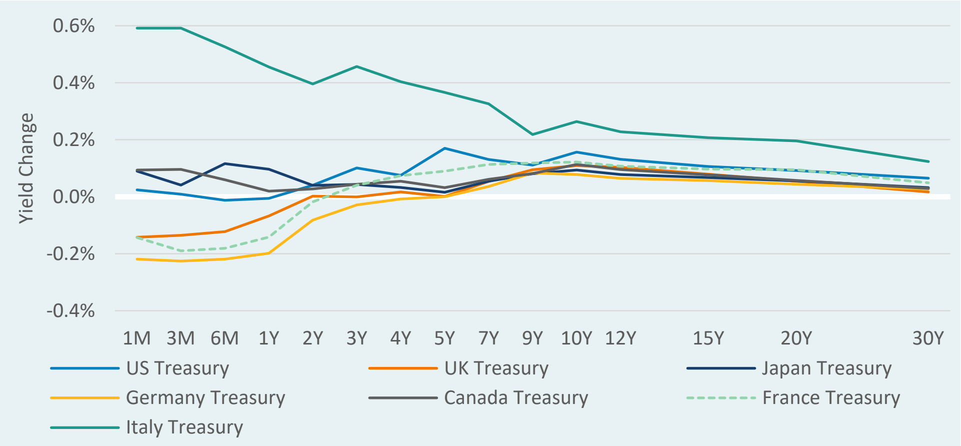
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 6/30/20

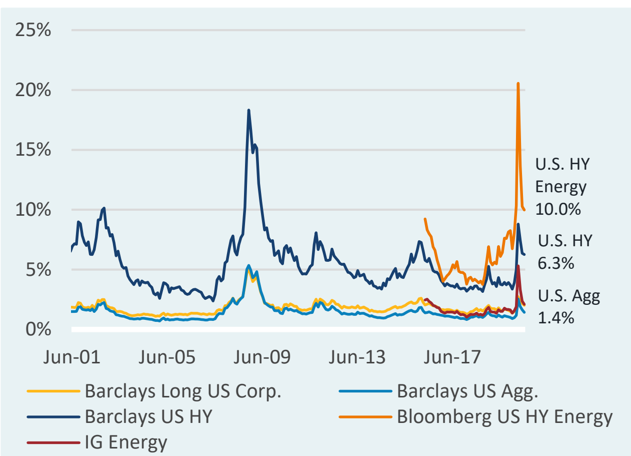
Credit environment

Despite historically weak economic data releases throughout Q2, a significant degree of confidence and liquidity was restored to credit markets due to continued support from the Federal Reserve, which ended the quarter with nearly $10 billion in corporate debt on its balance sheet. Accordingly, credit markets displayed a dramatic recovery, with some of the worst performing sectors of Q1 leading the rebound. High yield and leveraged loans returned 10.2% and 9.7%, respectively, while the broad U.S. Credit Index returned 8.2%. Within U.S. credit, longer-duration and lower-quality issues tended to perform best.

Credit spreads tightened across the board in Q2, as U.S. corporate investment grade tightened to 150 bps from 272 bps at the end of the first quarter, and high yield spreads moved from 880 bps to 626 bps.

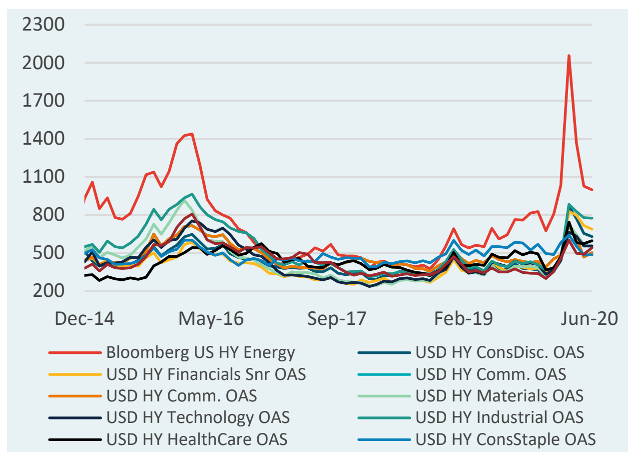
U.S. investment grade downgrades slowed dramatically in June, with only two issuers deteriorating to high yield status. This was down from three issuers in May, five issuers in April, and a peak of 10 issuers in March. So far in 2020, a majority of downgrades have come from the energy and automotive sectors, which have contributed 40% and 25% of total fallen angels, respectively.

SPREADS



Source: Barclays, Bloomberg, as of 6/30/20

HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 6/30/20

	Credit Spread (OAS)	
Market	**6/30/20**	**6/30/19**
Long U.S. Corp	2.0%	1.6%
U.S. Inv Grade Corp	1.5%	1.2%
U.S. High Yield	6.3%	3.8%
U.S. Bank Loans*	6.2%	4.4%

Source: Barclays, Credit Suisse, Bloomberg, as of 6/30/20
**Discount margin (4-year life)*

Default & issuance

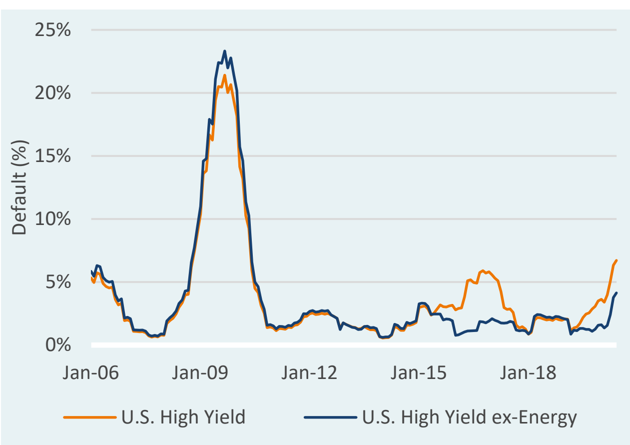
The second quarter saw a broad upsurge in default activity with $76.2 billion of defaults. This figure was only slightly below the $76.6 billion worth of defaults seen in Q1 2009.

Through the first half of 2020, 60 companies defaulted which pushed the par-weighted U.S. high yield default rate to a 10-year high of 6.2%. The default rate of bank loans rose to 4.0% from 1.9% in Q1, remaining at a lower level than high yield largely due to less representation from the energy sector.

The energy sector continues to experience the greatest pain year-to-date, with 18 defaults/distressed transactions comprising 30% of the $106 billion total. The next hardest-hit sectors have been telecommunications (15.8%), cable & satellite (13.6%), and retail (10.4%).

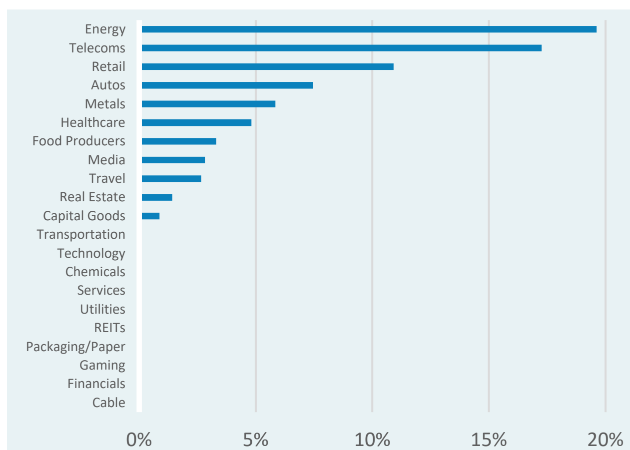
So far, 2020 has seen record issuance of investment grade and high yield bonds. Investment grade issuance peaked in April with $284 billion of new issues, before falling back to a still elevated level of $163 billion in June. Year-to-date net issuance of investment grade was $781 billion, driven by a record $1.2 trillion of new issuance. High yield has also seen aggressive new issuance, with $218 billion over 330 new issues.

HY DEFAULT RATE (ROLLING 1-YEAR)



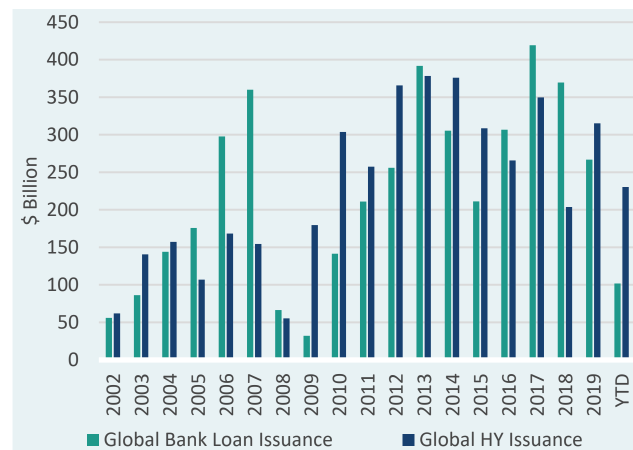
Source: BofA Merrill Lynch, as of 6/30/20

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



Source: BofA Merrill Lynch, as of 6/30/20 – par weighted

GLOBAL ISSUANCE ($ BILLIONS)



Source: Bloomberg, BofA Merrill Lynch, as of 6/30/20

Equity

Equity environment

— U.S. equities delivered an incredible comeback, following the sudden sell-off in March. The S&P 500 rallied +20.5% in Q2, bringing year-to-date performance to -3.1%, and positive +7.5% over the past twelve months. International developed equities (MSCI EAFE +12.9% QTD, -5.1% YoY) and emerging market equities (MSCI EM +18.1% QTD, -3.4% YoY) lagged the domestic market.

— Most major equity benchmarks are within 15% of all-time highs, despite major damage that COVID-19 has inflicted on the global economy. Some of this damage has been mitigated by government support, but some damage is likely yet to be felt.

— According to FactSet, the estimated S&P 500 year-over-year decline in earnings for Q2 is -43.8%. This would mark the largest decline in earnings since Q4 2008 (-69.1%).

— Moves in the CBOE VIX Index moderated in June. The long-term average of the index is near 19. It has remained above that level since February, reaching a high point of 85.0 on March 18th, and closing June at 30.4.

