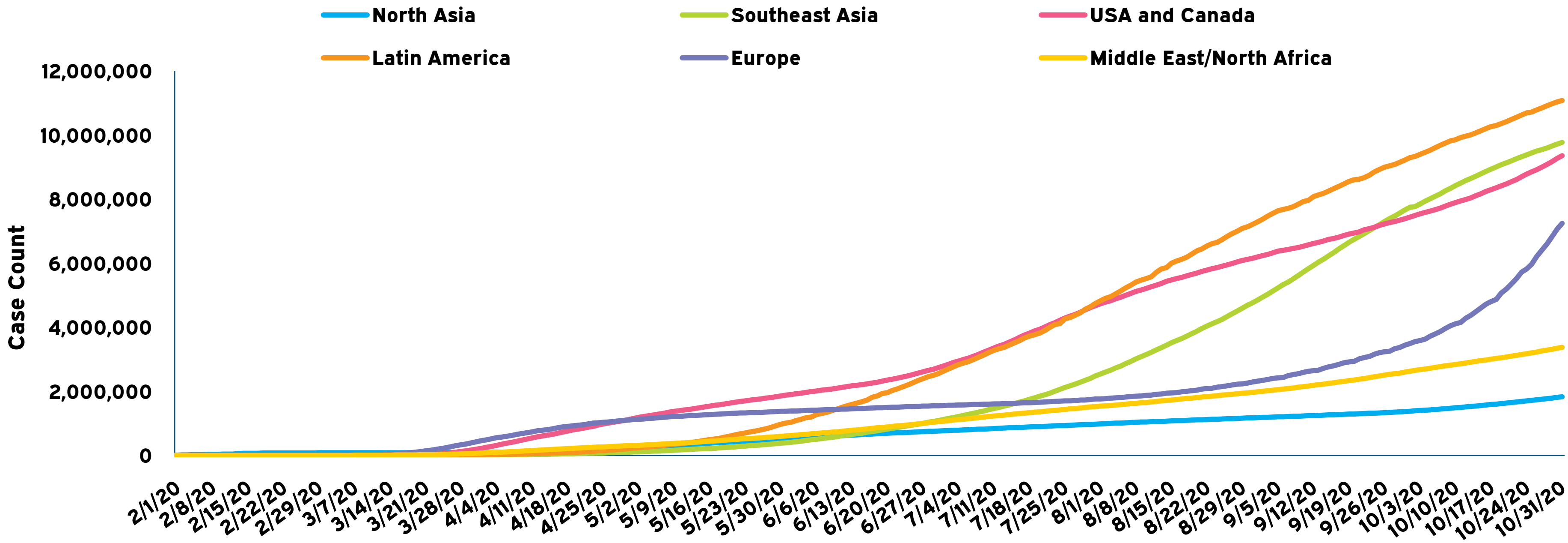
Economic and Market Update

Data as of October 31, 2020

Case Count by Select Region[1,2]

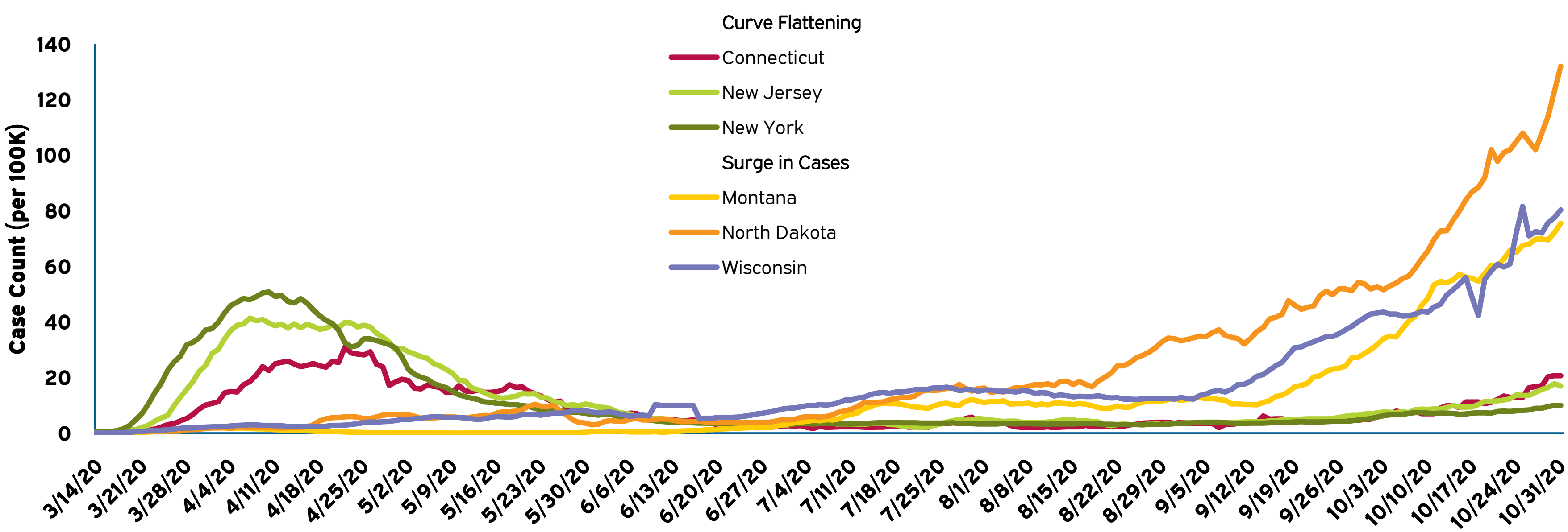


- Cases of COVID-19 continue to grow globally with now over 55 million reported cases across 191 countries.
- The US still has the highest number of cases, with India surpassing Brazil for the second spot. Europe has experienced the largest spike in case counts recently.

[1] Source: Bloomberg. Data is as of October 31, 2020.

[2] North Asia: China, Hong Kong, Japan, Russia, South Korea, and Taiwan. Southeast Asia: Singapore, India, Indonesia, Malaysia, Pakistan, Philippines, Thailand, Bangladesh, Sri Lanka, and Vietnam. Europe: Austria, Belarus, Bulgaria, Croatia, Czech Republic, Denmark, France, Germany, Hungary, Italy, Netherlands, Norway, Poland, Romania, Spain, Sweden, United Kingdom, Switzerland, and Ukraine. Latin America: Chile, Brazil, Mexico, Argentina, Colombia, Peru, Venezuela, Ecuador, Panama, Paraguay, Costa Rica, Bolivia, Uruguay, El Salvador, Honduras, Cuba, Dominican Republic, Haiti, and Nicaragua. Middle East/North Africa: Algeria, Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syria, Turkey, Tunisia, United Arab Emirates, and Yemen.

New Daily Reported COVID-19 Cases[1]



- Cases are trending back up in most states. Some states experienced initial spikes in cases with subsequent improvements, while other states fared better early on and are now seeing cases spike.
- Moving into the colder months, with flu season and people spending more time indoors, infections are rising notably and putting significant stresses on the hardest hit areas and their respective healthcare systems.

[1] Source: TrackTheRecovery. Data is as of October 31, 2020.

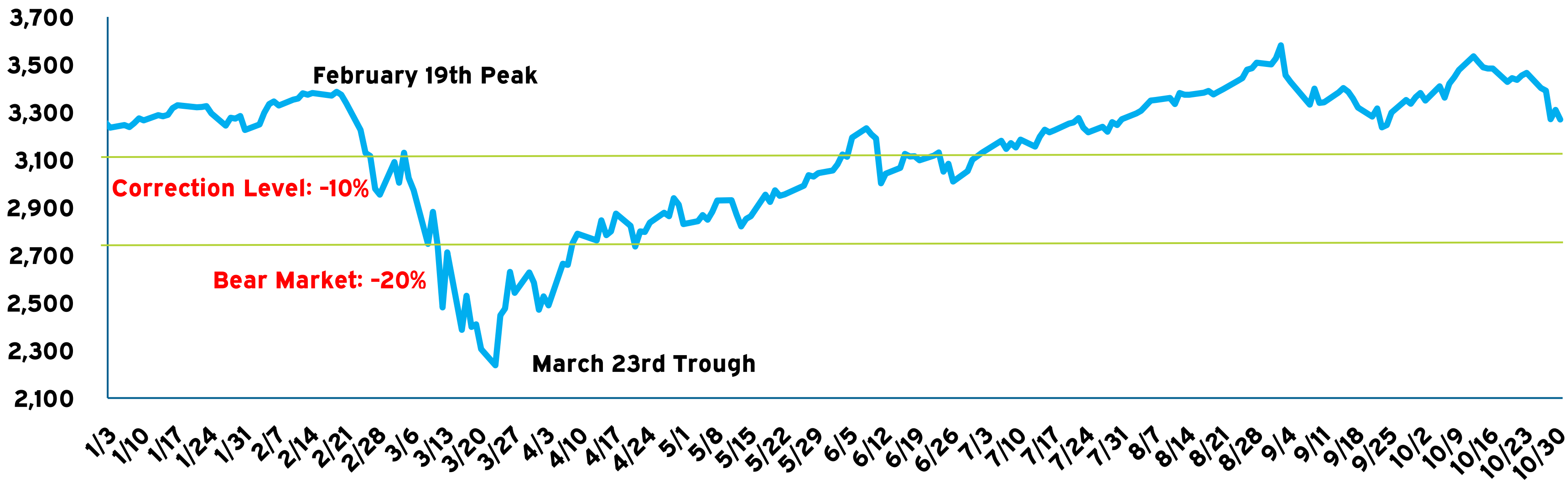
Market Returns[1]

