CHARTBOOK

March 31st, 2020

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ECONOMIC PERSPECTIVE

COVID-19 Economic Impact

World GDP by Region
2020 Impact

	% Impact	% Growth 2020		% Growth 2009
		Pre-COVID	Current	
Advanced Economies				
U.S.	-5.0	2.1	-2.9	-2.5
Europe	-6.5	1.6	-4.9	-4.2
Japan	-2.5	0.5	-2.0	-5.4
UK	-4.0	1.4	-2.6	-4.2
Canada	-5.0	1.8	-3.2	-2.9
Other	-2.5	2.0	-0.5	-0.8
Subtotal	**-5.0**	**1.7**	**-3.3**	**-3.3**
Emerging Markets				
China	-7.1	4.7	-2.4	9.4
EM Ex-China	-3.0	3.9	0.9	0.6
Subtotal	**-4.3**	**4.2**	**-0.1**	**2.8**
World Total	**-4.6**	**3.2**	**-1.4**	**-0.1**

Graph Source: Morningstar

Morningstar's Analysis
We now forecast U.S. real GDP growth of negative 2.9% in 2020 (after deducting a COVID-19 impact of 5%). For global GDP, we expect a decline of 1.4%, implying a recession on par with 2008-09. Our U.S. forecast is based on our detailed scenarios as we project the industry-level impact of mitigation strategies. We think the scope of shutdown orders to disrupt the U.S. economy is probably overrated, as large swaths of the U.S. economy are exempt from the orders. Meanwhile, historically large fiscal stimulus should prevent a collapse in the demand side of the economy.

We think the larger driver of GDP impact will be the "direct" impact from COVID-19, mainly including business closures and voluntary social distancing. In economic terminology, the direct impact is more of a supply-side impact, by reducing the economy's overall productivity capacity. The direct impact accounts for 330 basis points of GDP impact across our scenarios.

On the other hand, we think the indirect impact will be just 170 basis points thanks to the aggressive fiscal and monetary policy being deployed, which should prop up aggregate demand in the U.S. economy, offsetting lost spending power among unemployed as well as lower economic confidence.

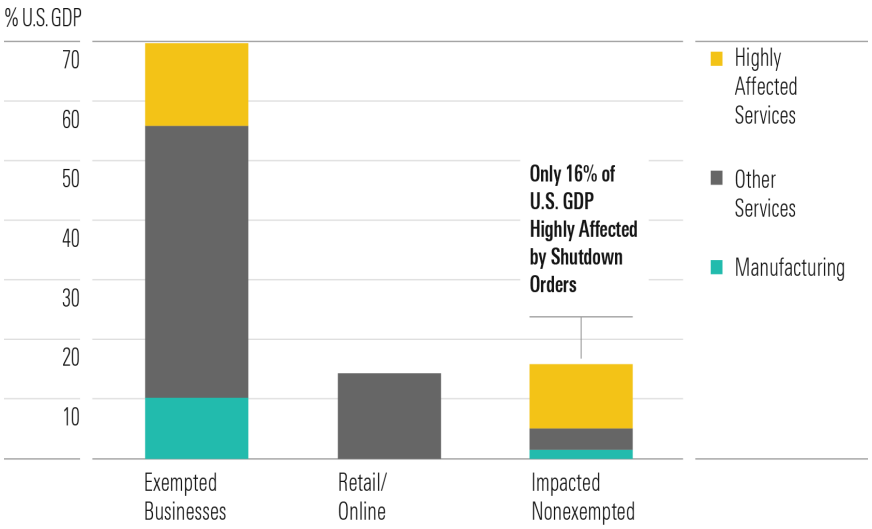
There's only so much that countercyclical economic policy can do, though. Unless these policies somehow help workers and capital in temporarily affected industries like retail, restaurants, and hotels redeploy to other industries (not likely), there is little hope of preventing some sort of direct economic impact from COVID-19. However, these policies play a crucial role in limiting the economic damage and minimizing the risk of a worst-case, Great Depression-style scenario.

Overall, we still expect a modest long-run economic impact, with GDP down 0.9%. This is much less than what is implied by the 20%-plus drop in global equities since February. In our view, a COVID-19 recession doesn't fit the mold of a 2008-style recession with longer-lasting economic impact.

Source: Morningstar

COVID-19 Economic Impact

Shutdown Orders Implemented in U.S. States Exempt Most of the Economy



Graph Source: Morningstar

State Shutdown Orders Exempt Most of the Economy

In March, 28 U.S. states (covering 60% of the U.S. population) have announced stay-at-home orders of some form. Most of the orders stipulate at least a two-week duration. Most substantively, these orders mandate the shutdown of all nonessential businesses, sparking fears of a sharp crash to economic activity. However, we think the economic impact of the orders could be exaggerated. We estimate that only 16% of U.S. GDP will be affected by these orders, even if implemented in all 50 U.S. states.

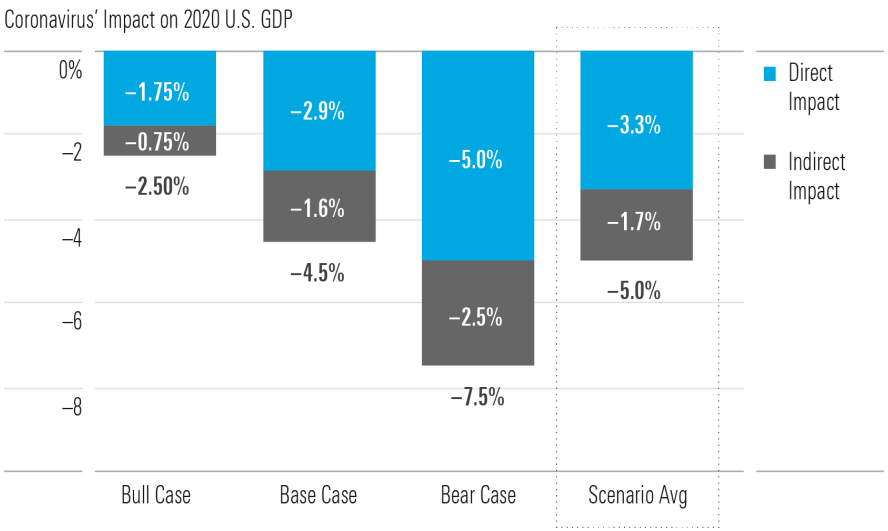
The definition of essential businesses has cast a wide net in most states' orders, covering about 70% of U.S. GDP, by our estimates. Large industries such as agriculture, utilities, construction, logistics, healthcare, public services, and much of manufacturing have been exempted as essential businesses. Many otherwise nonessential businesses that are key suppliers for essential businesses are also exempt. Many companies remain unclear on their exemption status; however, we expect exemptions to be progressively widened as the spread of COVID-19 decelerates and industry pressure increases.

We think the wide availability of shutdown exemptions makes sense. The businesses that have been uniformly nonexempted (such as restaurants, hotels, offices, retail, gyms, and salons) have a relatively high ratio of social interactions per unit of GDP. This means that we can cut down on social interactions drastically without having to cut GDP proportionately. The remaining businesses have a lower ratio of social interactions to GDP. They can be shut down should current methods fail, which we do not expect. Finally, out of the 30% of businesses that remain nonexempted, we think nearly half can maintain operations on a remote or online basis. Any workers required to be on-premises to support these businesses (such as those needed to maintain IT systems) are generally allowed to do so.

Source: Morningstar

COVID-19 Economic Impact

Indirect Impact to U.S. GDP Should Be Capped by Aggressive Fiscal Stimulus



Manufacturing and Services Hit About Equally
We forecast that the 2020 coronavirus slowdown will be driven about equally by manufacturing and services. This is because the direct hit from the virus will fall primarily on the services sector, which will see much of its activity cut back for social distancing purposes. The private services sector accounts for around three fourths of U.S. GDP now. However, analysts shouldn't conflate the highly visible, most affected services (restaurants, retail, hotels, and so on) with the entire U.S. services sector.

We think manufacturing will take a large hit in 2020 due to the indirect impact of COVID-19 on overall economic activity. Consumers tend to reduce their purchases of durable goods more than other types of expenditures during a recession, and durable goods have a much higher manufacturing intensity than other forms of consumption. We don't expect factory shutdowns to cause a large direct impact on manufacturing. Manufacturing has been largely exempted from government-mandated shutdowns. The voluntary shutdowns we've seen have largely been confined to autos.