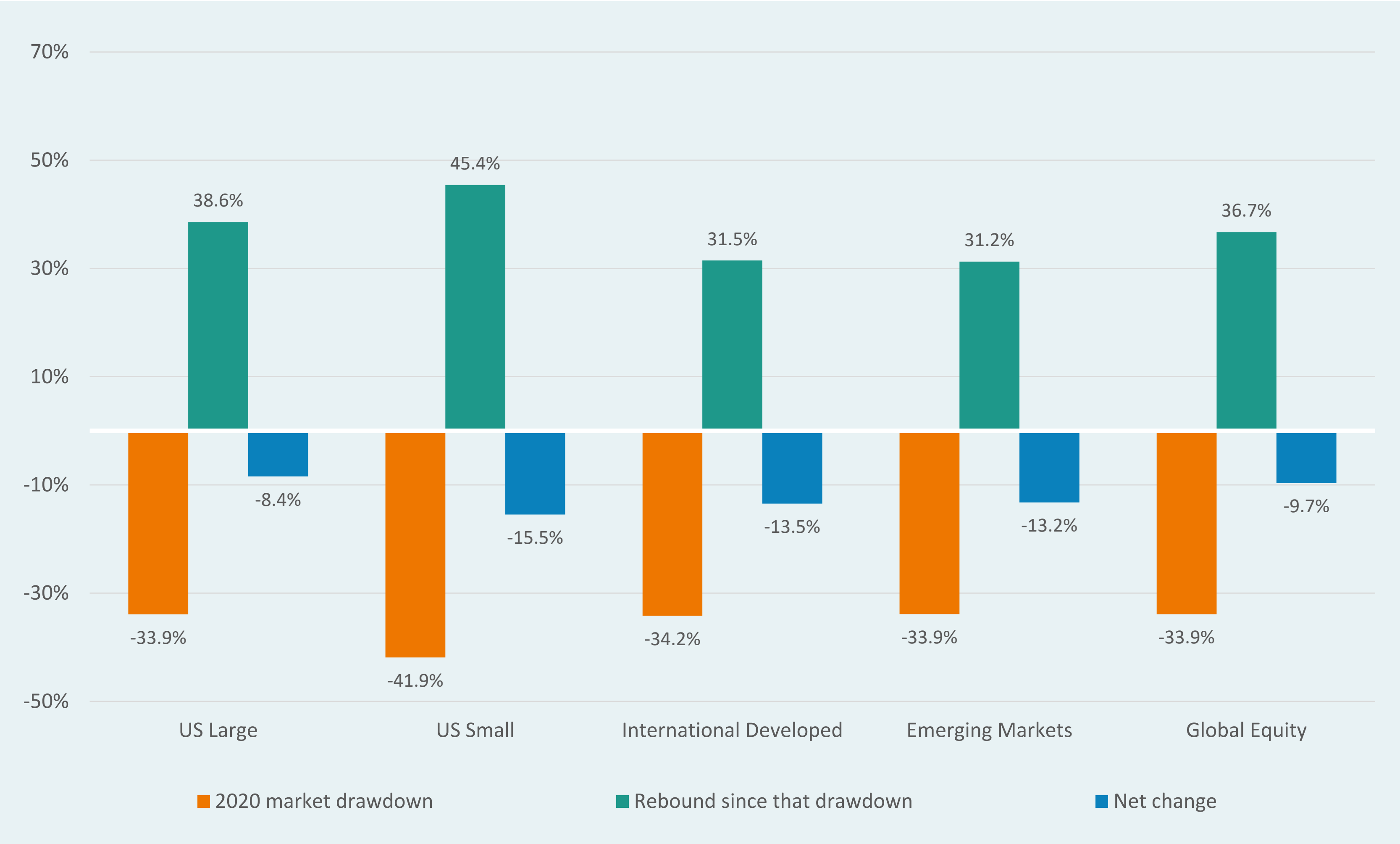
— The U.S. dollar weakened in Q2, falling -2.3% according to the Bloomberg Dollar Spot Index. The market recovery (less demand for save-haven currencies) and materially lower U.S. interest rates (less attractive U.S. Dollar) have likely contributed to the move.

— Growth stocks beat value stocks for the ninth consecutive month. The Russell 1000 Growth Index (+27.8%) outperformed the Russell 1000 Value Index (+14.3%). Sector performance disparity continues to impact the behavior of value. While energy delivered outsized returns relative to the overall index, other value-tilted sectors such as utilities and financials delivered poor performance.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (S&P 500)	20.5%		7.5%	
US Small Cap (Russell 2000)	25.4%		(6.6%)	
US Large Value (Russell 1000 Value)	14.3%		(8.8%)	
US Large Growth (Russell 1000 Growth)	27.8%		23.3%	
International Large (MSCI EAFE)	14.9%	12.9%	(5.1%)	(2.1%)
Eurozone (Euro Stoxx 50)	20.1%	17.8%	(6.4%)	(2.7%)
U.K. (FTSE 100)	9.0%	9.2%	(15.9%)	(12.2%)
Japan (NIKKEI 225)	17.9%	18.2%	6.6%	9.0%
Emerging Markets (MSCI Emerging Markets)	18.1%	16.6%	(3.4%)	1.7%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 6/30/20

Equity market peak-to-trough



Equity markets around the world have recovered most of their losses

As of 6/30/20 - "Peak-to-trough" is defined as the total loss from the highest value achieved in 2020 to the lowest value achieved following the COVID-19 market drawdown. "Net change" is the difference between the market price on June 30th and the highest value achieved in 2020. Indexes include: S&P 500, Russell 2000, MSCI EAFE, MSCI Emerging Markets, MSCI ACWI.

Domestic equity

U.S. equities delivered an incredible comeback, following the sudden and significant sell-off in March. The S&P 500 rallied +20.5% in the second quarter, bringing the year-to-date performance to -3.1%, and positive +7.5% over the past year.

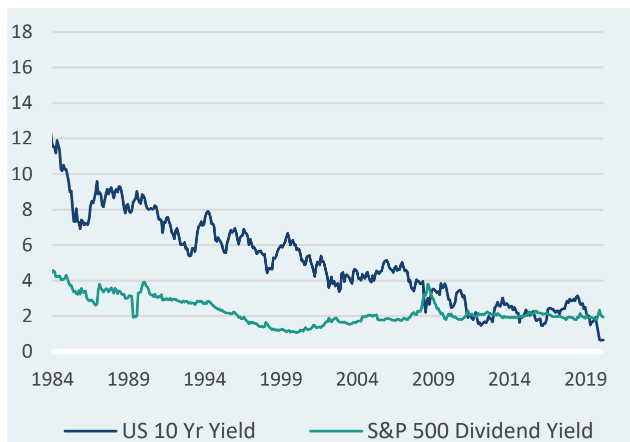
While the Consumer Discretionary (+32.9%) and IT (+30.5%) sectors did post outsized performance, participation in the rebound was broad-based and not confined to mega-cap tech names such as Amazon. The S&P 500 Equal-Weighted Index outperformed the S&P 500 Index by 1.2%.

U.S. Treasury yields have moved closer to zero in 2020, which has reignited an ongoing discussion around the extent to which this dynamic will affect the equity market. We believe that the recent decline in interest rates should foundationally have a lifting effect on the value of equities, all else equal, since the value of a stock equals the present value of all future cash flows from that stock (lower interest rates result in higher present values). Generationally-low interest rates also create difficulties in holding higher quality fixed income due to inherent drag on portfolio performance. This potentially puts pressure on investors to make larger allocations to risky assets.

S&P 500

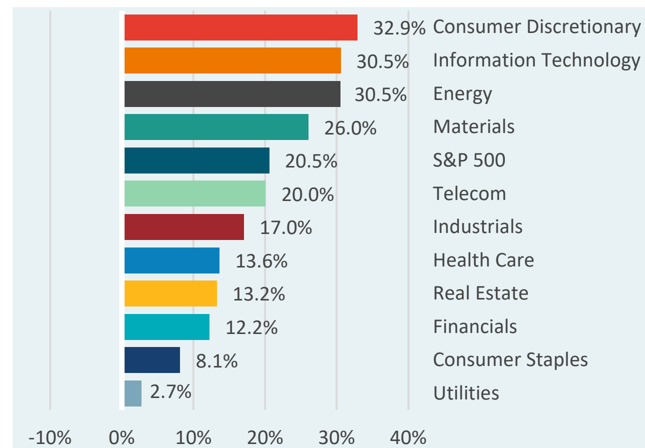
Source: Standard & Poor's, as of 6/30/20

DIVIDEND YIELD VS BOND YIELD



Source: Standard & Poor's, as of 6/30/20

Q2 SECTOR PERFORMANCE



Source: Standard & Poor's, as of 6/30/20

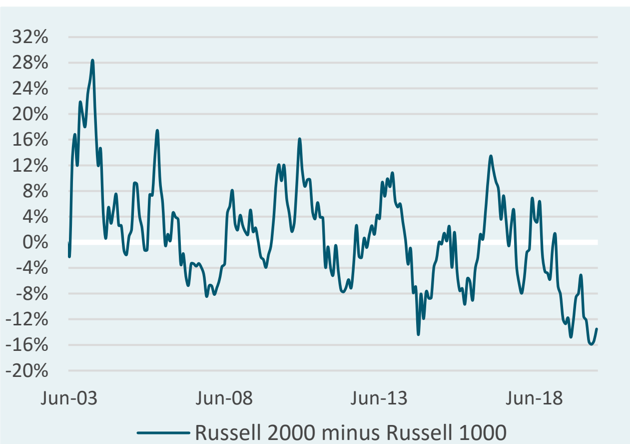
Domestic equity size & style

Growth stocks beat value stocks for the ninth consecutive month. The Russell 1000 Growth Index (+27.8%) outperformed the Russell 1000 Value Index (+14.3%). Small stocks beat large during the quarter (Russell 2000 +25.4%, Russell 1000 +21.8%), but continue to lag significantly over the longer-term.

Sector performance disparity continues to impact the behavior of value. While energy (+32.6%) delivered outsized returns over the quarter relative to the overall index (+21.8%), other value-tilted sectors such as financials (+16.3%), consumer staples (+9.0%), and utilities (+4.0%) presented a drag on overall index performance.

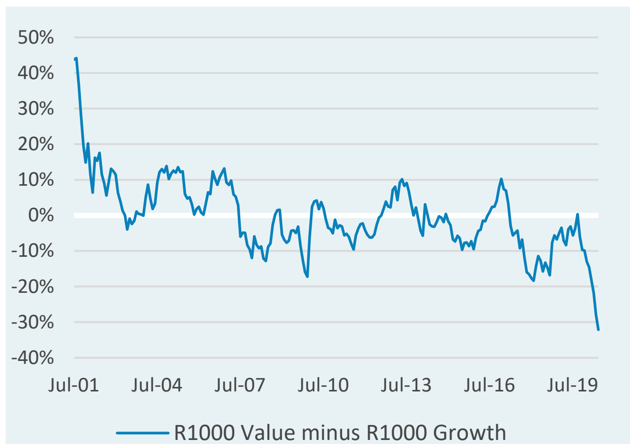
We believe it is extremely difficult to successfully make short-term bets on style factors. Factor performance can be incredibly noisy and vulnerable to sector randomness. Value has become historically cheap, to arguably attractive levels, though a catalyst for a value turnaround is not yet evident. We are watching closely the developments in this space to identify potential opportunities. However, we continue to believe that consistent long-term exposure to the value factor is an ideal implementation approach for most investors, most of the time.