Indices	October	YTD	1 Year	3 Year	5 Year	10 Year
S&P 500	-2.7%	2.8%	9.7%	10.4%	11.7%	13.0%
MSCI EAFE	-4.0%	-10.8%	-6.9%	-1.2%	2.8%	3.8%
MSCI Emerging Markets	2.1%	0.9%	8.3%	1.9%	7.9%	2.4%
MSCI China	5.3%	22.6%	35.7%	8.5%	12.7%	6.7%
Bloomberg Barclays Aggregate	-0.4%	6.3%	6.2%	5.1%	4.1%	3.6%
Bloomberg Barclays TIPS	-0.6%	8.5%	9.1%	5.5%	4.4%	3.2%
Bloomberg Barclays High Yield	0.5%	1.1%	3.5%	4.2%	6.3%	6.3%
10-year US Treasury	-1.6%	10.9%	10.0%	6.7%	3.9%	3.7%
30-year US Treasury	-4.2%	18.8%	16.5%	12.2%	7.6%	7.1%

- Global risk assets have recovered meaningfully from their lows, largely driven by record fiscal and monetary policy stimulus. The S&P 500 has appreciated by over 45% from its mid-March trough.
- European and Japanese equity markets have lagged behind the recovery in the US and emerging markets.
- In October, risk appetite waned on weakening US economic fundamentals and fears over rising virus cases.
- Counter to risk assets, longer-dated US interest rates rose over the month on expectations at the time for a greater fiscal stimulus package.

[1] Source: InvestorForce and Bloomberg. Data is as of October 31, 2020.

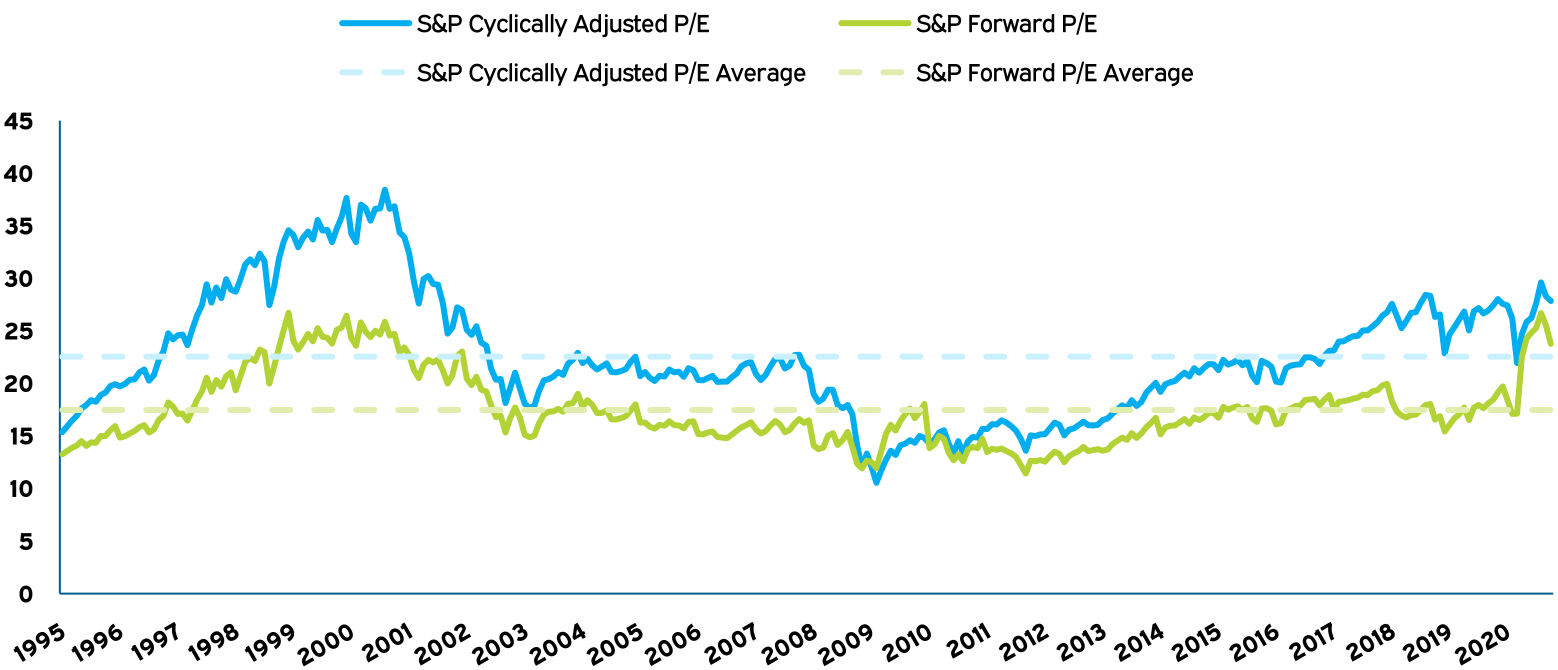
S&P 500 Fully Recovers[1]



- Given the anticipated economic carnage surrounding the pandemic, US stocks declined from a February peak into bear market (-20%) territory at the fastest pace in history.
- From the February 19 peak, the S&P 500 plunged 34% in just 24 trading days.
- After quickly rebounding from its lows and finishing above its pre-COVID levels at the end of August, the market retraced 2.7% in October, bringing its year-to-date gain to 2.8%.
  - After month-end, there have been significant market gains, given meaningful progress on a vaccine and the US election results.
- The key risk going forward remains that a spike in COVID-19 cases could slow, or reverse, reopening plans.

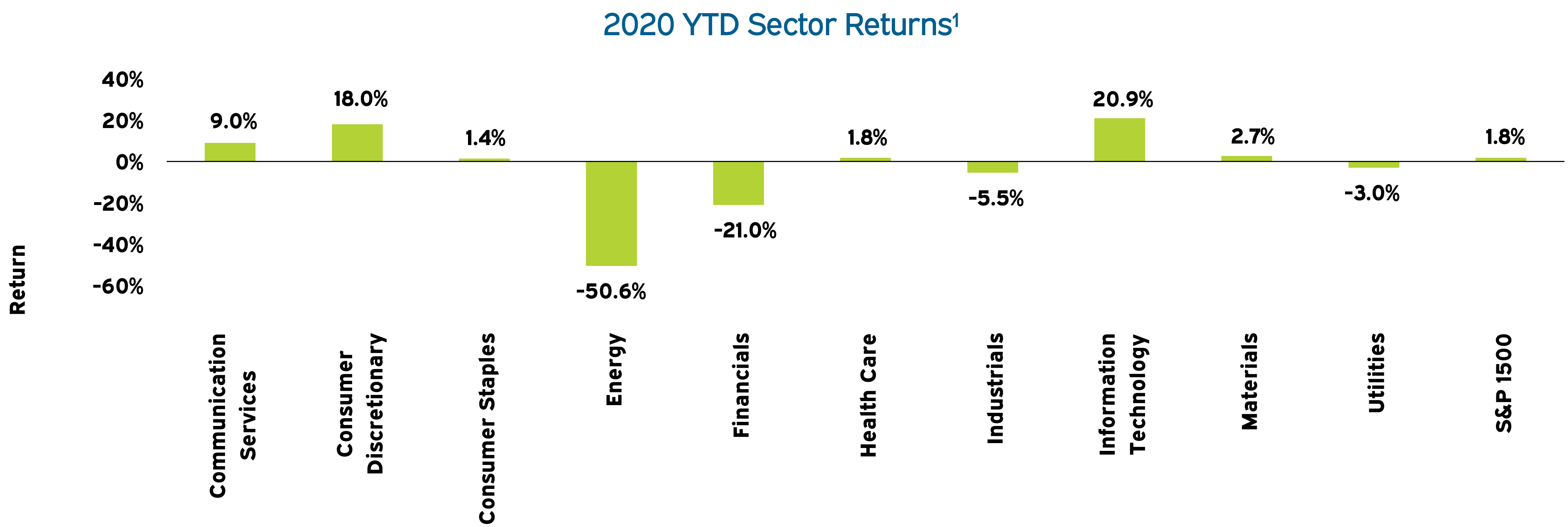
[1] Source: Bloomberg. Data is as of October 31, 2020.

S&P Equity Valuations[1]



- Despite the pullback in October, valuations based on both forward- and backward-looking earnings remain rich versus longer-term averages.
- Many are looking to improvements in earnings growth as the US economy continues to reopen to justify market levels, with historically low interest rates also providing support.

[1] Source: Bloomberg. Data is as of October 31, 2020.