Source: Morningstar

Graph Source: Morningstar

COVID-19 Economic Impact

Services With High Social Interaction Will Be Hardest-Hit
Overall, we see the highest impact of COVID-19 on services industries that will need to be curtailed for social distancing and reduction of social connectivity, namely air travel, hotels, restaurants, and arts and entertainment. We think the majority of individuals and businesses will strive to avoid travel for the balance of 2020.

Retail Decline in 2020 Similar to Past Recessions
We don't think 2020 will be catastrophic for retail as a whole. Only 37% of U.S. retail sales fall into the nonessential business category subject to state shutdown orders. Irrespective of shutdown orders, U.S. consumers will curb their shopping visits to practice voluntary social distancing. However, we think many consumers will readily switch to online channels to make up for lost in-store purchases, leading to a positive impact on non-store retail sales in 2020. Most of the nonessential store categories are ripe for temporary substitution to e-commerce.

We Don't Expect a U.S. Housing Crash as a Result of COVID-19
While memories of the 2008 housing bust linger, we don't expect a crash in the U.S. housing sector as a result of COVID-19. We expect a 5% decline in residential construction in 2020 with a commensurate 5% drop in housing starts. Though order cancellations and fewer new orders will push starts lower, we see little reason for construction activity to grind to a halt. Construction has nearly universally been exempted from government shutdown orders, and the impact of sick workers is minimal in our base case. We expect a rebound in housing demand in the second half of 2020, particularly as households respond to lower mortgage rates.

Source: Morningstar

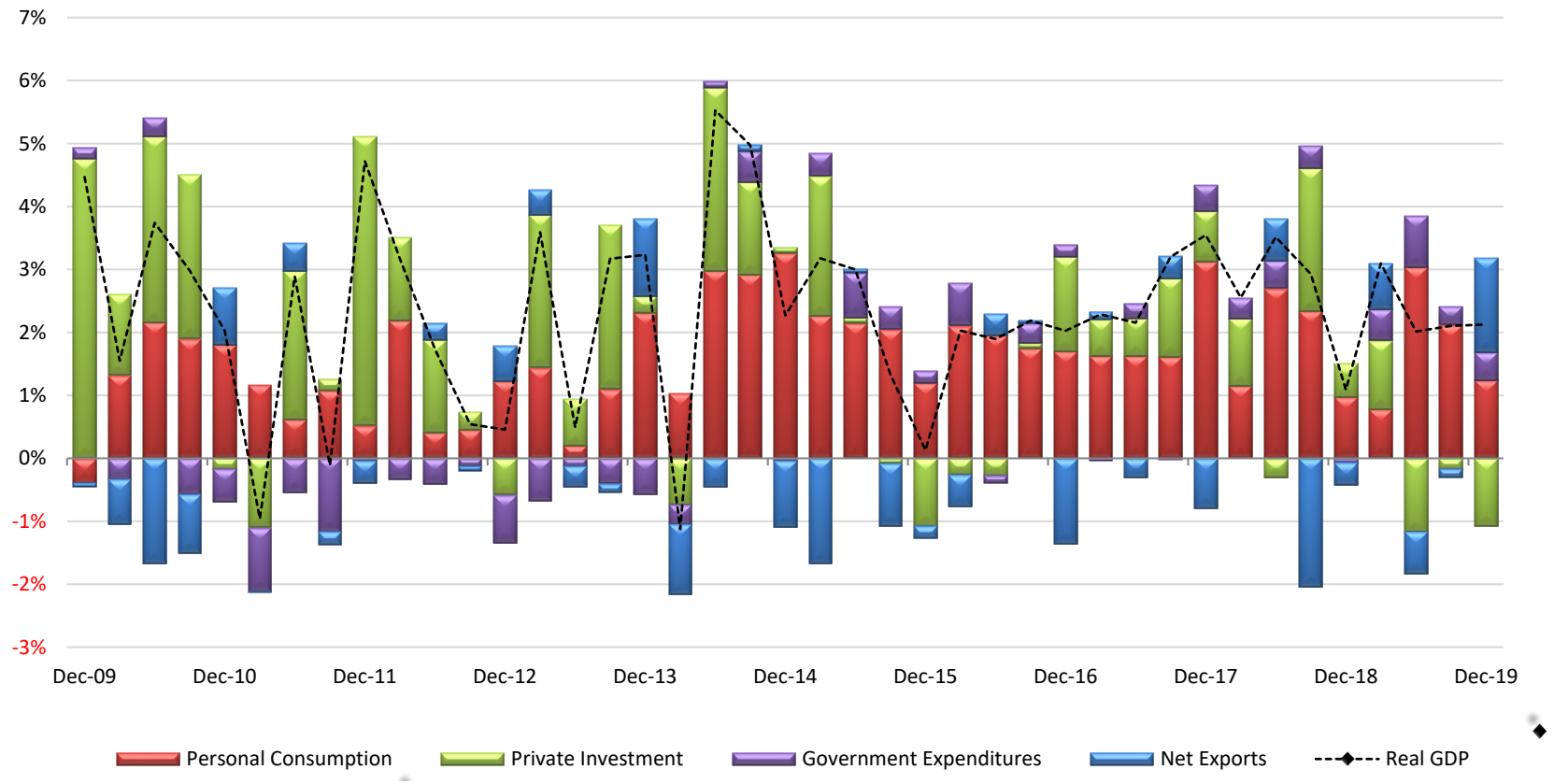
Employment Will Be Hit Hard, Underlining Need to Shore Up Demand
The hardest-hit sectors (mining, retail, transportation, arts and entertainment, hotels and restaurants, and miscellaneous services) account for just over 15% of GDP but nearly 30% of U.S. employment. As such, the direct impact on employment from COVID-19 could be much greater than the direct impact on GDP. However, we see little difficulty in these workers returning to work once business closures and outbreak severity subside in the second half of 2020. This is a marked contrast with the aftermath of 2008, when massive numbers of workers in boom sectors like construction and real estate needed to be reallocated to new sectors, a process that took many years to accomplish.

U.S. on Track to Deliver Historically Strong Fiscal Policy Response
The likely severe hit to employment that we've outlined underlines the need for strong countercyclical economic policy to boost aggregate demand, as laid-off workers are likely to severely curb their expenditures. We think U.S. fiscal and monetary policy is up to the task.

Source: Morningstar

Economic Growth

Economists are predicting GDP will turn negative in the current January-March quarter, based on the sudden stop to economic activity due to COVID-19. Estimates of the first-quarter decline average around 5% at an annual rate. Estimates for the second-quarter decline average around 35% at an annual rate. Estimates for the full year 2020 decline average 3-5%, down from a positive 2% prior to the pandemic.