SMALL CAP VS LARGE CAP (YOY)



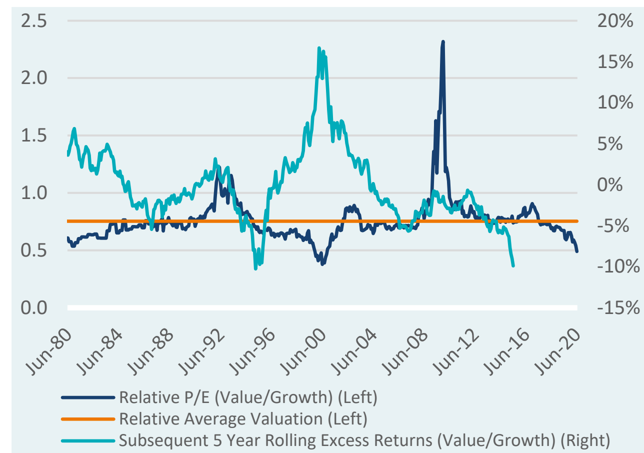
Source: FTSE, as of 6/30/20

VALUE VS GROWTH (YOY)



Source: FTSE, as of 6/30/20

VALUE APPEARS HISTORICALLY CHEAP



Source: Russell, Bloomberg, as of 6/30/20

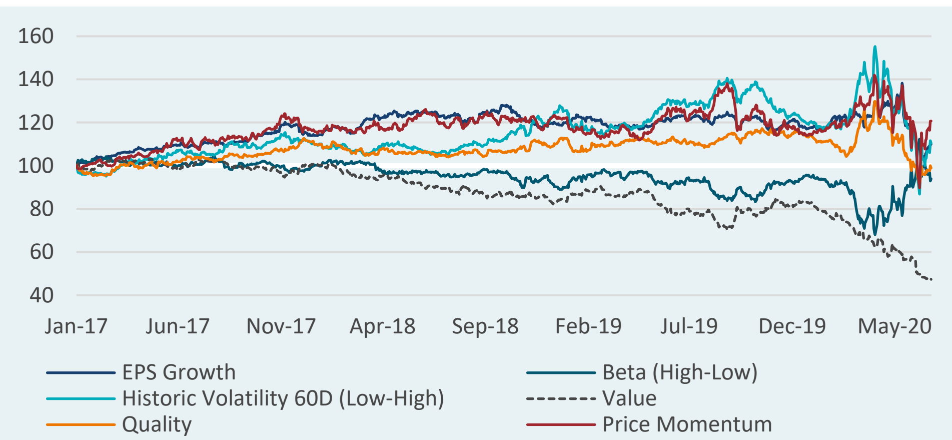
Equity factor monitor

A significant rotation into higher beta, higher volatility, and/or lower quality (long/short, sector neutral, S&P 500 Index quintiles) stocks occurred during the second quarter. The change in investor preferences began in early April and was likely triggered by a combination of extraordinary central bank intervention, along with better than initially expected economic news and COVID-19 pandemic-related data. The rotation began moderating in mid-June as higher quality stocks bounced back.

From a longer-term perspective, the Q2 rotation did not come close to reversing the longer-term positive results accruing to the momentum and low volatility equity factors.

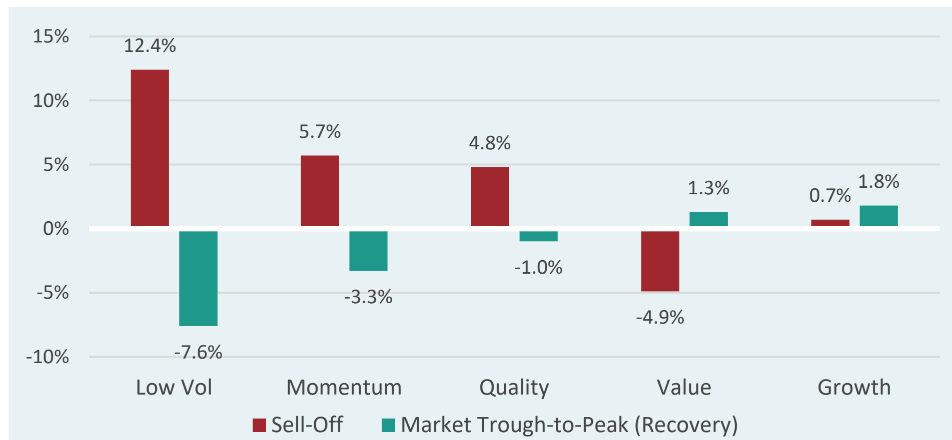
The value factor continued its long-term run of weak results during the quarter. Some have speculated that the value factor returns may benefit from a change in market regime from the current low growth and inflation backdrop to an environment of higher growth and inflation. The rise of factor-focused investing through dedicated smart beta ETFs could also be playing a role. Historical analysis suggests growth is the only factor showing relatively low sensitivity to both upturns and downturns. This analysis also indicates that low volatility, momentum, and quality factors were better protectors of capital during sell-offs.

FACTOR PERFORMANCE (INDEXED 1/2/2017=100)



Source: J.P. Morgan, as of 6/26/20

MEDIAN STYLE PERFORMANCE DURING MARKET SELL-OFF & RECOVERY



Source: J.P. Morgan, as of 6/26/20

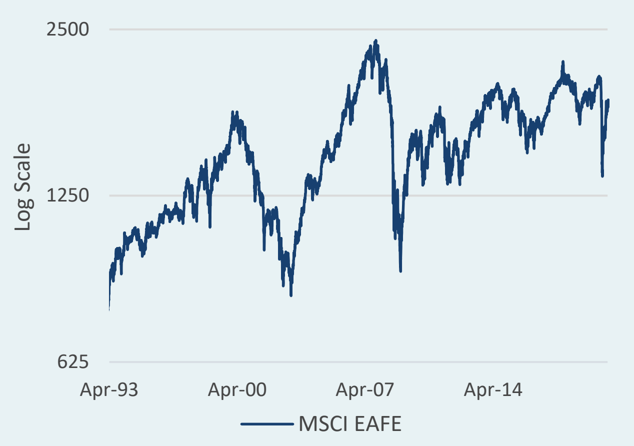
International developed equity

Equity markets around the world delivered a surprisingly strong recovery in the second quarter, rising between 12% to 20%. U.K. equities have lagged, only rising +7.8% over the quarter and remained down -23.3% over the year-to-date. Eurozone equities were among the top performers (MSCI Euro +19.6%). However, international equities lagged domestic markets (S&P 500 +20.5%).

On a one-year basis, the volatility of currency markets detracted from the performance of investors with unhedged currency exposure. Investors in international developed equities lost -3.0% due to currency movement (MSCI EAFE), and investors in emerging markets lost -5.1% (MSCI EM).

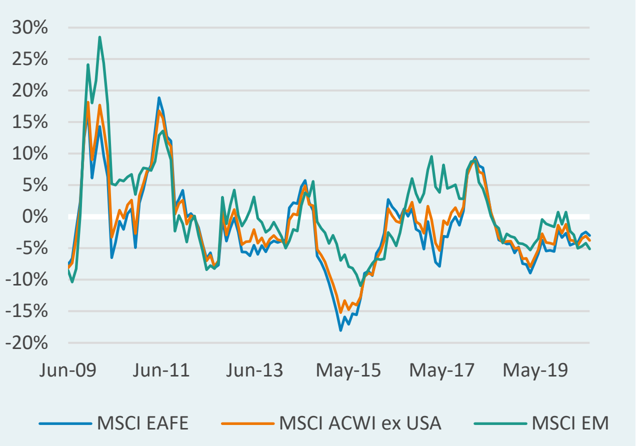
Earnings have fallen materially while equity prices recovered much of their losses. These two effects have led to a significant jump in equity valuations. This dynamic is not uncommon in environments where investors "look to the other side" of a crisis and generally expect tough conditions to be short-lived. With that said, if earnings do not recover to prior levels in a timely manner, investors may begin to question elevated multiples.

INTERNATIONAL DEVELOPED EQUITIES



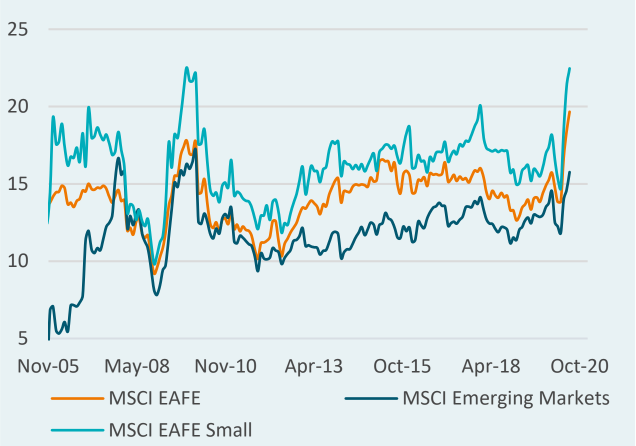
Source: MSCI, as of 6/30/20

EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 6/30/20

FORWARD P/E



Source: MSCI, as of 6/30/20

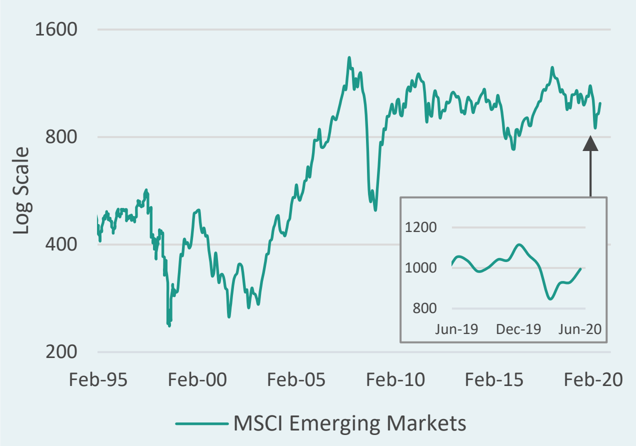
Emerging market equity

Emerging market equities (MSCI EM +18.1%) underperformed U.S. (S&P 500 +20.5%) while outperforming international developed equities (MSCI EAFE +14.9%) over the quarter. Within the emerging market complex, Latin American equities outperformed Asia over the quarter (MSCI EM Latin American +19.1% vs. MSCI EM Asia +17.8%) but underperformed year-to-date (-35.2% vs.-3.5%).

Low inflation in emerging economies may allow central banks more room to maneuver relative to developed economies with regard to the use of monetary policy in encouraging economic growth during the global slowdown.

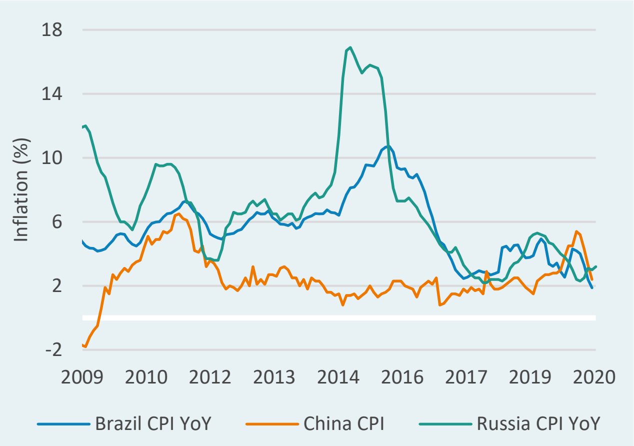
Emerging currencies appreciated in Q2, which was additive to performance (MSCI EM Unhedged +18.1%, MSCI EM Hedged +16.6%). The significant depreciation of the Brazilian real and Turkish lira provided material headwinds for the performance of U.S. investors who have unhedged exposure to emerging markets. On the other hand, the Russian ruble saw large gains as the currency benefitted from rising oil prices.