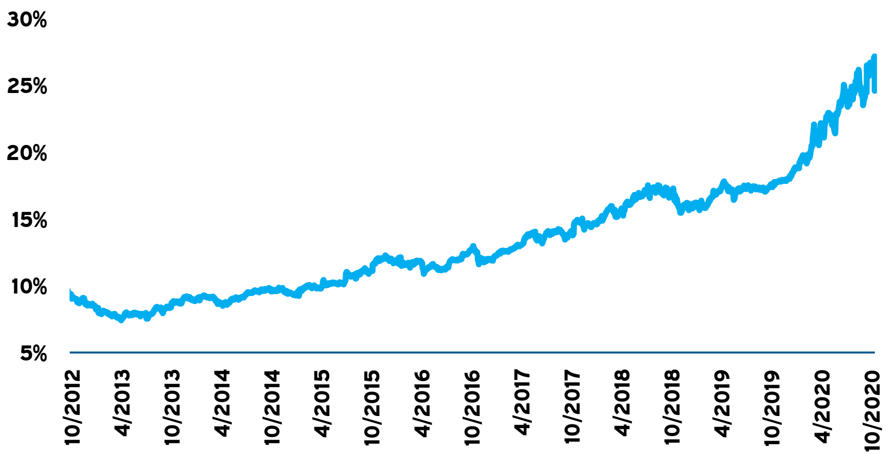


- Information technology remains the best performing sector, with a narrow group of companies including Amazon and Netflix driving market gains. The outperformance has been due to consumers moving to online purchases and streaming services.
- The consumer discretionary sector also experienced gains as the economy reopened, people returned to work, and stimulus checks were spent.
- Energy remains the sector with the greatest 2020 decline, triggered by the plunge in oil prices. Financials have also struggled in this slow growth environment with demand for loans down and low interest rates weighing on loan revenue.

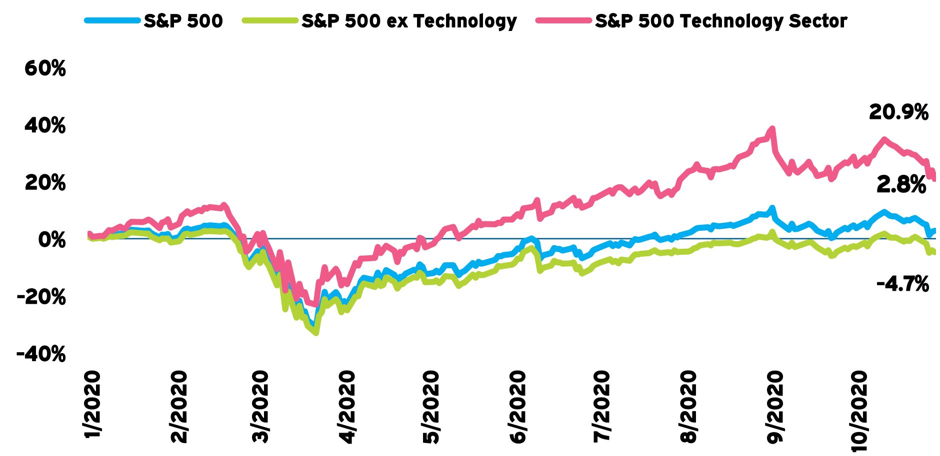
[1] Source: Bloomberg. Data is as of October 31, 2020.

Technology has led the way in the Rebound

FAANG+M Share of S&P 500[1]



Returns Year to Date through October 31[2]



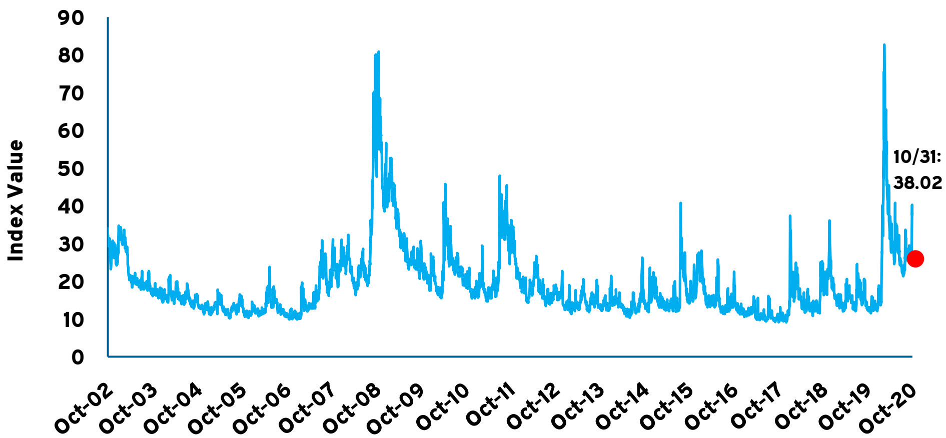
- The market recovery has largely been driven by a few select technology companies that benefited from the stay-at-home environment related to the virus.
- Year-to-date, the S&P 500 technology sector returned +20.9%, compared to -4.7% for the S&P 500 ex-technology index, with Amazon (+64%), Netflix (+47%), and Apple (+48%) posting strong results.
- The strong relative returns of these companies has led to them comprising an increasingly large portion (25%) of the S&P 500, which makes their future performance particularly impactful.

1 FAANG+M = Facebook, Amazon, Apple, Netflix, Google (Alphabet), and Microsoft. The percentage represents the aggregate market capitalization of the 6 companies compared to the total market capitalization of the S&P 500 as of October 31, 2020.

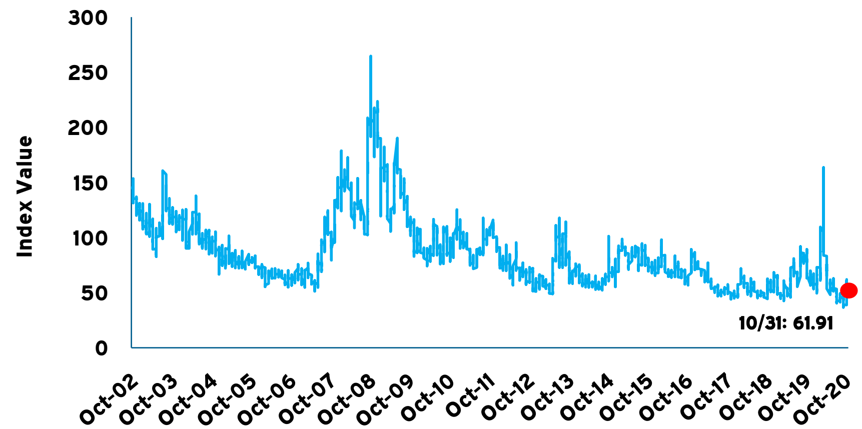
2 Each data point represents the price change relative to the 12/31/2019 starting value.

Volatility has Declined

VIX Index[1]



MOVE Index[2]



- Expectations of short-term equity volatility, as measured by the VIX index, have trended down from record levels, but increased in October due to increased cases and concerns over the US election outcome.
- At the recent peak, the VIX reached 82.7, surpassing the pinnacle of volatility during the GFC, thus showing the magnitude of the crisis and of investor fear.
- Expectations of volatility within fixed income, as represented by the MOVE index, spiked and then dropped to historic lows, helped by the broad level of monetary support and forward guidance by the Fed. Volatility expectations in fixed income modestly increased in October, influenced by the potential for increased fiscal stimulus.

[1] Source: Chicago Board of Exchange. Data is as of October 31, 2020.

[2] Source: Bloomberg. Data is as of October 31, 2020.

Global Financial Crisis Comparison

	2007-2009 Global Financial Crisis	COVID-19 Crisis
Primary Causes	Excess Risk Taking Due to: • Deregulation, un-constrained securitization, shadow banking system, fraud	Pandemic/Natural Disaster: • Large scale global restrictions on businesses and individuals leading to immediate and significant deterioration in economic fundamentals

	2007-2009 Global Financial Crisis	COVID-19 Crisis
Fiscal Measures	• American Recovery Reinvestment Act of 2009: $787 billion • Economic Stimulus Act of 2008: $152 billion	• PPP Act: $659 billion • CARES Act of 2020: $2.3 trillion • Families First Coronavirus Response Act: $150 billion • Coronavirus Preparedness & Response Supplemental Appropriations Act 2020: $8.3 billion • National Emergency: $50 billion

	2007-2009 Global Financial Crisis	COVID-19 Crisis
Monetary Measures		
Lowering Fed Funds Rate	X	X
Quantitative Easing	X	X
Primary Dealer Repos	X	X
Central Bank Swap Lines	X	X
Commercial Paper Funding Facility	X	X
Primary Dealers Credit Facility	X	X
Money Market Lending Facility	X	X
Term Auction Facility	X	
TALF	X	X
TSLF	X	
FIMA Repo Facility		X
Primary & Secondary Corp. Debt		X
PPP Term Facility		X
Municipal Liquidity Facility		X
Main Street Loan Facility		X

Global Financial Crisis Comparison (continued)

- The US **fiscal** response to the COVID-19 Crisis has been materially larger than the response to the 2007-2009 Global Financial Crisis (GFC), and stimulus is acutely focused on areas of the economy showing the greatest need, including small- and mid-sized companies. For example, the Paycheck Protection Program (PPP) helped small businesses keep employees working by offering forgivable loans to cover salaries.
- On the **monetary** side, markets targeted during both crises represent those most in need, but for the COVID-19 Crisis the policy response was dramatically faster, measured in weeks, not years, as in the GFC.
- Of the monetary stimulus measures, the corporate debt (Primary & Secondary Corporate Debt) programs and Main Street Loan Facility are new and garnered much attention from market participants.
- Through the end of October, Fed programs have experienced various degrees of usage. However, at this point, none has come close to reaching program limits. Still, programs have been extended through December 2020, and the psychological value of knowing the programs are available, if necessary, likely supports market sentiment.