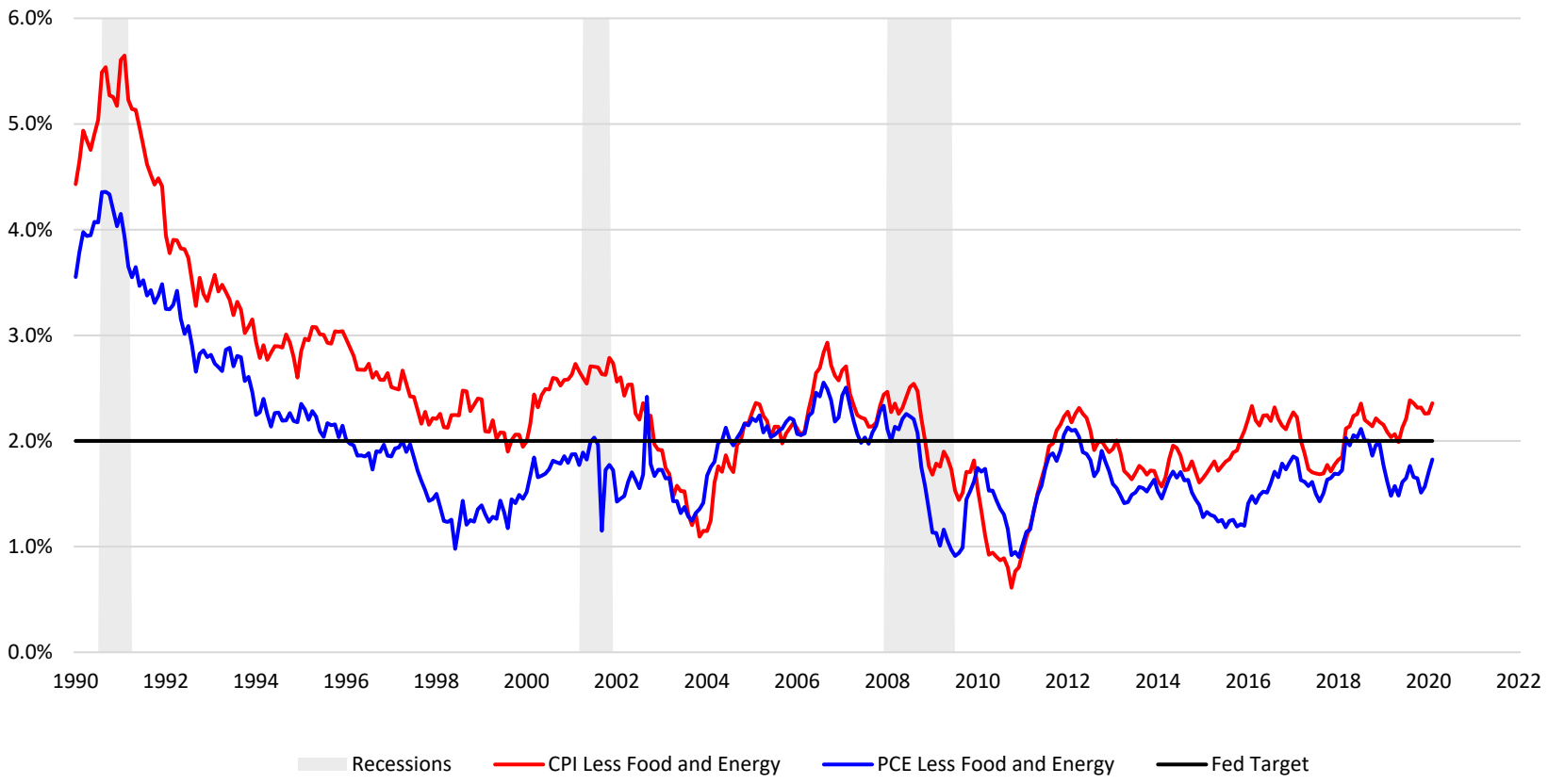


Contributions to Percent Change in Real GDP ***(Annualized Q/Q % Change)***

Source: U.S. Bureau of Economic Analysis (Reported quarterly)

Inflation Outlook

Core PCE inflation, the Federal Reserve's preferred measure of inflation, was up 1.8% year-over-year in February. Inflation unexpectedly rose in February but could drop in the months ahead as the coronavirus outbreak depresses demand for some goods and services, outweighing price increases related to shortages caused by disruptions to the supply chain.

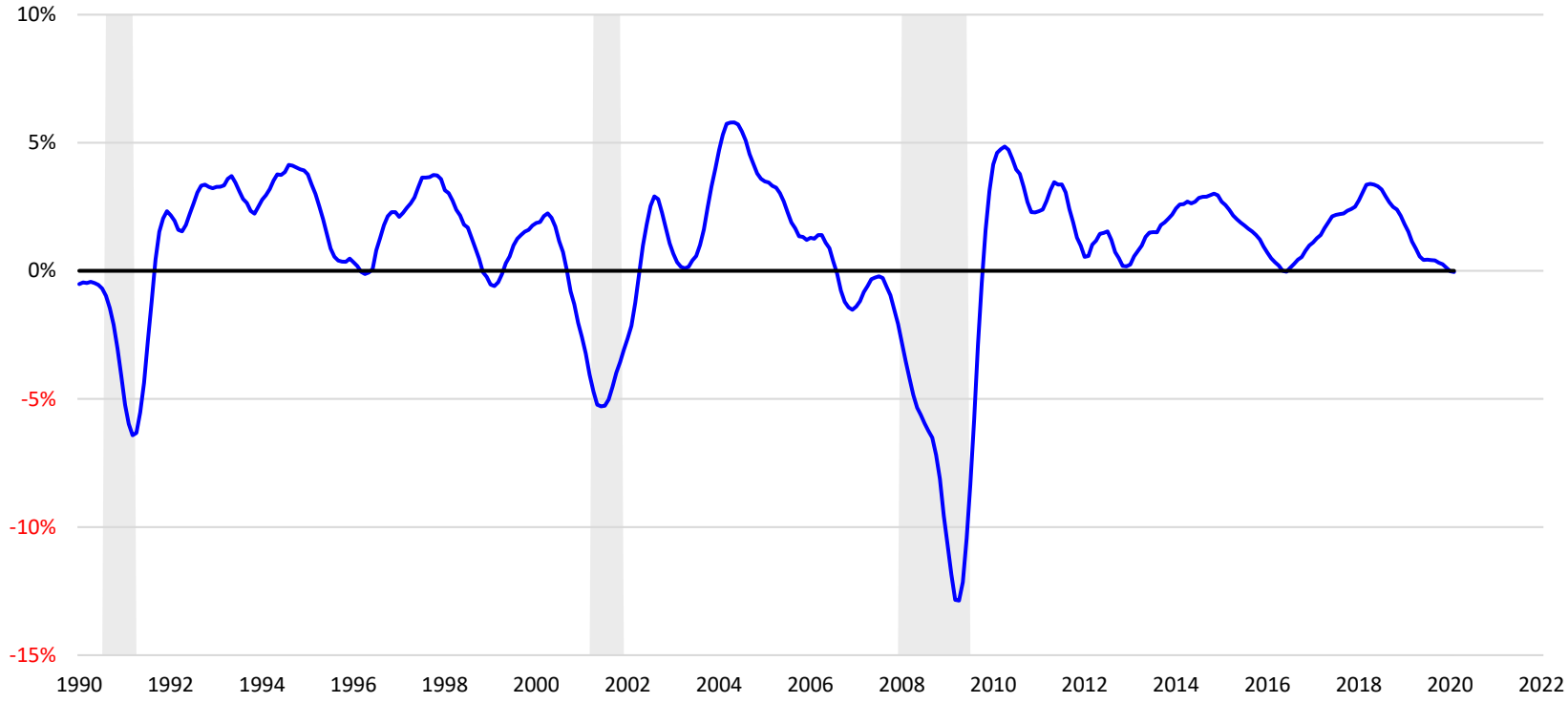


Consumer Price Index (Core) and Personal Consumption Expenditures Price Index (Core) ***(Y/Y % Change)***

Source: U.S. Bureau of Labor Statistics, U.S. Bureau of Economic Analysis (Reported monthly)

U.S. Economic Outlook

The Conference Board's Leading Economic Index (LEI) registered 112.1 in February, but it does not reflect the impact of the COVID-19 pandemic which began to hit the U.S. economy in full by early March.