EMERGING MARKET EQUITY



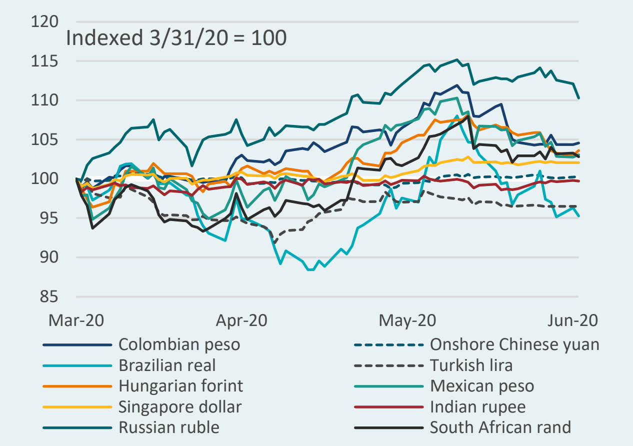
Source: MSCI, as of 6/30/20

INFLATION (YOY)



Source: Bloomberg, as of 6/30/20

J.P. MORGAN EMCI CONSTITUENTS (VS. USD)



Source: Bloomberg, as of 6/30/20

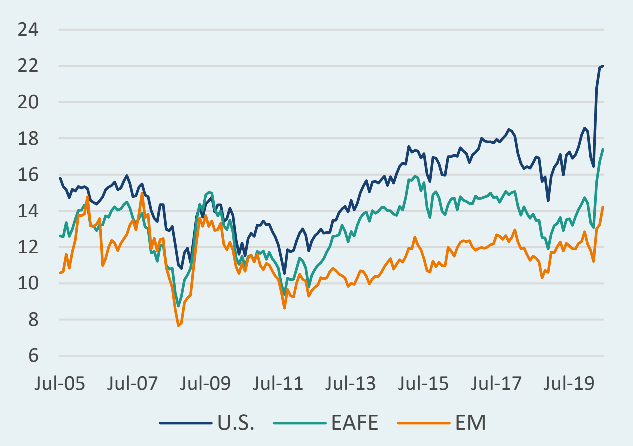
Equity valuations

Equity valuations fell in Q1 alongside the broad market selloff. In Q2, valuations reflated significantly as investors seemed to interpret the pandemic-induced earnings recession as more temporary in nature.

Equity prices are typically viewed as the present value of the sum of future cash flows. If the earnings drawdown is indeed temporary and "v-shaped" in nature, this implies mathematically a more modest loss of equity value. Furthermore, near zero interest rates in the developed world likely offset some of this impact (lower interest rates increase the present value of equity). While we do not necessarily disagree with the argument that the equity rebound has been *too much too soon*, these two effects (potentially quick recovery but very low interest rates) may help us to better understand the recent rally.

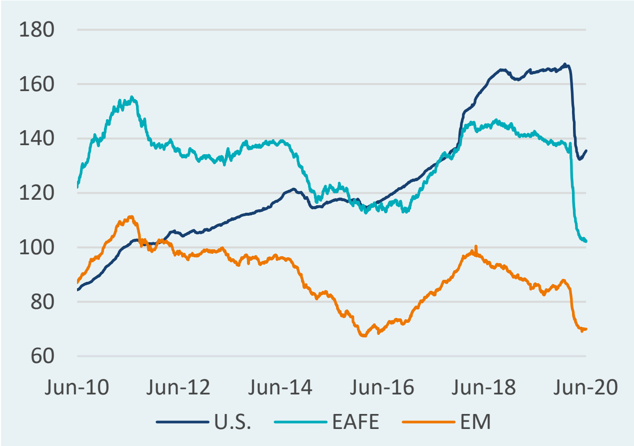
Expected earnings over the next 12 months appear to have bottomed in the United States and look close to bottoming for the international developed and emerging markets. These expectations may provide some stability to equity valuations in the coming months.

FORWARD P/E RATIOS



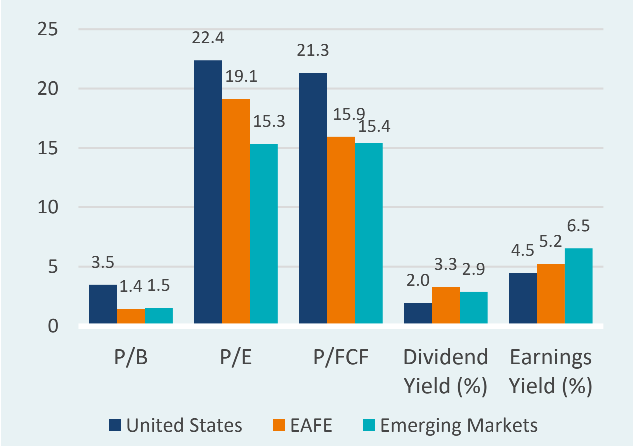
Source: MSCI, 12m forward P/E, as of 3/31/20

BLENDED FORWARD 12-MONTH EPS ESTIMATES



Source: MSCI, 12m forward EPS, as of 6/30/20

VALUATION METRICS (3-MONTH AVERAGE)



Source: Bloomberg, MSCI as of 6/30/20 - trailing P/E

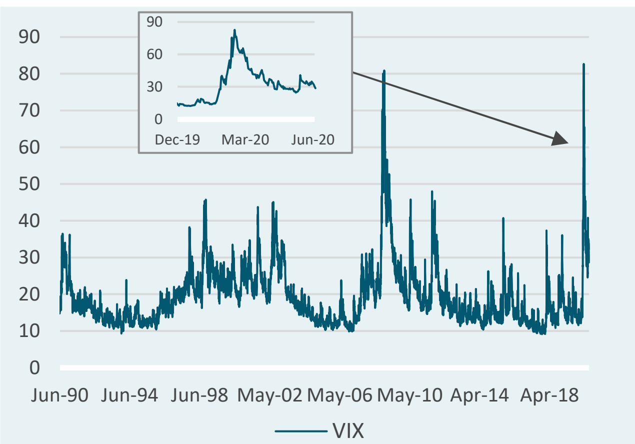
Equity volatility

Moves in the CBOE VIX Index moderated in June. The long-term average of the index is near 19. It has remained above that level since February, reaching a high point of 85.0 on March 18th, and closing June at 30.4.

The VIX futures curve, which reflects expectations for future implied volatility of S&P 500 Index options, has taken on an inverted "v-shape" over the next six months, indicating market participants are pricing in higher S&P 500 volatility toward the end of the year around the U.S. election. After October, the market expectation is for volatility to subside considerably. In normal circumstances, the VIX futures curve exhibits a moderate upward slope due to the skewed and mean-reverting nature of volatility generally (it is low most of the time, though there are occasional, large, short-lived spikes).

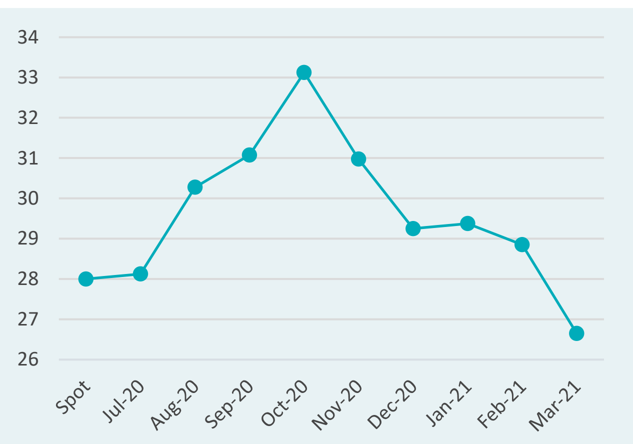
In the first quarter, the implied volatility on S&P 500 Index out-of-the-money put options spiked relative to similarly out-of-the-money call options, indicating investor preference for downside protection. That preference faded over the second quarter, but remained fairly strong relative to recent history.

U.S. IMPLIED VOLATILITY (VIX)



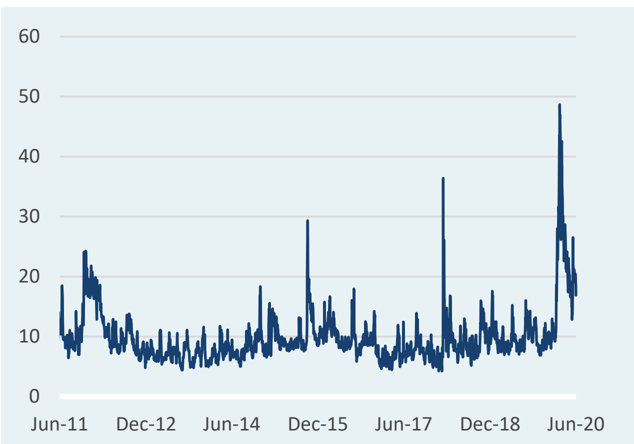
Source: CBOE, as of 6/30/20

VIX FUTURES CURVE



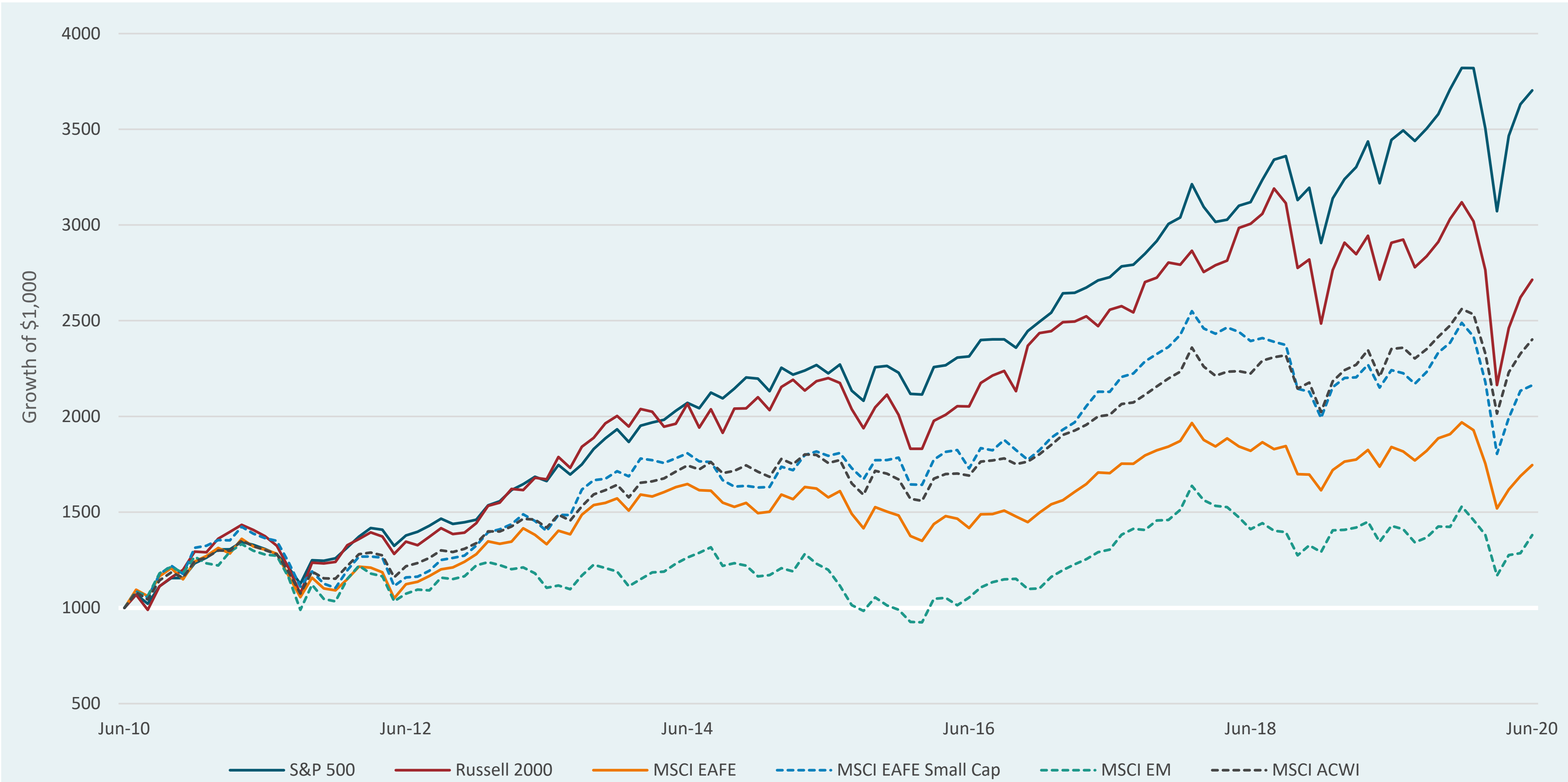
Source: CBOE, Bloomberg, as of 6/30/20

30-DAY 10-DELTA SKEW (S&P 500 OPTIONS)



Source: CBOE, Bloomberg, as of 6/30/20

Long-term equity performance



Source: Morningstar, as of 6/30/20

Other assets

Currency

The U.S. dollar weakened in the second quarter, falling -2.3% according to the Bloomberg Dollar Spot Index. The dollar fell -2.4% against the Euro, appreciated +0.4% against the British pound, and fell -0.1% relative to the Japanese yen. The market recovery (less demand for save-haven currencies) and materially lower U.S. interest rates (less attractive U.S. dollar) have likely contributed to the move lower.