Policy Responses

	Fiscal	Monetary
United States	$50 billion to states for virus related support, interest waived on student loans, flexibility on tax payments and filings, expanded COVID-19 testing, paid sick leave for hourly workers, $2 trillion package for individuals, businesses, and state/local governments. Additional $484 billion package to replenish small business loans, provide funding to hospitals, and increase testing.	Cut policy rates to zero, outcome-based forward guidance suggesting aggressively accommodative policy for the foreseeable future, unlimited QE4, offering trillions in repo market funding, restarted and extended CPFF, PDCF, MMMF programs to support lending and financing markets, expanded US dollar swap lines with foreign central banks, announced IG corporate debt buying program with subsequent amendment for certain HY securities, Main Street Lending program, Muni liquidity facility, repo facility with foreign central banks, easing of some financial regulations for lenders, and changing the inflation mandate to an average target of 2.0%
Euro Area	European Union: Shared 750 billion euro stimulus package. Germany: 220 billion euro stimulus France: 57 billion euro stimulus. Italy: 75 billion euro stimulus. Spain: 200 billion euro and 700 million euro loan and aid package, respectively.	Targeted longer-term refinancing operations aimed at small and medium sized businesses, under more favorable pricing, and announced the 750 billion euro Pandemic Emergency Purchase Program, and then expanded the purchases to include lower-quality corporate debt.
Japan	Hundreds of trillions in yen stimulus for citizens and businesses, including low interest loans, deferrals on taxes, and direct cash handouts.	Initially increased QE purchases (ETFs, corporate bonds, and CP) and then expanded to unlimited purchases and doubling of corporate debt and commercial paper, expanded collateral and liquidity requirements, and 0% interest loans to businesses hurt by virus.
China	Tax cuts, low-interest business loans, extra payments to gov't benefit recipients.	Expanded repo facility, policy rate cuts, lowered reserve requirements, loan-purchase scheme.
Canada	$7.1 billion in loans to businesses to help with virus damage, C$381 billion stimulus.	Cut policy rates, expanded bond-buying and repos, lowered bank reserve requirements.
UK (BOE)	190 billion pound stimulus, Tax cut for retailers, small business cash grants, benefits for those infected with virus, expanded access to gov't benefits for self and un-employed.	Lowered policy rates and capital requirements for UK banks, restarts QE program and subsequently increased the purchase amounts.
Australia	$11.4 billion, subsidies for impacted industries like tourism, one-time payment to gov't benefit recipients.	Policy rate cut, started QE.

Next Round of US Fiscal Stimulus

	Republican Proposal[1]	Democratic Proposal[2]
Status	Offered by the President and republican leaders in mid-October	Passed in House on October 1
Direct payments	$1,200 for adults, $1,000 per child	$1,200 for adults, $500 per dependent
Unemployment / Assistance	$400 per week, through the third week of January and retroactive to Sept. 12	$600 per week enhanced unemployment benefit through January. 15% increase in food stamps
State and local aid	$300 billion	$436 billion
Airlines	$20 billion	$25 billion
Paycheck Protection	$330 billion	Extend program
Testing / Tracing / Healthcare	$175 billion	$75 billion
Education	$150 billion	$225 billion
Childcare	$25 billion	$57 billion
Total	$1.8 Trillion	$2.2 Trillion

- The next round of fiscal stimulus that the market has been anticipating remains in gridlock.
- Without further stimulus, many businesses might not survive, particularly services like restaurants, as we move into the colder months in much of the country.
- The enhanced unemployment benefits from the initial stimulus program were particularly impactful to those without jobs. After it ended in July an extension of a lesser amount ($300 extra per week) was implemented, but is in the process of winding down and at risk of ending without replacement.

[1] Source: https://www.cnbc.com/2020/10/10/pelosi-dismisses-trump-coronavirus-stimulus-offer.html

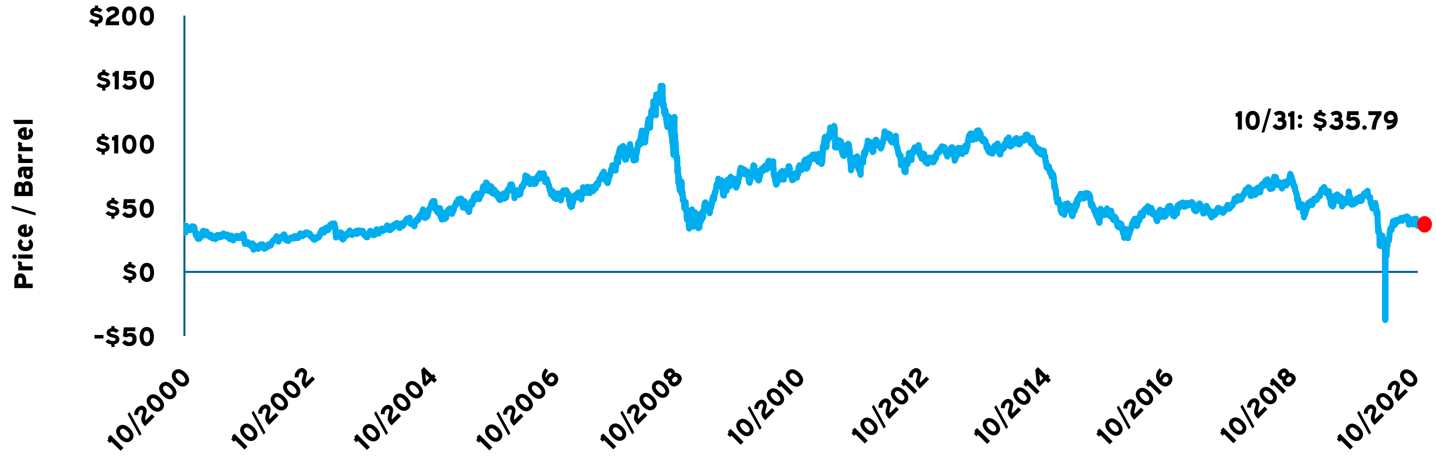
[2] Source: https://www.cnbc.com/2020/10/01/coronavirus-stimulus-update-house-passes-democratic-relief-bill.html

Election Results Likely Leave a Split Government

	Result	Change from Previous	Potential Implications
Presidency	• Democratic victory.	• Donald Trump, Republican, to leave office January 20th.	• Day one executive actions announced to set new 12 person COVID-19 task force, rejoin the WHO, repeal Muslim travel ban, reinstate DACA program, and rejoin Paris climate accord. • Biden listed a number of other priorities on the campaign trail that include addressing systemic racism, climate change, and expanding protections for union employees. • Additional plans include bills for infrastructure, trade, foreign policy, and tax increases, but all seem less likely given the potential for a divided congress.
Senate	• 48 seats for the Democrats. • 50 seats for the Republicans. • 2 seats to be decided in a January run off in Georgia.	• Yet to be determined. Democrats will pick up between 2 and 4 seats. • It is possible, though unlikely, that the Democrats can win both run offs and obtain a supermajority with Vice President elect Harris casting the tiebreaking vote.	• Biden's agenda is particularly impacted by a divided Congress in a few key areas, namely the next round of fiscal stimulus (lesser amount), cabinet appointments (more moderate), tax reform (less rollbacks of Trump cuts), infrastructure spending (less green, less in amount).
House	• Democratic majority maintained. • As of November 16th 219 seats for Democrats, 203 seats for Republicans, and 13 still to be decided.	• Heading into the November 3, 2020, election, Democrats held a 232-197 advantage in the US House. Libertarians held one seat, and five seats were vacant.	• While the Democrats maintained their majority and therefore control of the agenda, Republicans gained ground, setting up a close battle for the midterms in 2022. • Nancy Pelosi remains Speaker of the House.

- While the path to final election results could be bumpy, we do know that ultimately the new President will be sworn in on January 20th, with the two Senate run-off elections in Georgia taking place in January as well.
- Overall markets have generally responded positively to the election results, as the potential for a divided government has reduced fears over higher taxes and fiscal stimulus.

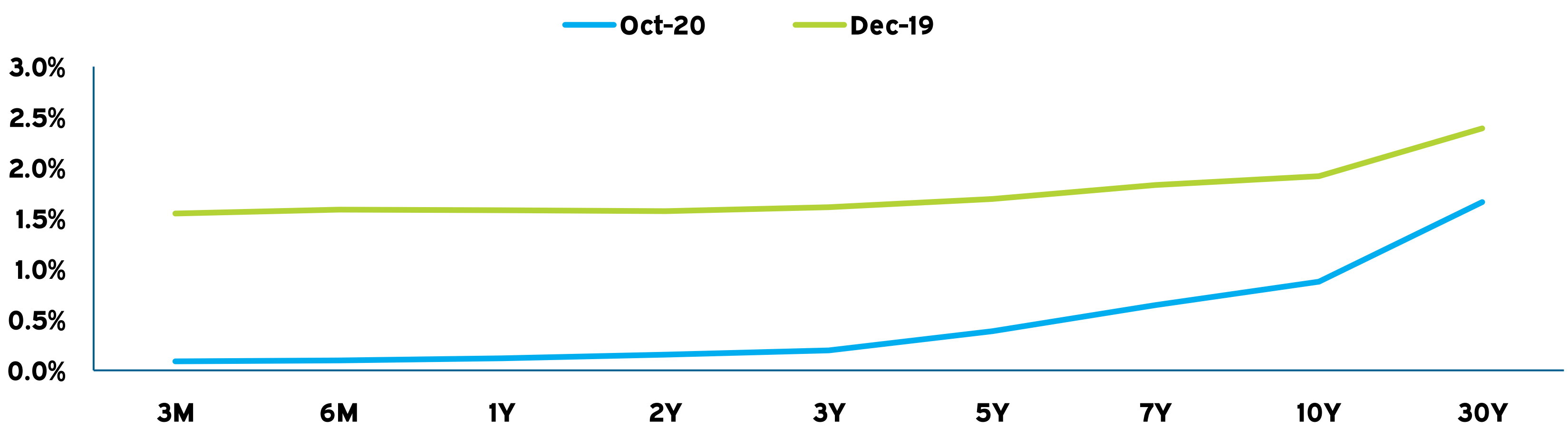
Oil Prices (WTI)[1]



- While global oil prices have rallied from April lows, they remain below their pre-pandemic level.
- In October, OPEC+ maintained their 7.7 million barrels/day production cuts (~8% of global output) in an effort to support oil prices.
- Counterbalancing the OPEC+ production cut agreement, US oil producers (particularly shale output) are turning wells back on, due to higher prices.
- If OPEC+ starts rolling back production cuts, and if an increasing virus spread weighs on demand, oil prices could experience renewed downward pressure.