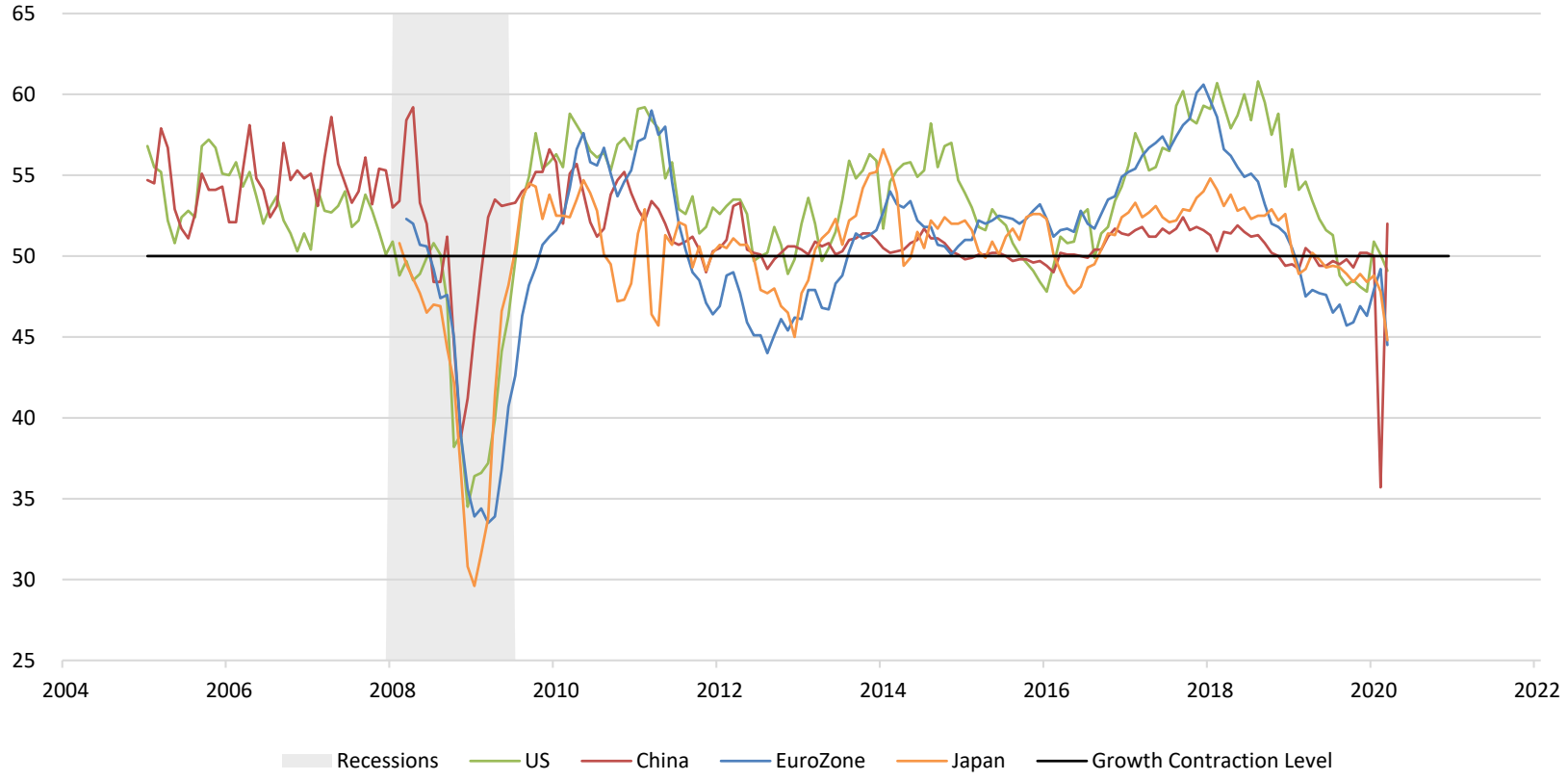


Leading Economic Index ***(Six-Month Moving Average of the Six-Month Rate of Change)***

Source: Conference Board (Reported monthly)

Global Economic Outlook

Although manufacturing is only a small part of the global economy, it is one of the most volatile sectors and often acts as a leading indicator of global swings in economic fortunes. As of March, each of the world's largest economies remain at or below the key 50 growth/contraction barrier with the notable exception of China which deteriorated rapidly and rebounded just as rapidly due to the COVID-19 outbreak.

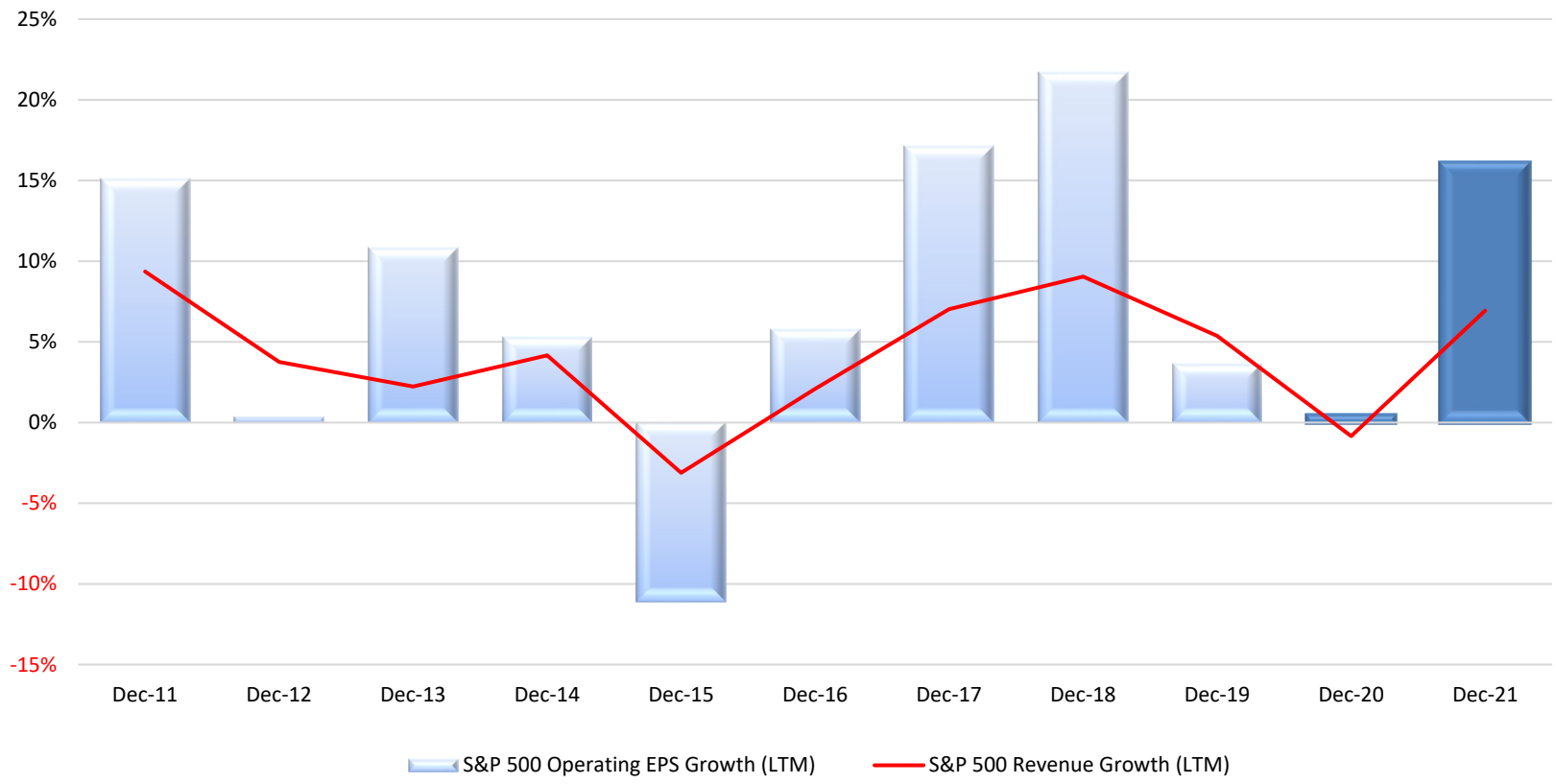


Manufacturing Purchasing Managers Index (PMI) ***(A PMI over 50 represents growth in manufacturing)***

Source: ISM, Markit

Corporate Profitability

Analysts have sharply reduced earnings estimates since March 1, and now expect the S&P 500 to report a year-over-year decline in earnings in Q1 2020 (-5.2%), Q2 2020 (-10.0%), Q3 2020 (-1.1%) and a year-over-year increase in Q4 2020 (+4.5%). Blended earnings growth for 2020 is projected to be 0% on revenue growth of 2%.



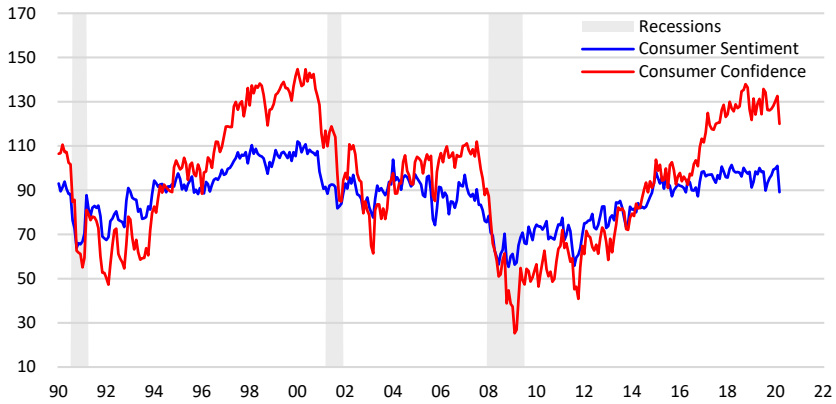
S&P 500 Operating Earnings Per Share and Revenue Per Share Growth ***(Y/Y % Change)***

Source: S&P Dow Jones Indices (Reported quarterly)

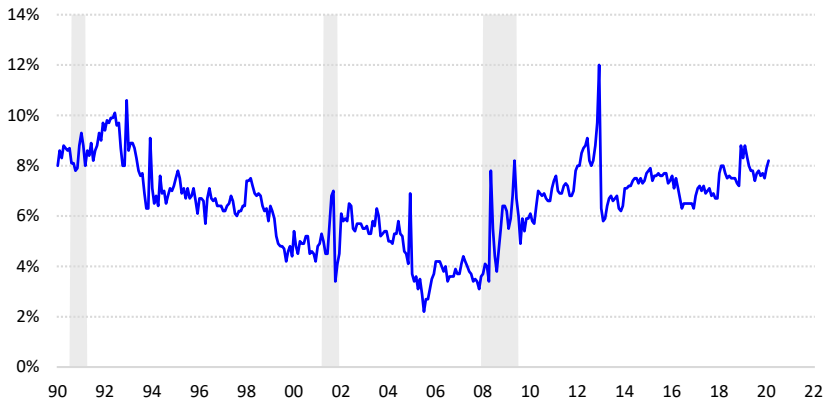
Consumer Outlook

Stabilizing consumer confidence will be difficult given surging unemployment and falling household incomes. The extent of additional declines in April will depend on the success in curtailing the spread of the virus and how quickly households receive funds to relieve their financial hardships. Mitigating the negative impacts on health and finances may curb rising pessimism, but it will not produce optimism.