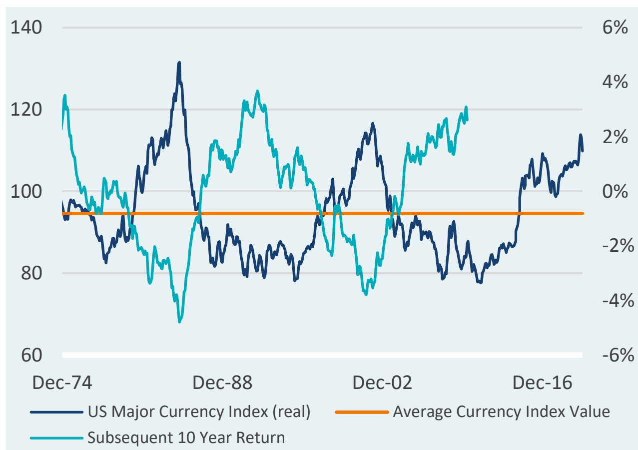
As the euro strengthened in Q2, some currency analysts have adopted a more optimistic view on the common currency. Improved macroeconomic conditions relative to the United States, the potential implications of a strong cyclical rebound, as well as the ECB's apparent unwillingness to push rates much lower below 0%, may be leading to euro appreciation.

The MSCI Currency Factor Mix Index, constructed as a combination of individual currency factor indices (carry, value, momentum) declined 1.7% in Q2. The momentum factor (-7.8%) drove declines in the overall index as the U.S. dollar began to weaken relative to other major currency pairs following a period of strong appreciation.

BLOOMBERG DOLLAR SPOT INDEX

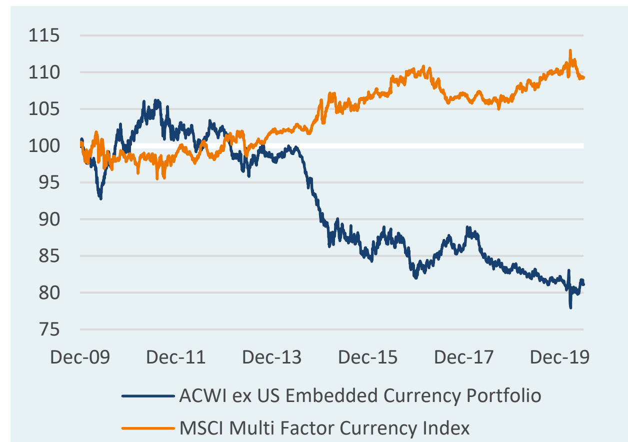
Source: Bloomberg, as of 6/30/20

USD CURRENCY LEVEL & SUBSEQUENT RETURN



Source: Federal Reserve, as of 6/30/20

EMBEDDED CURRENCY VS CURRENCY BETA



Source: MSCI, Bloomberg, as of 6/30/20

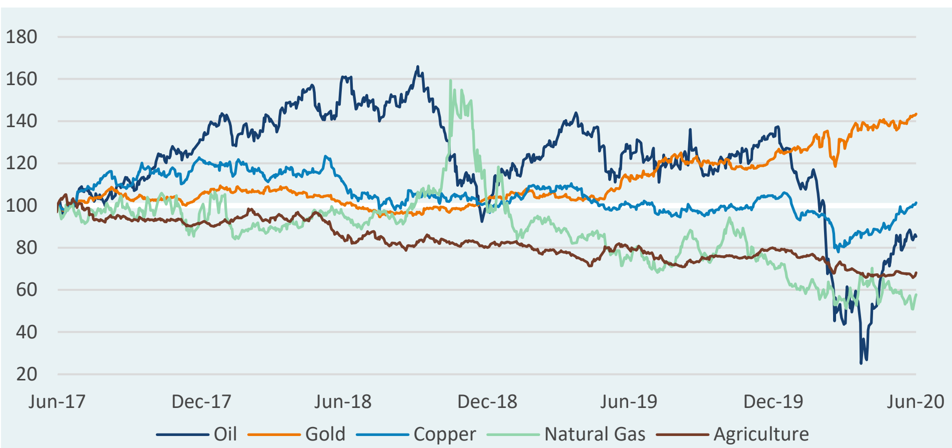
Commodities

The Bloomberg Commodity Index returned 5.1% in the second quarter, though the index remains depressed year-to-date (-19.4%). A global recession driven by COVID-19 has led to an unprecedented industrial slowdown, severely impacting the demand for energy. The energy (-46.3%) and petroleum (-49.8%) components of the index have dragged performance lower year-to-date.

Gold prices climbed higher during Q2 amidst a backdrop of heightened geopolitical and economic uncertainty, lower global real yields (which diminish the opportunity cost of holding gold), and a weakening U.S. dollar. Spot gold prices rose from $1577/oz to $1781/oz, their highest level since 2011, and have returned 17.1% so far this year. Industrial metals (+12.3%) were bid higher in the second quarter alongside oil, perhaps on enthusiasm around reopening plans and a possible economic rebound. Copper (+21.2%) experienced supply-side tailwinds as COVID-19 spread through Peru, raising production concerns.

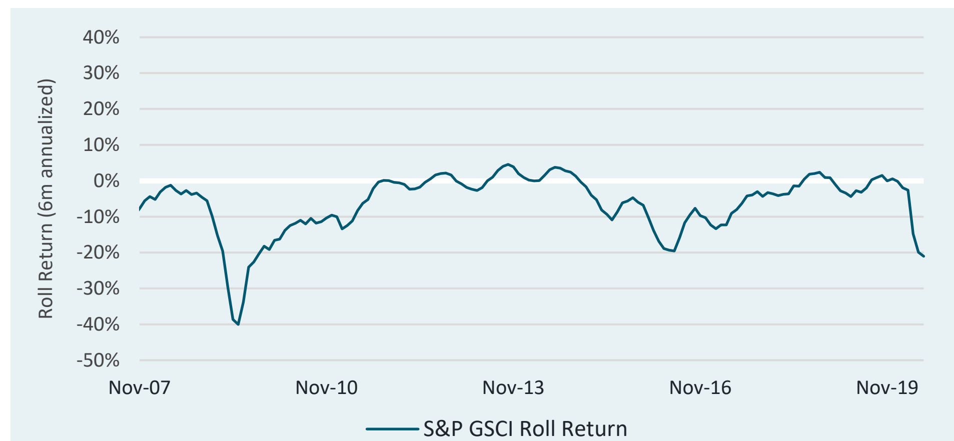
Some of the poor recent performance of commodities has been caused by an upward sloping futures curve, which can generate losses due to negative "roll return". Unattractive futures curve shape continues to contribute to performance.

COMMODITY PERFORMANCE



Source: Bloomberg, as of 6/30/20

COMMODITIES ROLL RETURN



Source: Standard & Poor's, as of 6/30/20

Appendix

Periodic table of returns

BEST

WORST

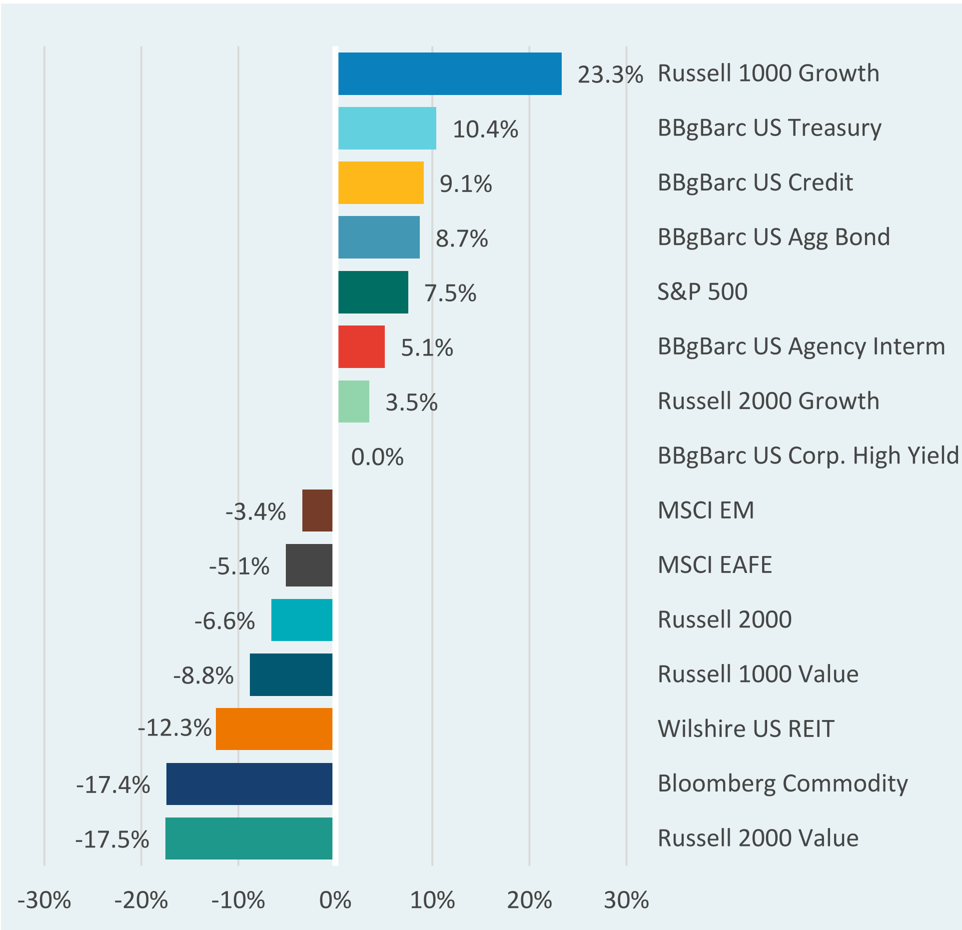
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	YTD	5-Year	10-Year
Large Cap Growth	38.7	66.4	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.7	36.4	9.8	15.9	17.2
US Bonds	27.0	43.1	22.8	8.4	10.3	48.5	22.2	21.4	26.9	16.2	1.4	37.2	26.9	7.8	18.1	38.8	13.2	5.7	21.3	30.2	1.9	31.4	6.1	10.5	14.0
Real Estate	20.3	33.2	12.2	7.3	6.7	47.3	20.7	20.1	23.5	15.8	-6.5	34.5	24.5	2.6	17.9	34.5	13.0	0.9	17.3	25.0	0.0	28.5	0.7	7.0	12.9
Cash	19.3	27.3	11.6	3.3	1.6	46.0	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	0.6	12.1	22.2	-1.5	26.5	0.4	6.9	10.5
Hedge Funds of Funds	16.2	26.5	7.0	2.8	1.0	39.2	16.5	7.5	18.4	11.6	-25.9	28.4	16.8	0.4	16.4	33.1	6.0	0.0	11.8	21.7	-3.5	25.5	-2.3	5.5	10.4
60/40 Global Portfolio	8.7	21.3	4.1	-2.4	-6.0	29.9	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-0.8	11.2	14.6	-6.0	22.4	-2.3	4.6	9.8
Large Cap Equity	15.6	24.3	6.0	2.5	-5.9	30.0	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	-4.8	22.0	-2.8	4.3	7.8
Small Cap Growth	4.9	20.9	-3.0	-5.6	-11.4	29.7	12.9	5.3	15.1	7.0	-35.6	20.6	15.5	-2.9	14.6	12.1	4.2	-1.4	8.0	13.7	-8.3	18.6	-3.1	4.3	6.8
Emerging Markets Equity	1.2	13.2	-7.3	-9.1	-15.5	25.2	11.4	4.7	13.3	7.0	-36.8	19.7	13.1	-4.2	11.5	11.0	3.4	-2.5	7.1	7.8	-9.3	18.4	-9.8	2.9	5.7
International Equity	-2.5	11.4	-7.8	-9.2	-15.7	23.9	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-3.8	5.7	7.7	-11.0	8.7	-11.3	2.1	3.8
Small Cap Equity	-5.1	7.3	-14.0	-12.4	-20.5	11.6	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	7.0	-11.2	7.8	-13.0	1.4	3.3
Large Cap Value	-6.5	4.8	-22.4	-19.5	-21.7	9.0	6.3	4.2	4.8	-0.2	-38.5	5.9	6.5	-11.7	4.2	-2.0	-1.8	-7.5	1.0	3.5	-12.9	7.7	-16.3	1.3	2.7
Commodities	-25.3	-0.8	-22.4	-20.4	-27.9	4.1	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	-13.8	6.4	-19.4	1.1	0.6
Small Cap Value	-27.0	-1.5	-30.6	-21.2	-30.3	1.0	1.4	2.4	2.1	-9.8	-53.2	-16.9	0.1	-18.2	-1.1	-9.5	-17.0	-24.7	0.3	0.9	-14.6	2.1	-23.5	-7.7	-5.8