[1] Source: Bloomberg. Represents WTI first available futures contract. Data is as of October 31, 2020.

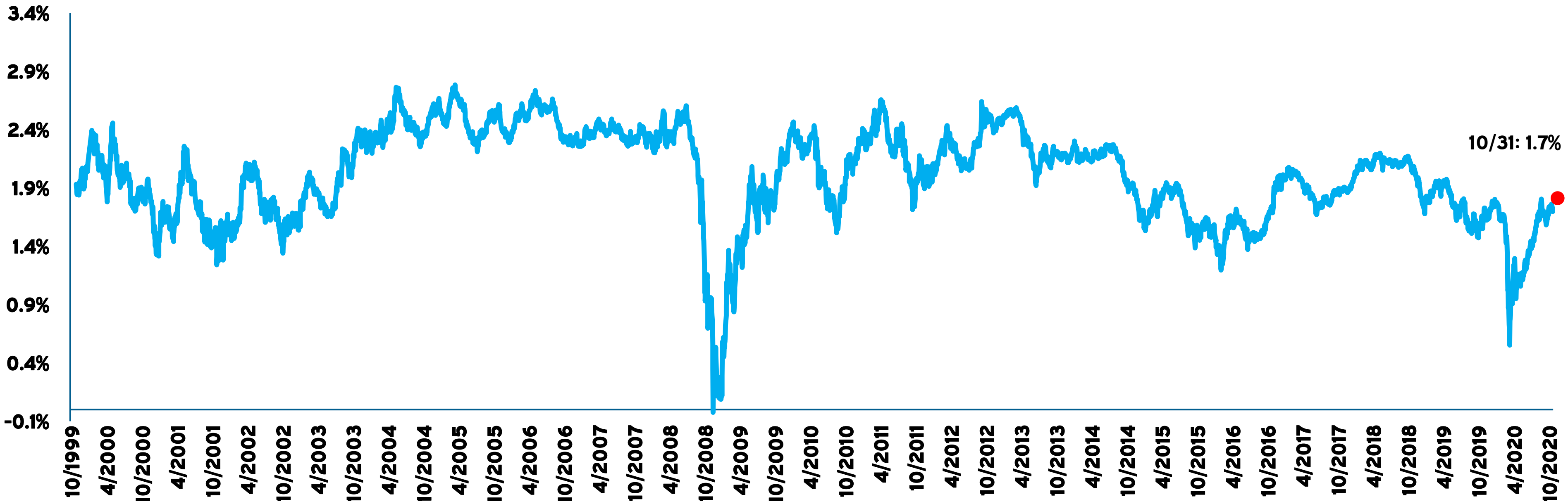
US Yield Curve Declines[1]



- The US Treasury yield curve declined materially during 2020, driven by safe-haven demand, Federal Reserve polices (policy rate cuts and the quantitative easing program), and weak US economic fundamentals.
- Over the last few months, the curve has steepened on gradual signs of economic improvement and expectations for longer-dated Treasury issuance to support additional fiscal stimulus in the coming months.

[1] Source: Bloomberg. Data is as of October 31, 2020.

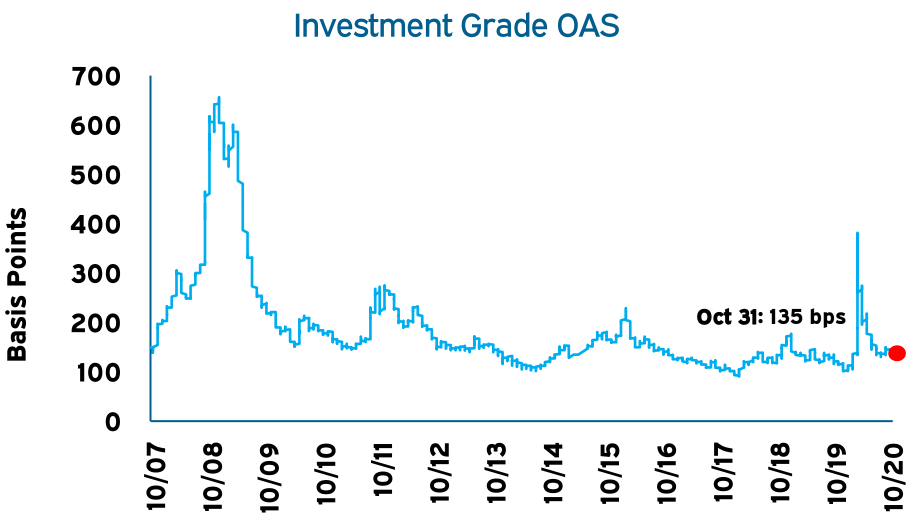
10-Year Breakeven Inflation[1]

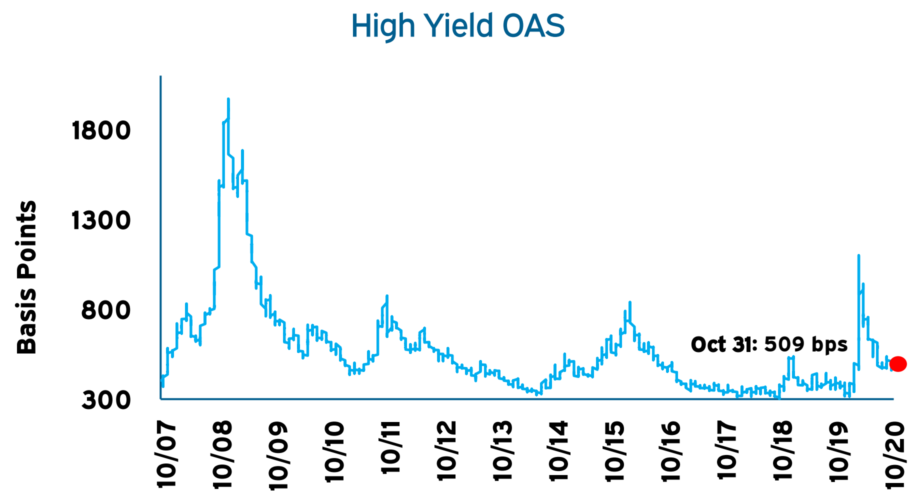


- Inflation breakeven rates initially declined sharply, due to a combination of lower growth and inflation expectations, as well as liquidity dynamics in TIPS during the height of market volatility.
- Liquidity eventually improved and breakeven rates increased as deflationary concerns moderated, but given the uncertainty regarding economic growth and the inflationary effects of the unprecedented US fiscal response, inflation expectations remain below historical averages.

[1] Source: Bloomberg. Data is as of October 31, 2020.

Credit Spreads (High Yield & Investment Grade)[1]

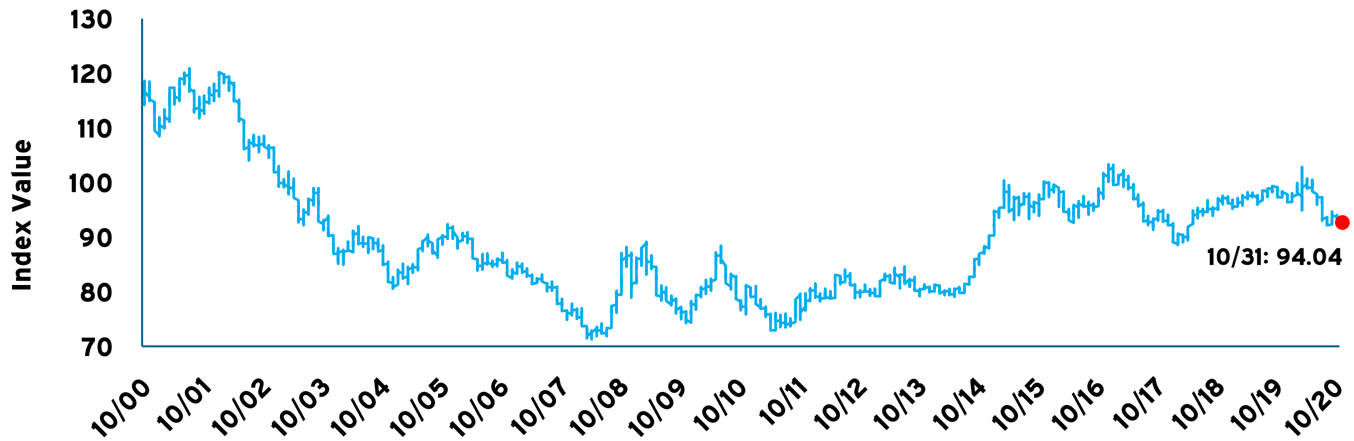




- Credit spreads (the spread above a comparable Treasury) for investment grade and high yield corporate debt widened sharply at the start of the pandemic as investors sought safety.
- Investment grade bonds held up better than high yield bonds. The Federal Reserve's corporate debt purchase program for investment grade and certain high yield securities recently downgraded from investment grade, was well received by investors, leading to a decline in spreads to around long-term averages.
- Overall, corporate debt issuance has more than doubled since 2008, which magnifies the impact of deterioration in the corporate debt market. This is particularly true in the energy sector, which represents over 10% of the high yield bond market.