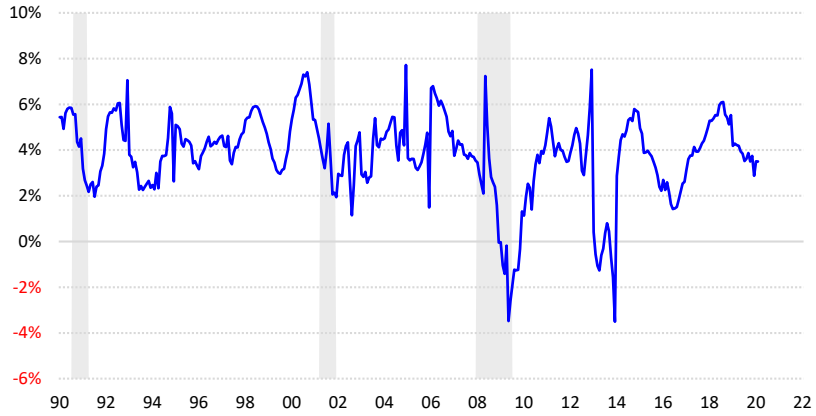
Consumer Sentiment Index and Consumer Confidence Index



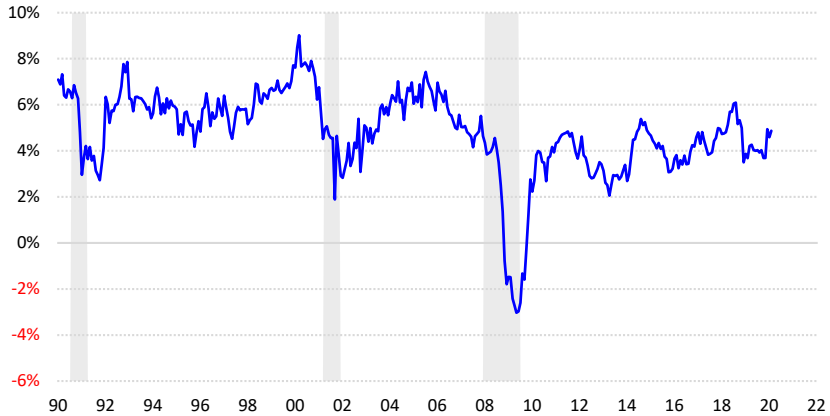
Personal Saving Rate (Seasonally Adjusted Annual Rate)



Disposable Personal Income Per Capita (Y/Y % Change)



Personal Consumption Expenditures (Y/Y % Change)

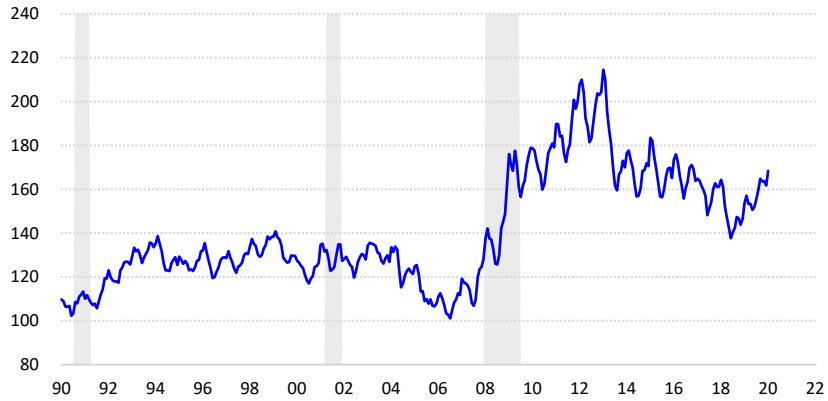


Source: Thompson Reuters/University of Michigan, Conference Board, U.S. Bureau of Economic Analysis (Reported monthly)

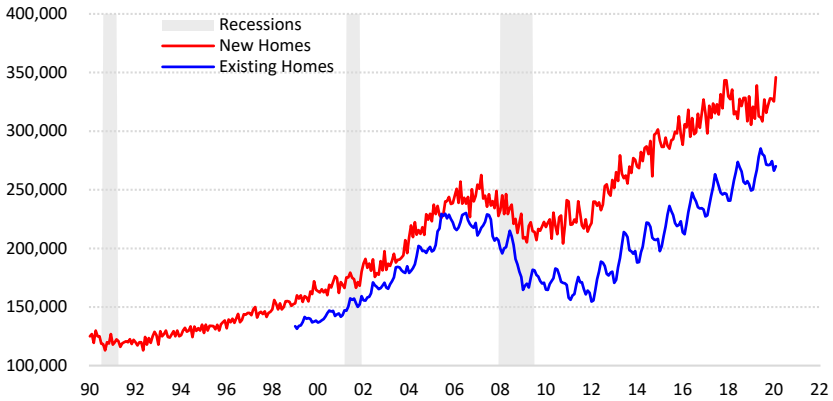
Housing Market Outlook

The housing market will not go unscathed, as consumer confidence and a strong labor market are essential in the decision to purchase a home. However, this time, housing is a casualty of a public health crisis turned economic, not the cause of an economic crisis.

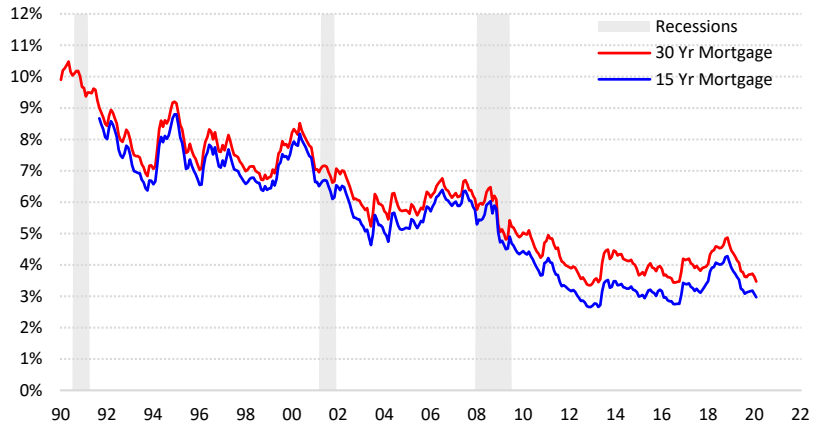
Housing Affordability (higher = more affordable)



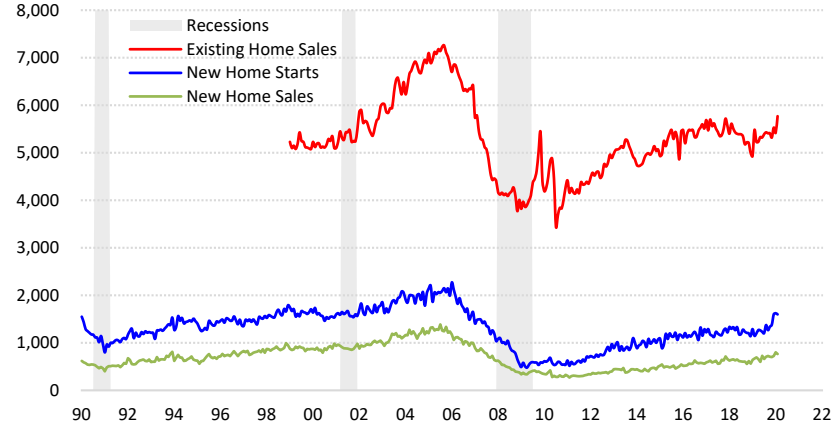
Median Selling Price of New and Existing Homes