- Large Cap Equity
- Large Cap Value
- Large Cap Growth
- Small Cap Equity
- Small Cap Value
- Small Cap Growth
- International Equity
- Emerging Markets Equity
- US Bonds
- Cash
- Commodities
- Real Estate
- Hedge Funds of Funds
- 60% MSCI ACWI/40% BBgBarc Global Bond

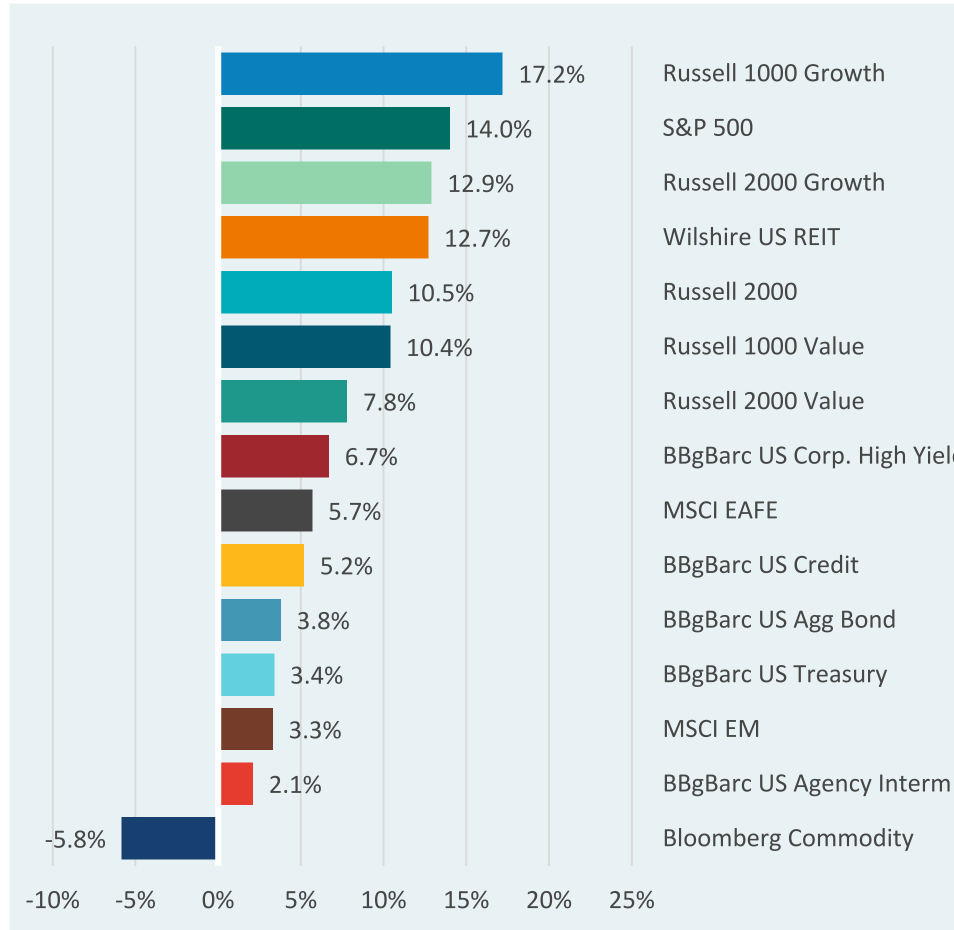
Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BBgBarc Global Bond. NCREIF Property Index performance data as of 3/31/20.

Major asset class returns

ONE YEAR ENDING JUNE



TEN YEARS ENDING JUNE



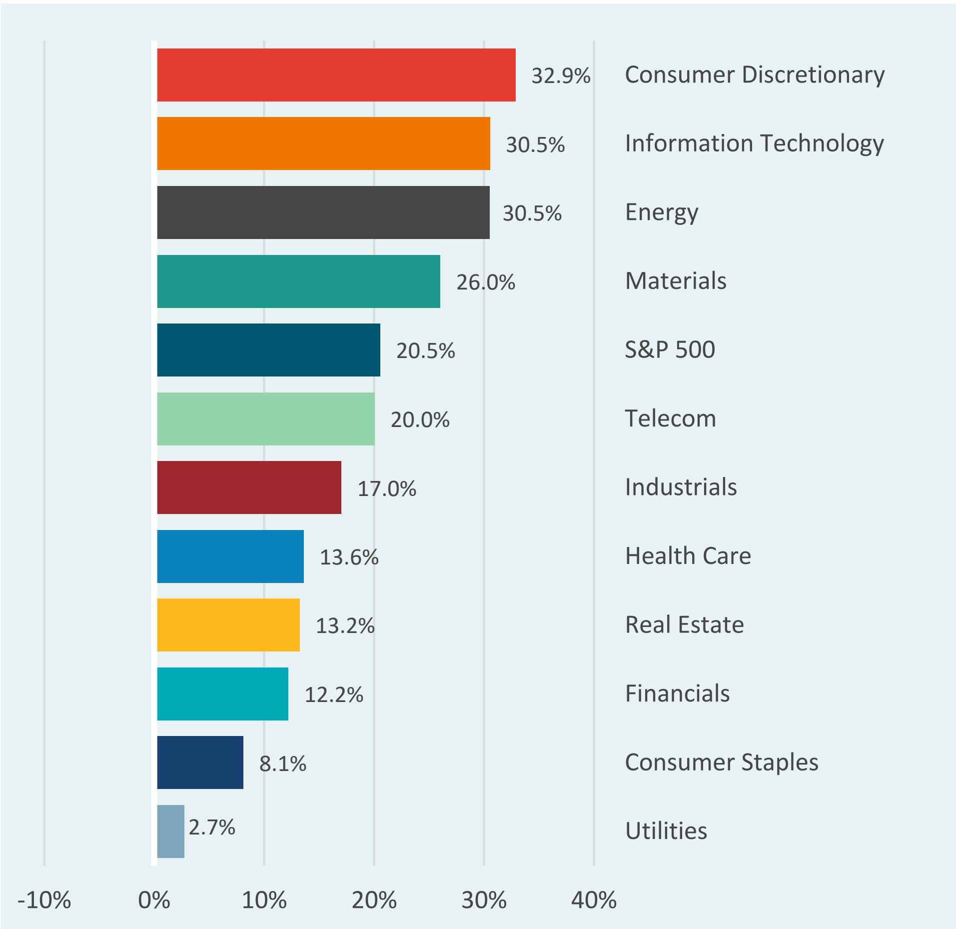
**Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.*