[1] Source: Federal Reserve Bank of St. Louis Economic Research. Data is as of October 31, 2020.

US Dollar versus Broad Currencies[1]



- When financial markets began aggressively reacting to COVID-19 developments, the US dollar came under selling pressure as investors sought safe-haven exposure.
- As the crisis grew into a pandemic, investors' preferences shifted to holding US dollars and highly liquid, short-term securities like US Treasury bills.
- Recently we have seen some weakness in the dollar as the US struggles with containing the virus and investors seek higher-yielding non-US assets, particularly in emerging markets. This has created pressures on already stressed export-focused countries.
- Going forward, the dollar's safe haven quality and the relatively higher rates in the US could provide support.

[1] Source: Bloomberg. Represents the DXY Index. Data is as of October 31, 2020.

Economic Impact

Supply Chain Disruptions:

- Factories closing, increased cost of stagnant inventory, and disrupted supply agreements.
- Reduced travel, tourism, and separation policies including closed borders: Significant impact on service-based economies.

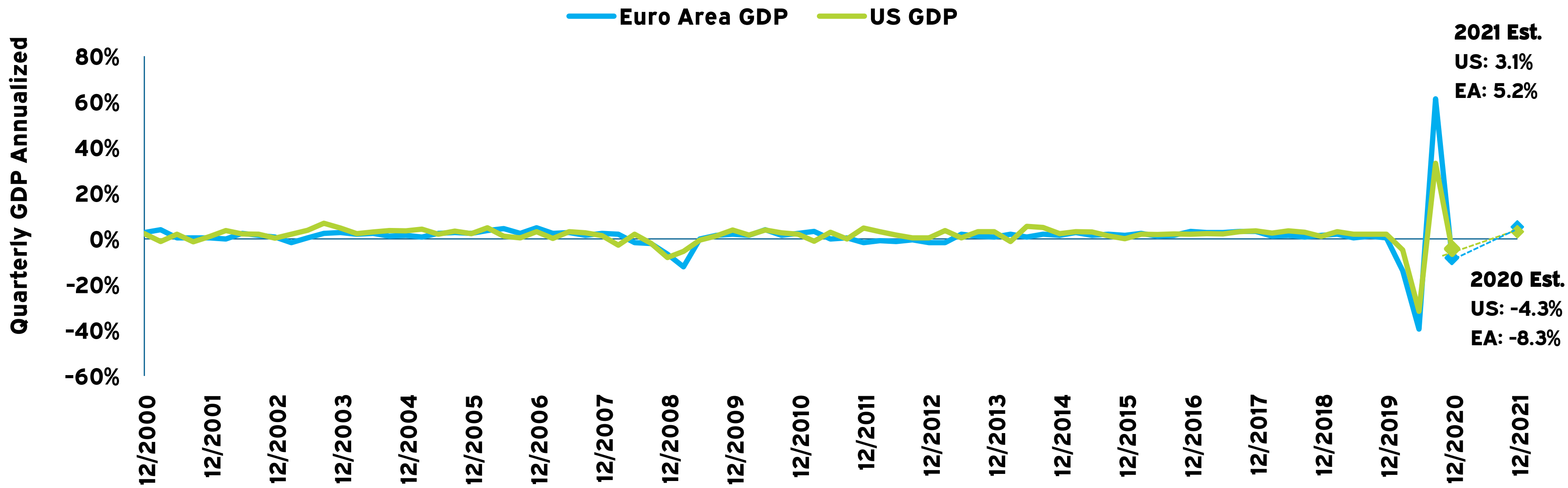
Labor Force Impacts:

- Huge layoffs across service and manufacturing economies.
- Increased strains as workforce productivity declines from increased societal responsibilities (e.g., home schooling of children) and lower functionality working from home.
- Illnesses from the disease also depresses the labor force.

Declines in Business and Consumer Sentiment:

- Sentiment drives investment and consumption, which leads to increased recessionary pressures as sentiment slips.

GDP Data Shows Impact of the Pandemic[1]

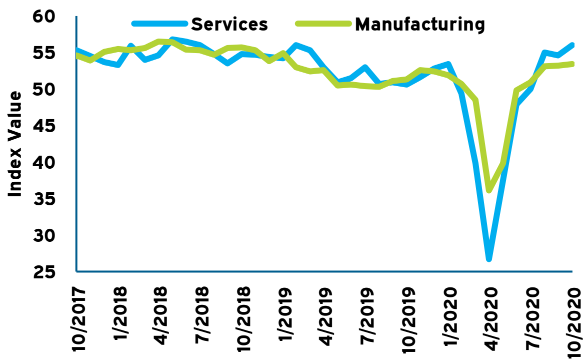


- The global economy faces major recessionary pressures this year, but optimism remains for improvements in 2021, as economies are expected to gradually reopen despite the recent spike in virus cases.
- Historic declines in growth in the US and Europe during the second quarter, were followed by record increases in the third quarter, due to pent up demand from the lockdown measures earlier in the year.
- At the middle of November, Bloomberg Economics estimated that fourth quarter US GDP growth could be 2.5% (QoQ annualized). Full year US GDP growth is forecasted to decline by 4.3%.

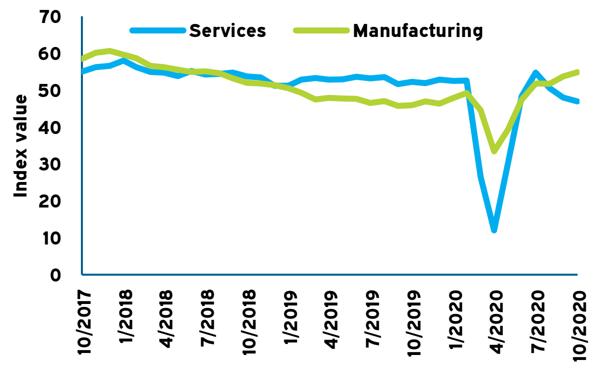
[1] Source: Bloomberg and IMF. Q3 2020 data represents the first estimate of GDP for the Euro Area and United States. Euro Area figures annualized by Meketa. Projections via October 2020 IMF World Economic Outlook and represent annual numbers.

Global PMIs

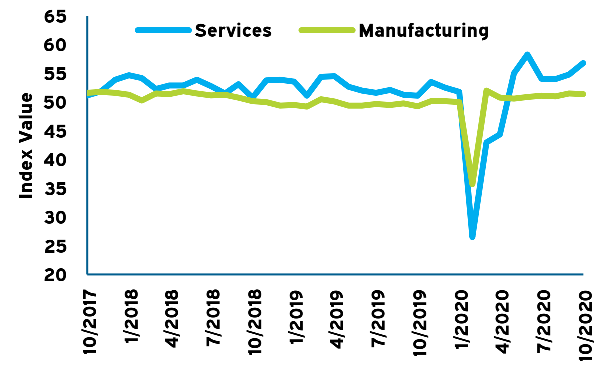
US PMI[1]



Eurozone PMI[2]



China PMI[3]



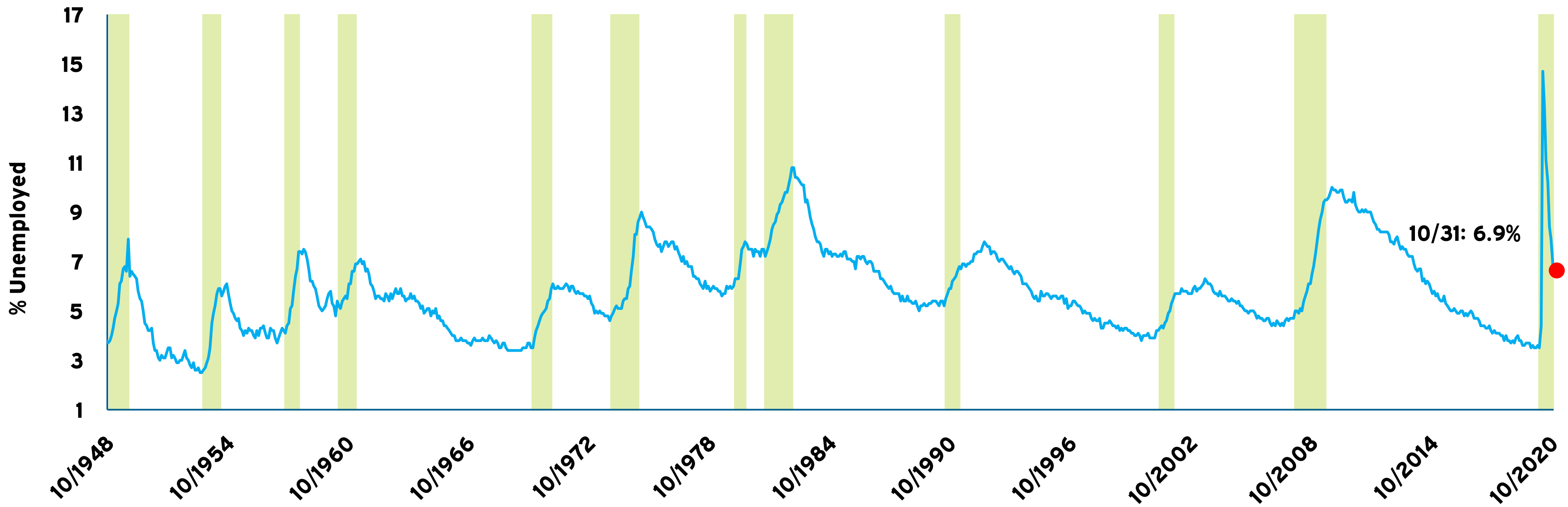
- Purchasing Managers Indices (PMI), based on surveys of private sector companies, initially collapsed across the world to record lows, as output, new orders, production, and employment were materially impacted by closed economies.
- Readings below 50 represent contractions across underlying components and act as a leading indicator of economic activity, including the future paths of GDP, employment, and industrial production.
- The services sector was particularly hard hit by stay-at-home restrictions in many places.
- As the Chinese economy reopened, their PMI's, particularly in the service sector, recovered materially. In the US and Europe, the indices have also improved from their lows to above contraction levels, in most cases.