Fixed Rate Mortgage Average in the United States ©



Housing Starts, Existing Home Sales and New Home Sales (000's)

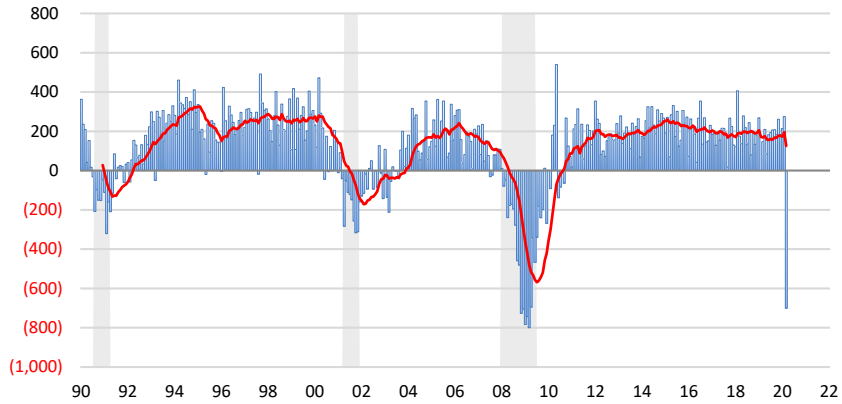


Source: National Association of Realtors, Freddie Mac, U.S. Bureau of the Census (Reported monthly)

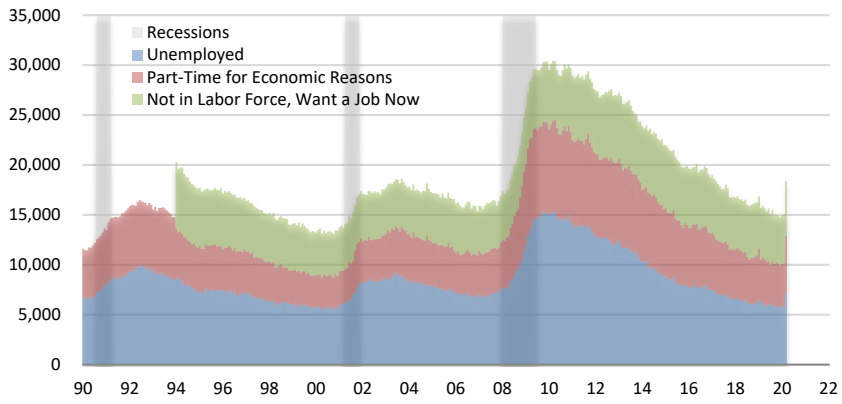
Labor Market Outlook

Employers shed 701,000 jobs in March, and the unemployment rate climbed to 4.4% as the global health crisis wreaked havoc on a once-solid job market. Further deterioration is expected as COVID-19 continues to spread, causing more business stoppage.

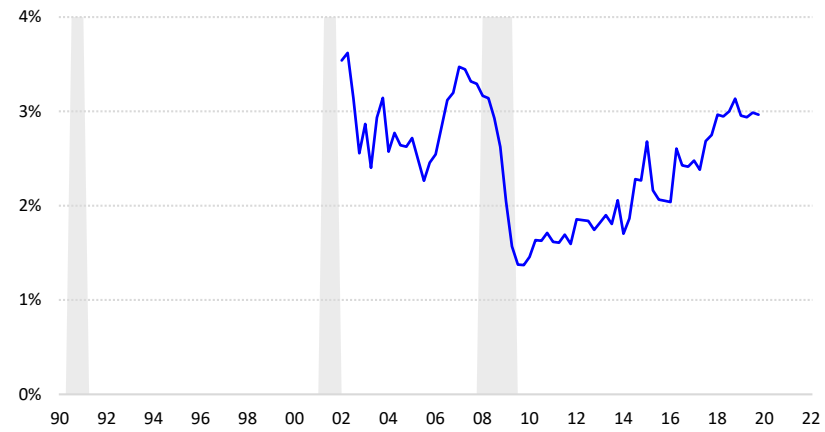
Jobs Gained/Lost (000's) with 12-Month Moving Average



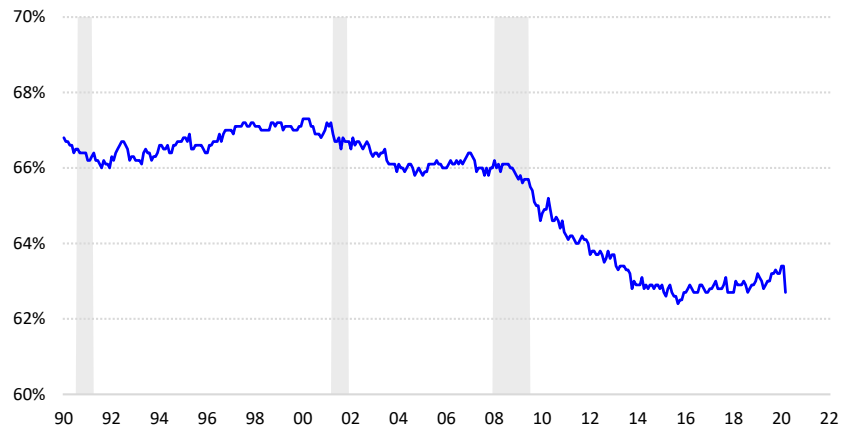
Labor Market Slack (000's)



Wage Growth (Y/Y % Change)



Labor Force Participation Rate



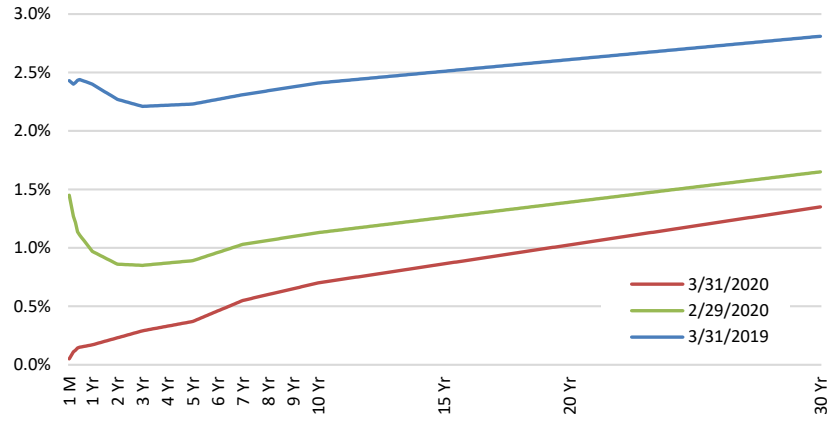
Source: U.S. Bureau of Labor Statistics, (Reported monthly, Wage Growth reported quarterly)