Source: Morningstar, as of 6/30/20

Source: Morningstar, as of 6/30/20

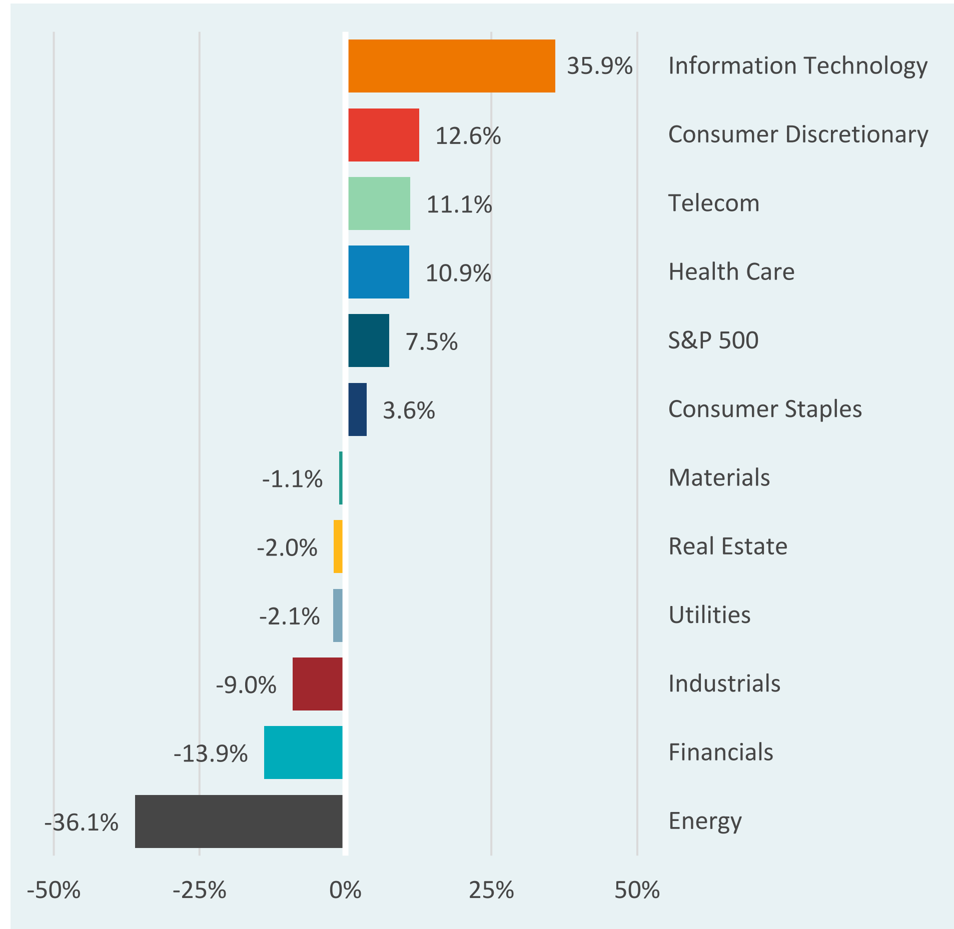
S&P 500 sector returns

QTD



Source: Morningstar, as of 6/30/20

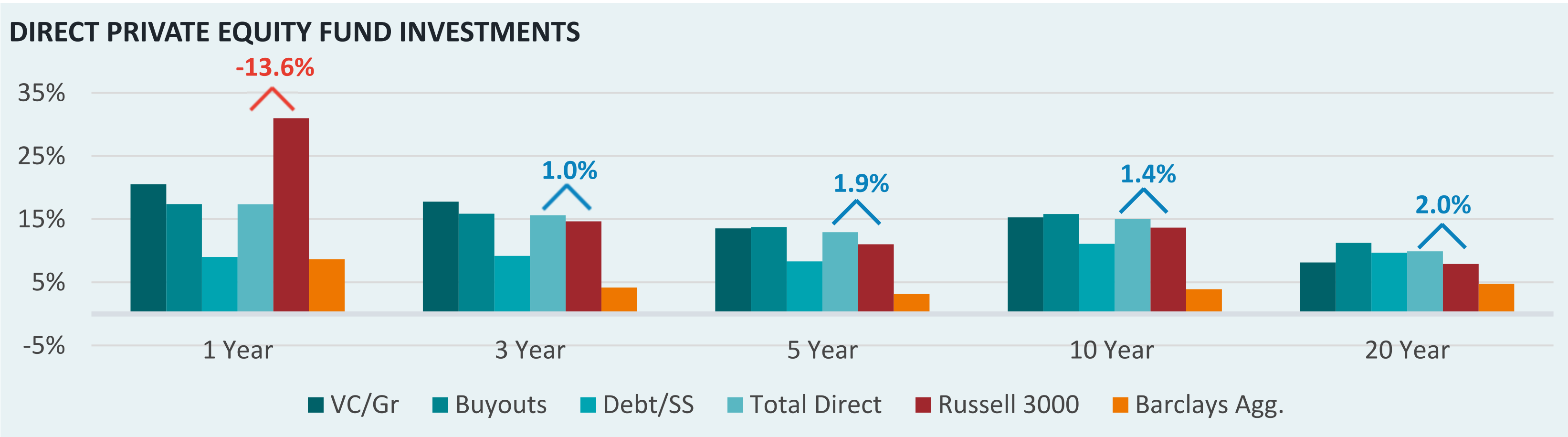
ONE YEAR ENDING JUNE



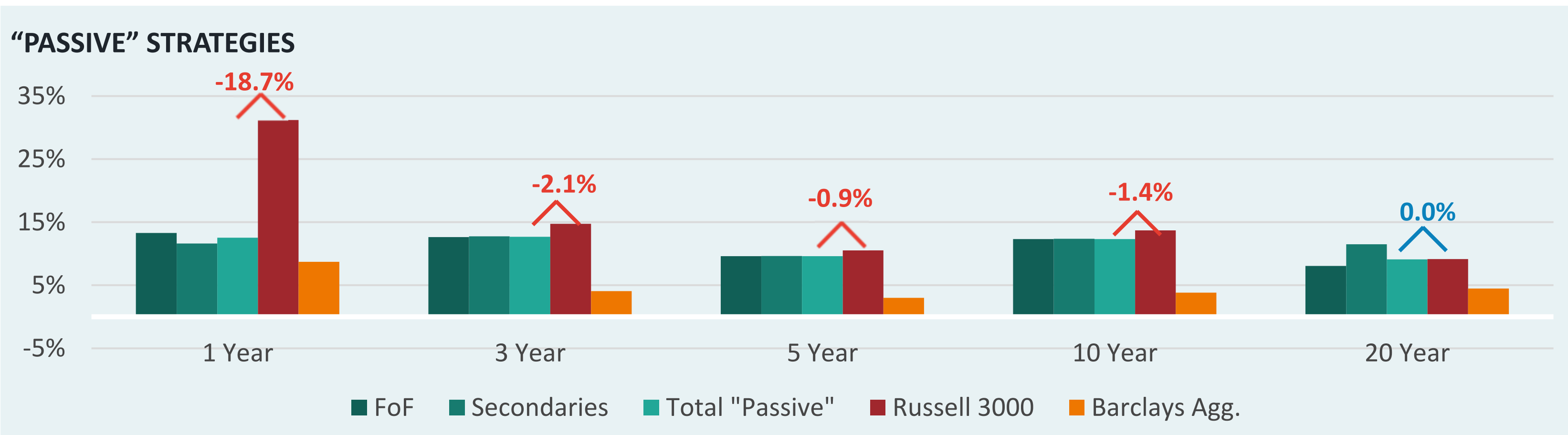
Source: Morningstar, as of 6/30/20

Private equity vs. public performance

As of 12/31/2019



Direct P.E Fund Investments outperformed comparable public equites across all time periods, except on a 1-year basis

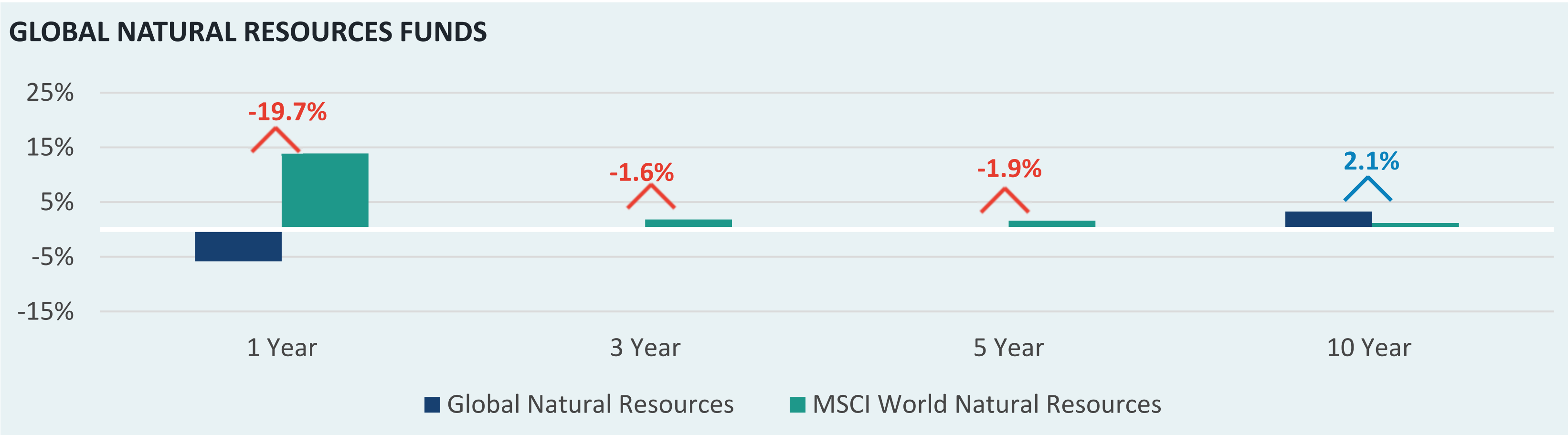


"Passive" strategies underperformed comparable public equities across all time periods, except on a 20- year basis

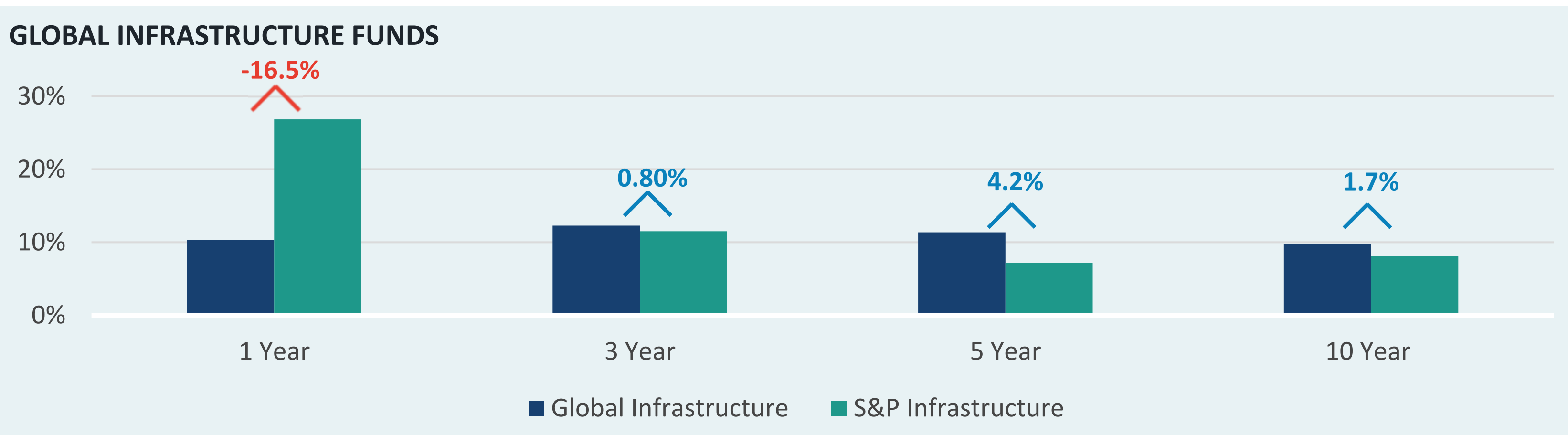
Sources: Thomson Reuters Cambridge Universe's PME Module: U.S. Private Equity Funds sub asset classes as of December 31, 2019. Public Market Equivalent returns resulted from "Total Passive" and Total Direct's identical cash flows invested into and distributed from respective traditional asset comparable.