[1] Source: Bloomberg. US Markit Services and Manufacturing PMI. Data is as of October 2020.

[2] Source: Bloomberg. Eurozone Markit Services and Manufacturing PMI. Data is as of October 2020.

[3] Source: Bloomberg. Caixin Services and Manufacturing PMI. Data is as of October 2020.

US Unemployment Rate[1]

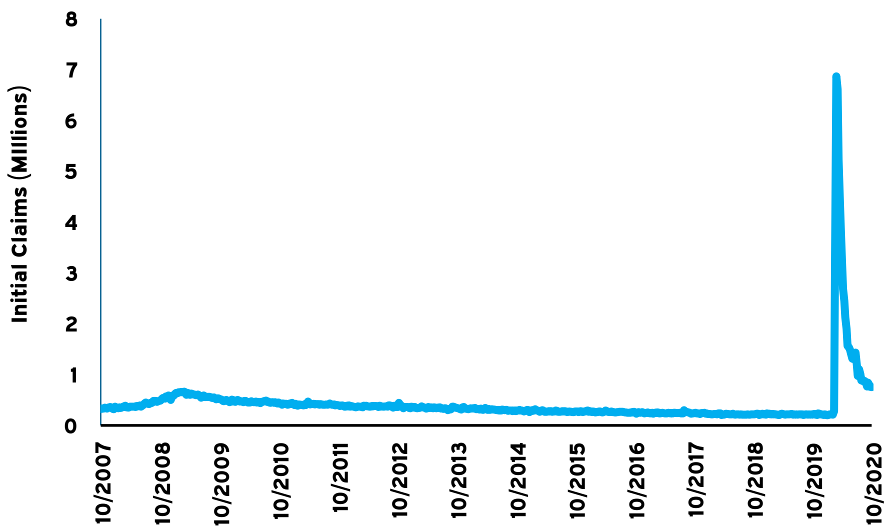


- In October, the unemployment rate continued its decline from the recent April 14.7% peak, falling to 6.9% as businesses and consumers emerged from the lockdown.
- Despite the improvement, unemployment levels remain well above pre-virus readings and are likely higher than reported, as some workers appear misclassified. According to the Bureau of Labor Statistics, absent the misclassification issue, the October unemployment rate would be higher by 0.3%.
- The recent spike in infections and the potential shutting down of some parts of the economy, could lead to an increase in the unemployment rate.

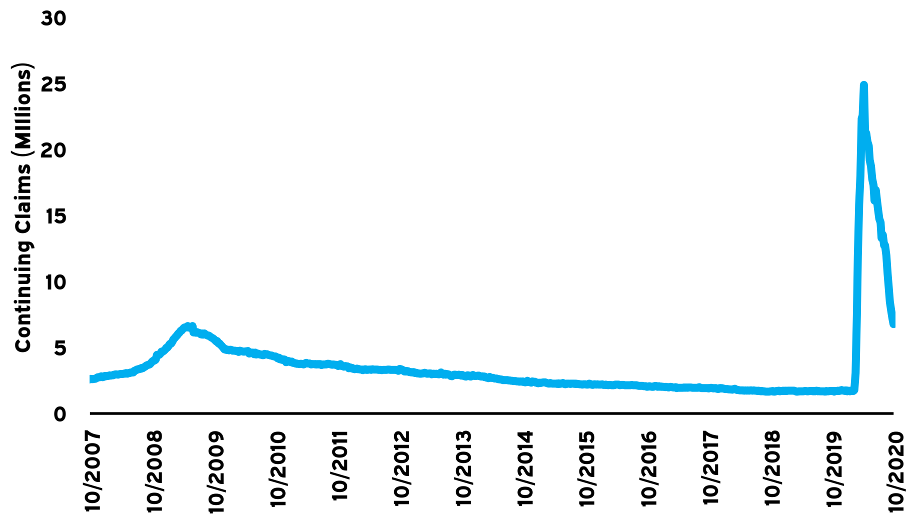
[1] Source: Bloomberg. Data is as of October 31, 2020. Bars represent recessions.

US Jobless Claims

US Initial Jobless Claims[1]



Continuing Claims[2]

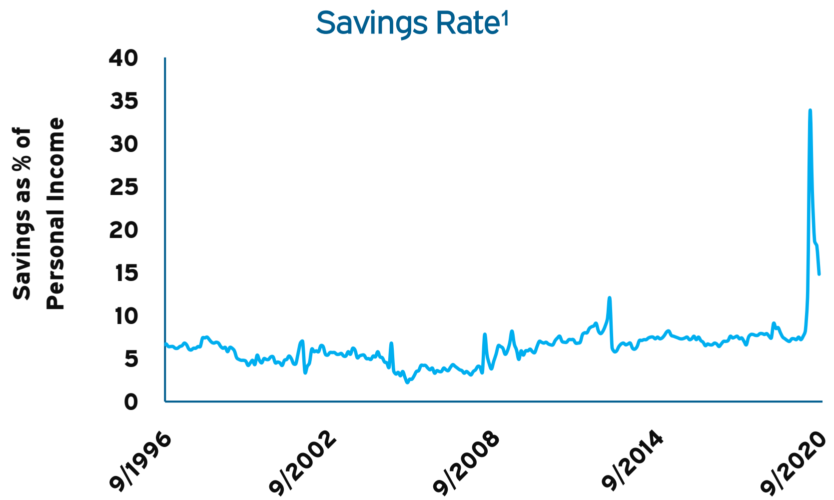


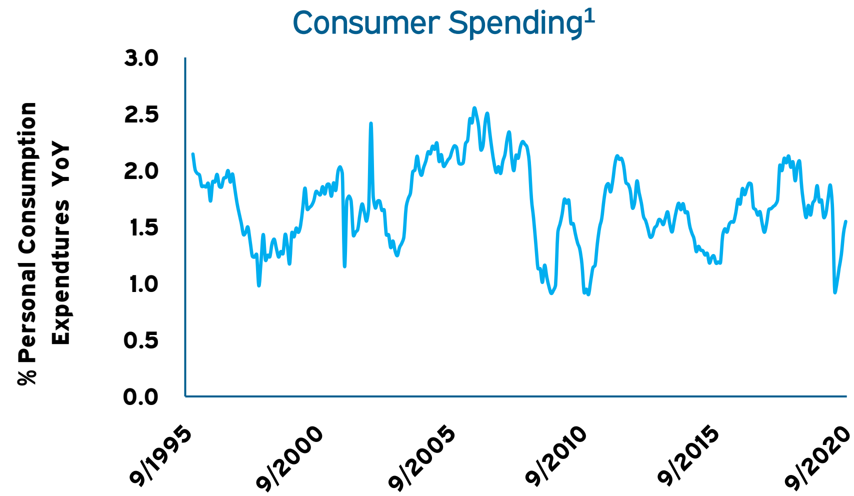
- Over the last 33 weeks, roughly 61 million people filed for initial unemployment. This level far exceeds the 22 million jobs added since the GFC, highlighting the unprecedented impact of the virus.
- Despite the continued decline in initial jobless claims to below one million per week, levels remain many multiples above the worst reading during the Global Financial Crisis.
- Continuing jobless claims (i.e., those currently receiving benefits) have also declined from record levels, but remain elevated at 6.8 million.

[1] Source: Bloomberg. First reading of seasonally adjusted initial jobless claims. Data is as of October 31, 2020.

[2] Source: Bloomberg. US Continuing Jobless Claims SA. Data is as of October 31, 2020.

Savings and Spending



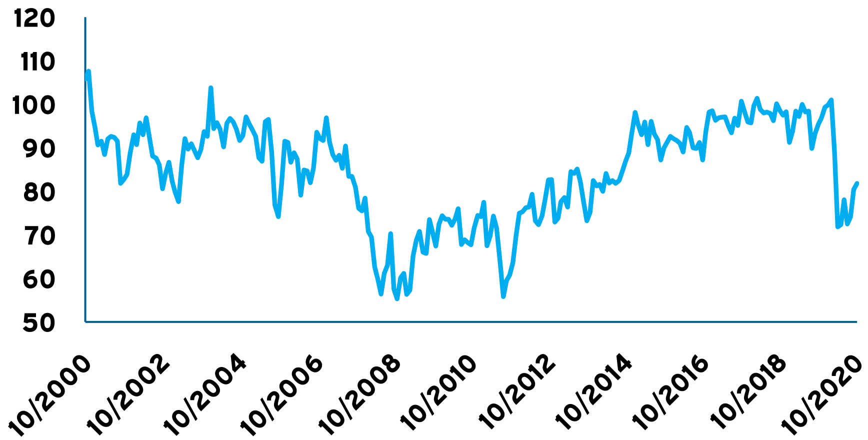


- Fiscal programs including stimulus checks, enhanced unemployment benefits, and loans to small businesses through the Paycheck Protection Program (PPP) have largely supported income levels through the shutdown.
- Despite the income support, the savings rate increased due to the decline in consumer spending, driven by the initial lock-down of the economy, and by uncertainties related to the future of the job market and stimulus programs.
- More recently, the savings rate declined from its peak as spending increased with the economy slowly reopening.