BOND MARKET PERSPECTIVE

DATA AS OF MARCH 31, 2020

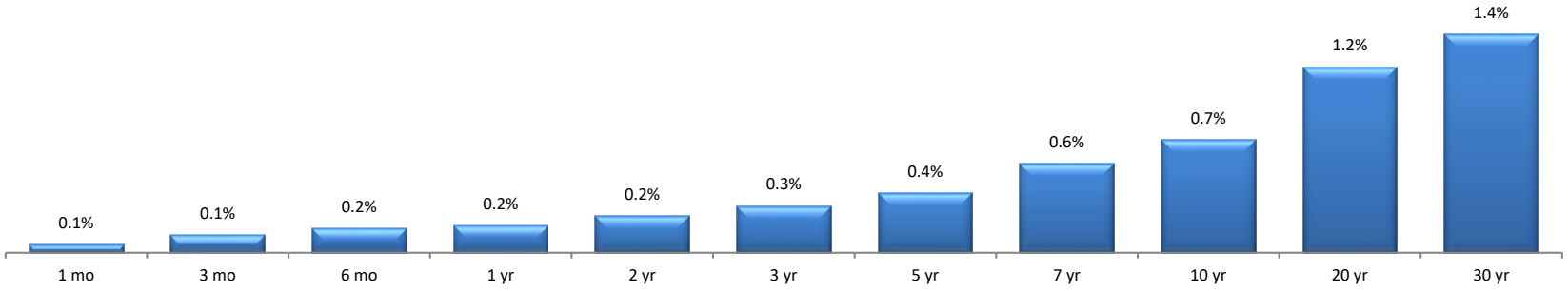
U.S. Treasury Market

U.S Treasury Yield Curve



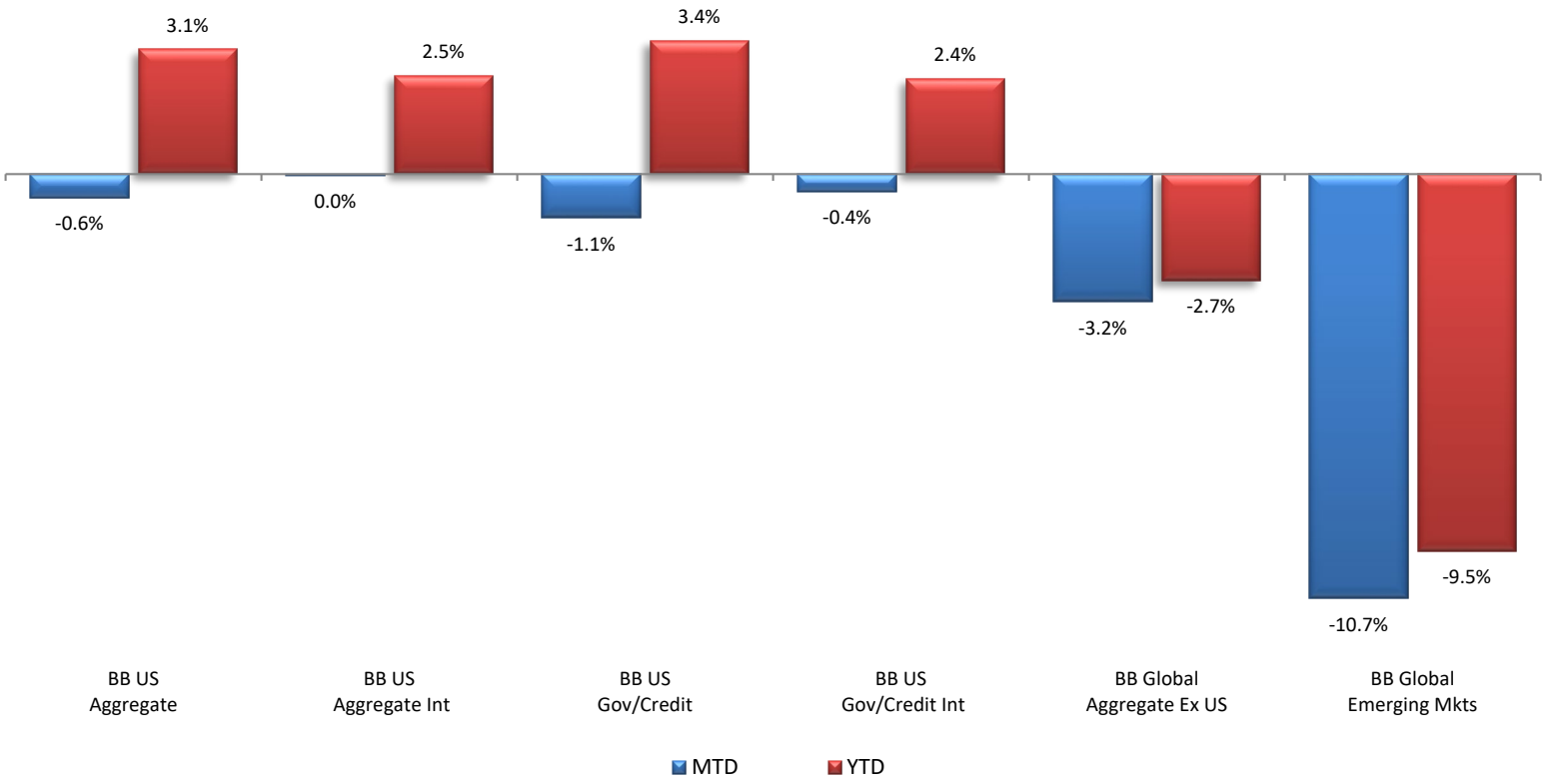
Historical U.S. 10-Year Treasury Rate

Current U.S. Treasury Yields by Maturity



Source: U.S. Department of Treasury

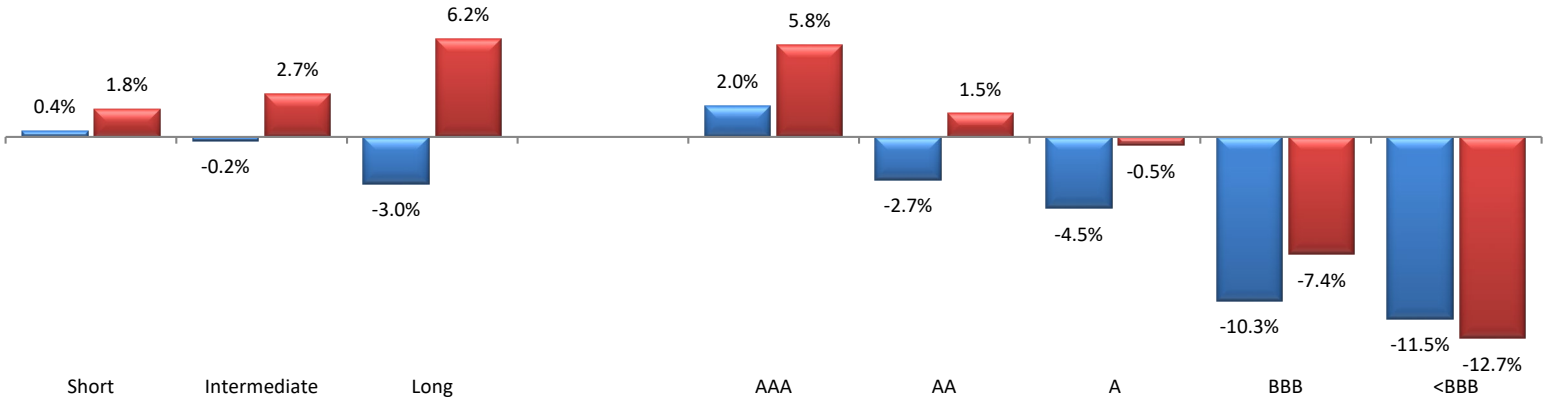
Global Fixed Income Returns by Bellwether Index



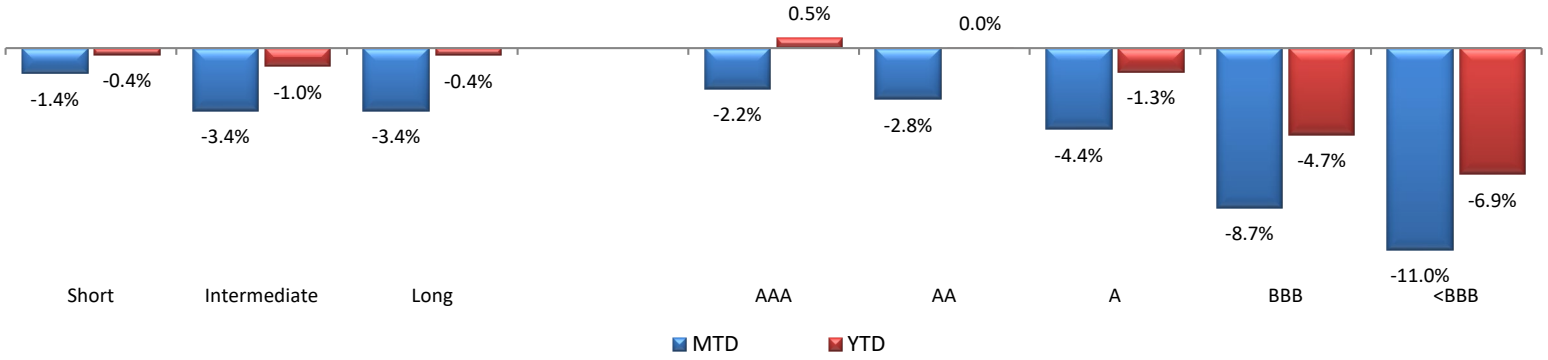
Source: Bloomberg Barclays (BB)