Private equity vs. liquid real assets performance

As of 12/31/2019



N.R. funds underperformed the MSCI World Natural Resources benchmark across all time periods, except on a 10 year basis

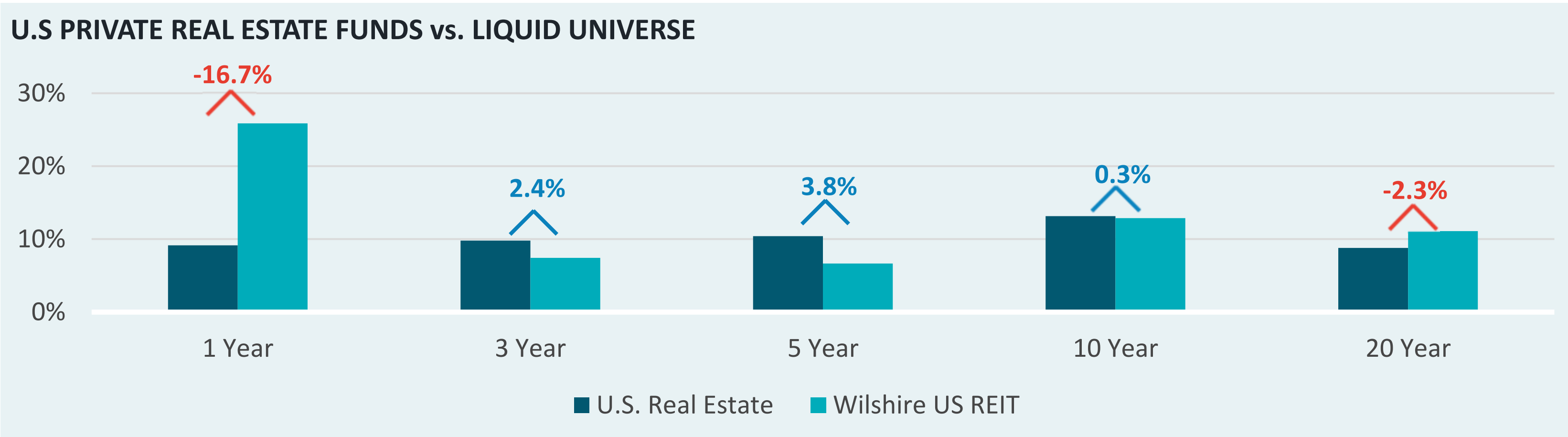


Infra. funds outperformed the S&P Infra. across all periods, except on a 1-year basis

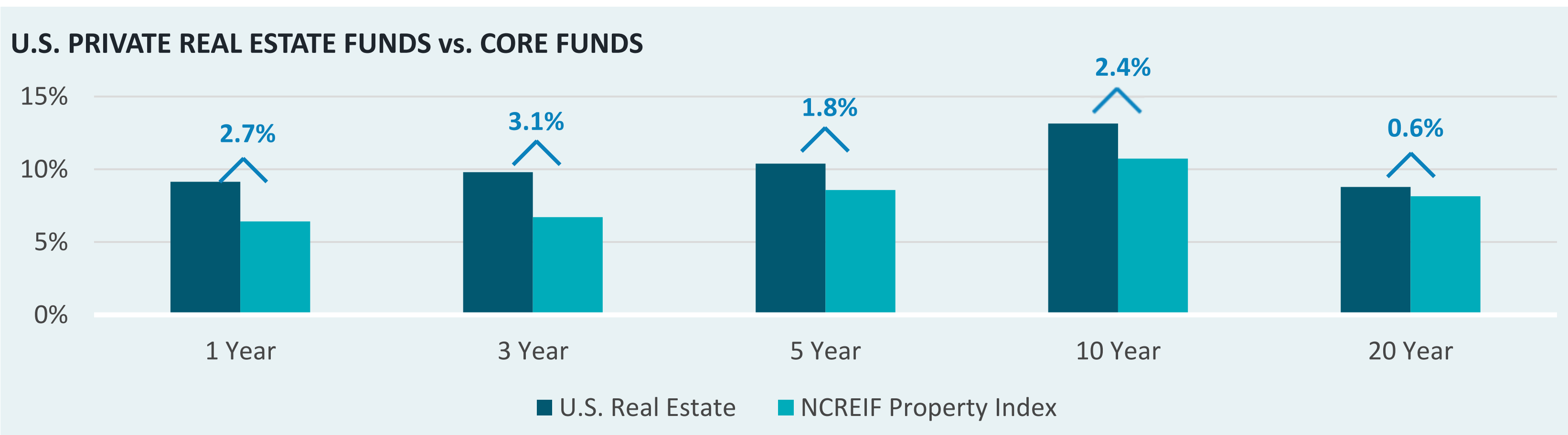
Sources: Thomson Reuters C|A PME: Global Natural Resources (vintage 1999 and later, inception of MSCI World Natural Resources benchmark) and Global Infrastructure (vintage 2002 and later, inception of S&P Infrastructure benchmark) universes as of December 31, 2019. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real assets universes.

Private vs. liquid & core real estate performance

As of 12/31/2019



U.S. Private R.E. funds underperformed the Wilshire U.S. REIT Index on a 1- and 20-year basis, but not over 3-, 5, and 10-years basis.



U.S. Private R.E. Funds outperformed the NCREIF Property Index over all time periods

Sources: Thomson Reuters C|A PME: U.S. Real Estate universes as of December 31, 2019. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real estate universes.

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	2.0	20.5	(3.1)	7.5	10.7	10.7	14.0
S&P 500 Equal Weighted	1.6	21.7	(10.8)	(3.2)	5.4	7.1	12.6
DJ Industrial Average	1.8	18.5	(8.4)	(0.5)	9.1	10.6	13.0
Russell Top 200	2.4	20.9	(0.5)	11.2	12.5	11.9	14.6
Russell 1000	2.2	21.8	(2.8)	7.5	10.6	10.5	14.0
Russell 2000	3.5	25.4	(13.0)	(6.6)	2.0	4.3	10.5
Russell 3000	2.3	22.0	(3.5)	6.5	10.0	10.0	13.7
Russell Mid Cap	1.8	24.6	(9.1)	(2.2)	5.8	6.8	12.3
Style Index							
Russell 1000 Growth	4.4	27.8	9.8	23.3	19.0	15.9	17.2
Russell 1000 Value	(0.7)	14.3	(16.3)	(8.8)	1.8	4.6	10.4
Russell 2000 Growth	3.8	30.6	(3.1)	3.5	7.9	6.9	12.9
Russell 2000 Value	2.9	18.9	(23.5)	(17.5)	(4.3)	1.3	7.8

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
BBgBarc US TIPS	1.1	4.2	6.0	8.3	5.0	3.7	3.5
BBgBarc US Treasury Bills	0.0	0.0	0.7	1.7	1.8	1.2	0.7
BBgBarc US Agg Bond	0.6	2.9	6.1	8.7	5.3	4.3	3.8
Duration							
BBgBarc US Treasury 1-3 Yr	0.0	0.2	3.0	4.1	2.7	1.9	1.3
BBgBarc US Treasury Long	0.1	0.2	21.2	25.4	12.0	9.3	7.7
BBgBarc US Treasury	0.1	0.5	8.7	10.4	5.6	4.1	3.4
Issuer							
BBgBarc US MBS	(0.1)	0.7	3.5	5.7	4.0	3.2	3.1
BBgBarc US Corp. High Yield	1.0	10.2	(3.8)	0.0	3.3	4.8	6.7
BBgBarc US Agency Interm	0.1	0.8	3.7	5.1	3.3	2.5	2.1
BBgBarc US Credit	1.8	8.2	4.8	9.1	6.1	5.5	5.2

INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
MSCI ACWI	3.2	19.2	(6.3)	2.1	6.1	6.5	9.2
MSCI ACWI ex US	4.5	16.1	(11.0)	(4.8)	1.1	2.3	5.0
MSCI EAFE	3.4	14.9	(11.3)	(5.1)	0.8	2.1	5.7
MSCI EM	7.4	18.1	(9.8)	(3.4)	1.9	2.9	3.3
MSCI EAFE Small Cap	1.4	19.9	(13.1)	(3.5)	0.5	3.8	8.0
Style Index							
MSCI EAFE Growth	3.2	16.9	(3.5)	4.2	5.9	5.5	7.8
MSCI EAFE Value	3.6	12.4	(19.3)	(14.5)	(4.4)	(1.6)	3.5
Regional Index							
MSCI UK	1.4	7.8	(23.3)	(17.7)	(3.9)	(2.5)	3.9
MSCI Japan	(0.0)	11.6	(7.1)	3.1	3.0	3.4	6.1
MSCI Euro	6.2	19.6	(12.7)	(7.7)	(0.9)	1.6	5.0
MSCI EM Asia	8.2	17.8	(3.5)	4.9	4.1	4.8	5.8
MSCI EM Latin American	5.3	19.1	(35.2)	(32.5)	(7.2)	(3.2)	(3.8)

OTHER

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Index							
Bloomberg Commodity	2.3	5.1	(19.4)	(17.4)	(6.1)	(7.7)	(5.8)
Wilshire US REIT	2.3	10.6	(17.8)	(12.3)	0.2	5.7	12.7
CS Leveraged Loans	1.3	9.7	(4.8)	(2.3)	2.1	4.6	5.0
Alerian MLP	(8.2)	47.2	(38.3)	(44.1)	(18.3)	(13.6)	(1.4)
Regional Index							
JPM EMBI Global Div	3.5	12.3	(2.8)	0.5	3.6	5.3	6.0
JPM GBI-EM Global Div	0.5	9.8	(6.9)	(2.8)	1.1	2.3	1.6
Hedge Funds							
HFRI Composite	1.9	9.0	(3.5)	(0.6)	2.1	2.3	3.7
HFRI FOF Composite	1.3	7.2	(2.3)	(0.2)	2.0	1.4	2.7
Currency (Spot)							
Euro	1.0	2.4	0.1	(1.4)	(0.5)	0.2	(0.9)
Pound	(0.1)	(0.4)	(6.7)	(2.9)	(1.7)	(4.7)	(1.9)
Yen	(0.1)	0.1	0.7	(0.1)	1.4	2.6	(2.0)

Source: Morningstar, HFR, as of 6/30/20

Definitions

Bloomberg US Weekly Consumer Comfort Index *- tracks the public's economic attitudes each week, providing a high-frequency read on consumer sentiment. The index, based on cell and landline telephone interviews with a random, representative national sample of U.S. adults, tracks Americans' ratings of the national economy, their personal finances and the buying climate on a weekly basis, with views of the economy's direction measured separately each month. (www.langerresearch.com)*

University of Michigan Consumer Sentiment Index *- A survey of consumer attitudes concerning both the present situation as well as expectations regarding economic conditions conducted by the University of Michigan. For the preliminary release approximately three hundred consumers are surveyed while five hundred are interviewed for the final figure. The level of consumer sentiment is related to the strength of consumer spending. (www.Bloomberg.com)*

NFIB Small Business Outlook *- Small Business Economic Trends (SBET) is a monthly assessment of the U.S. small-business economy and its near-term prospects. Its data are collected through mail surveys to random samples of the National Federal of Independent Business (NFIB) membership. The survey contains three broad question types: recent performance, near-term forecasts, and demographics. The topics addressed include: outlook, sales, earnings, employment, employee compensation, investment, inventories, credit conditions, and single most important problem. (http://www.nfib-sbet.org/about/)*

NAHB Housing Market Index – *the housing market index is a weighted average of separate diffusion induces for three key single-family indices: market conditions for the sale of new homes at the present time, market conditions for the sale of new homes in the next six months, and the traffic of prospective buyers of new homes. The first two series are rated on a scale of Good, Fair, and Poor and the last is rated on a scale of High/Very High, Average, and Low/Very Low. A diffusion index is calculated for each series by applying the formula "(Good-Poor + 100)/2" to the present and future sales series and "(High/Very High-Low/Very Low + 100)/2" to the traffic series. Each resulting index is then seasonally adjusted and weighted to produce the HMI. Based on this calculation, the HMI can range between 0 and 100.*

Notices & disclosures