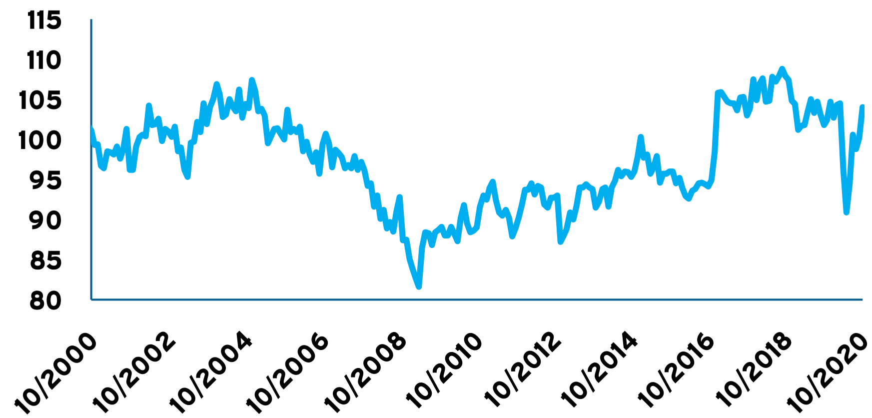
[1] Source: Bloomberg. Latest data is as of September 30, 2020.

Sentiment Indicators

University of Michigan Consumer Sentiment[1]



Small Business Confidence[2]



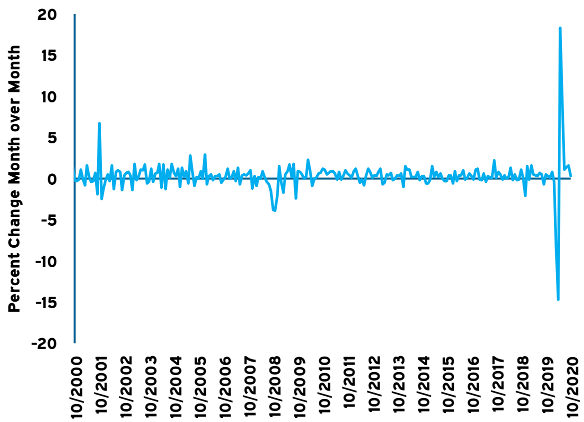
- A strong indicator of future economic activity are the attitudes of businesses and consumers today.
- Consumer spending comprises close to 70% of US GDP, making the attitudes of consumers an important driver of economic growth. Additionally, small businesses generate around half of US GDP, making sentiment in that segment important.
- Sentiment indicators have shown some improvements as the economy re-opens, particularly for small businesses which are approaching pre-pandemic levels.

[1] Source: Bloomberg. University of Michigan Consumer Sentiment Index. Data is as of October 31, 2020.

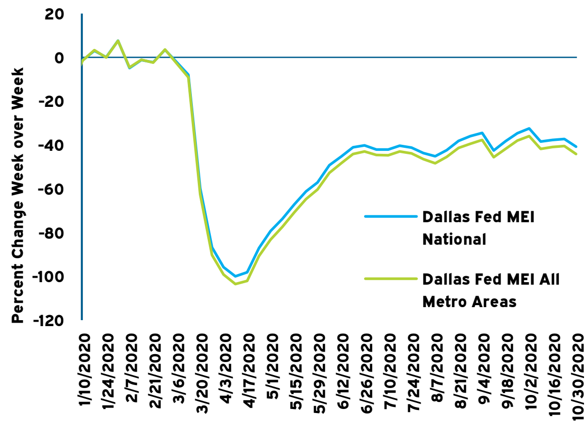
[2] Source: Bloomberg. NFIB Small Business Optimism Index. Latest data is as of October 31, 2020.

Some US Data has Improved

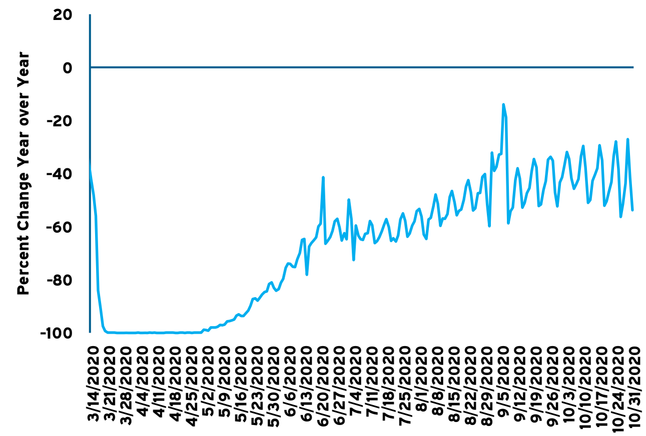
Retail Sales[1]



Dallas Fed Mobility and Engagement Index[2]



OpenTable Seated Diners YoY % Change[3]



- There have been improvements in high frequency data, but overall levels remain well below historical averages, and have slowed in some instances from the recent spike in cases.
- Generally, people have become more active as restrictions eased and stores reopened. Retail sales recovered from a record decline with six consecutive months of growth as the economy reopened, but the pace of growth has been declining.
- Restaurants have seen some improvements from the dramatic declines earlier in the year, but seating remains around half the level from a year prior as in-store dining has contributed to the increase in infections.

[1] Source: Bloomberg. Data is as of October 31, 2020 and represents the US Retail Sales SA MoM%.

[2] Source: Bloomberg. Data is as of October 31, 2020 and represents the deviation from normal mobility behaviors induced by COVID-19 (formerly the "Social Distancing Index"). The index represents a weighted average of various lengths of time that a mobile device, like a cell phone, leaves its "home" or place of residence, and/or how long a device stays at home. A decline in this index represents a mobile device at home for a longer period of time than average.

[3] Source: Bloomberg. This data shows year-over-year seated diners at restaurants on the OpenTable network across all channels: online reservations, phone reservations, and walk-ins. Only states or cities with 50+ restaurants in the sample are included. All such restaurants on the OpenTable network in either period are included. Data is as of October 31, 2020. Index start date 2/19/20.

Looking Forward…

- There has been a significant economic impact and a global recession.
  - How deep it will be and how long it will last depend on factors (below) that are unknowable at this time.
- The length of the virus and country responses will be key considerations.
  - As of now, despite the recent vaccine announcements it is not clear the end is in sight, particularly with the recent increases in cases in certain areas; however, individual countries are attempting to lay the groundwork to support recoveries in their economies.
- Central banks and governments are pledging support, but will it be enough?
  - Market reactions to announced policies have been positive, but additional support will likely be required until the virus gets better contained and a vaccine is distributed.
- Expect heightened market volatility should economies start to shut back down in response to the recent spike in cases.
  - This has been a consistent theme recently; volatility is likely to remain at risk of spiking again for the foreseeable future.
- It is important to retain a long-term focus.
  - History supports the argument that maintaining a long-term focus will ultimately prove beneficial for diversified portfolios.

Prior Drawdowns and Recoveries from 1926-2020[1]

Period	Peak-to-Trough Decline of the S&P 500	Approximate Time to Recovery
Sept 1929 to June 1932	-85%	266 months
February 1937 to April 1942	-57%	48 months
May 1946 to February 1948	-25%	27 months
August 1956 to October 1957	-22%	11 months
December 1961 to June 1962	-28%	14 months
February 1966 to October 1966	-22%	7 months
November 1968 to May 1970	-36%	21 months
January 1973 to October 1974	-48%	69 months
October 1976 to March 1978	-19%	17 months
November 1980 to August 1982	-27%	3 months
August 1987 to December 1987	-32%	19 months
July 1990 to October 1990	-20%	4 months
July 1998 to August 1998	-19%	3 months
March 2000 to October 2002	-49%	56 months
October 2007 to March 2009	-57%	49 months
February 2020 to March 2020	-34%	6 months
Average	**-36%**	**39 months**
Average ex. Great Depression	**-33%**	**24 months**

- As markets have fully recovered to above pre-COVID levels, questions remain about the sustainability of the rally.
- The six-month recovery period represents one of the shortest on record, similar to the historic decline.

[1] Source: Goldman Sachs.

Implications for Clients

- Portfolios have experienced significant improvements from the March lows.
- Diversification and a disciplined rebalancing approach worked.
- Even though equity markets have recovered from their lows, it is important to remain vigilant and be prepared to rebalance if high volatility returns.
  - Before rebalancing, consider changes in liquidity needs given the potential for cash inflows to decline in some cases.
  - Also, consider the cost of rebalancing if investment liquidity declines.

Performance YTD
(through October 31, 2020)

S&P 500	ACWI (ex. US)	Aggregate Bond Index	Balanced Portfolio[1]
2.8%	-7.5%	6.3%	1.7%

- Meketa will continue to monitor the situation and communicate frequently.
  - The situation is fluid and the economic impact is uncertain at this stage.
- Please feel free to reach out with any questions.

[1] Source: InvestorForce. Balanced Portfolio represents 60% MSCI ACWI and 40% Bloomberg Barclays Global Aggregate.

Disclaimers