Domestic Fixed Income Returns by Maturity and Credit Quality

Domestic Bond Market - Taxable



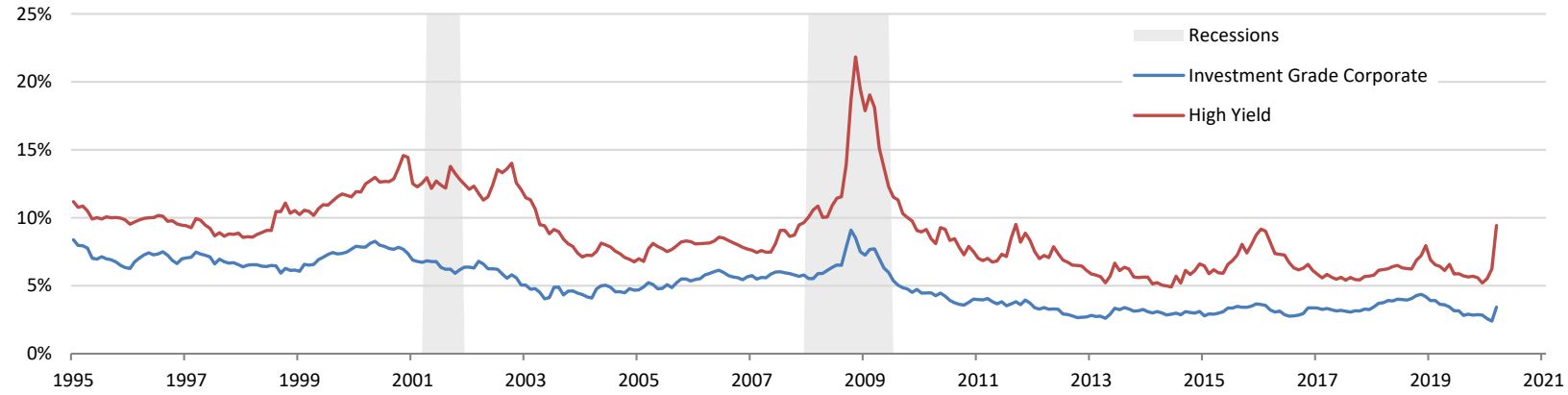
Domestic Bond Market - Municipal



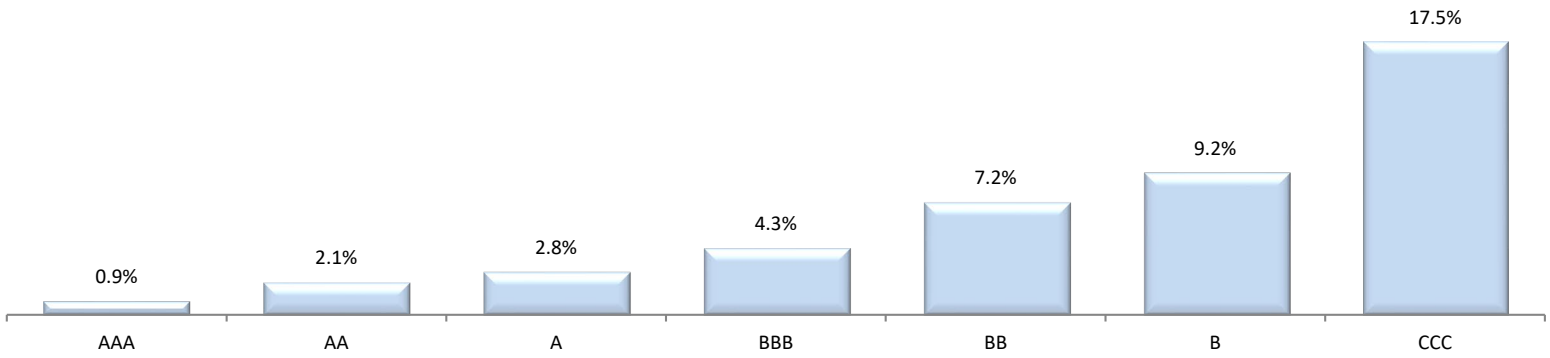
Short is defined as 1-3 years for taxable and 3 years for municipal, **Intermediate** is 5-7 years for taxable and 6-8 years for municipal, **Long** is 10+ years for taxable and 8-12 years for municipal. Source: Bloomberg Barclays Aggregate Bond Index (taxable bond market) and Bloomberg Barclays Municipal Index (municipal bond market).

Domestic Corporate Bond Yields

Historical Corporate Bond Market Yield to Worst

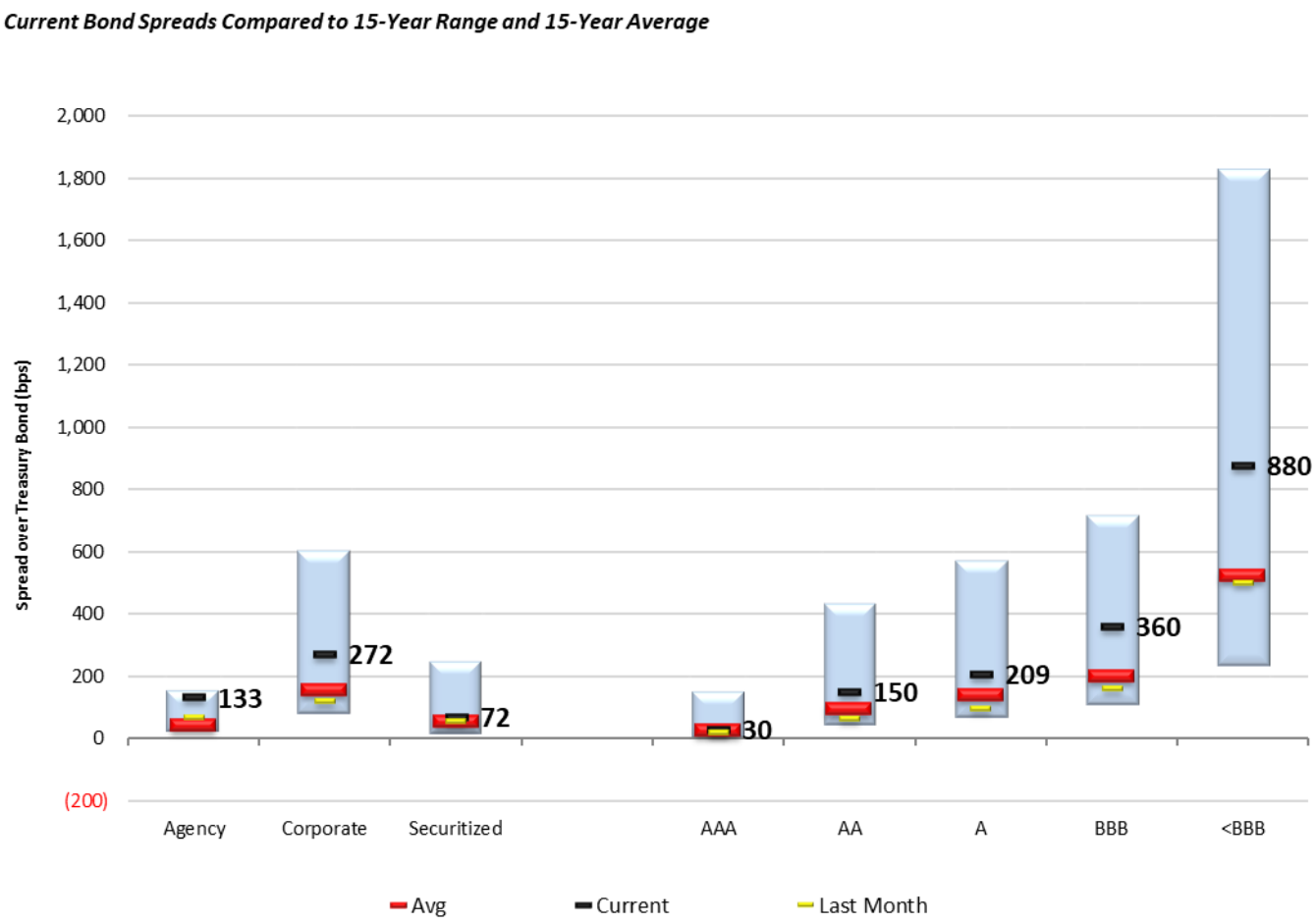


Current Corporate Bond Market Yields by Credit Quality



Investment Grade Corporate bonds are represented by the Bloomberg Barclays U.S. Corporate Investment Grade index. **High Yield** bonds are represented by the Bloomberg Barclays U.S. Corporate High Yield index. Source: Bloomberg Barclays

Domestic Taxable Bond Spreads

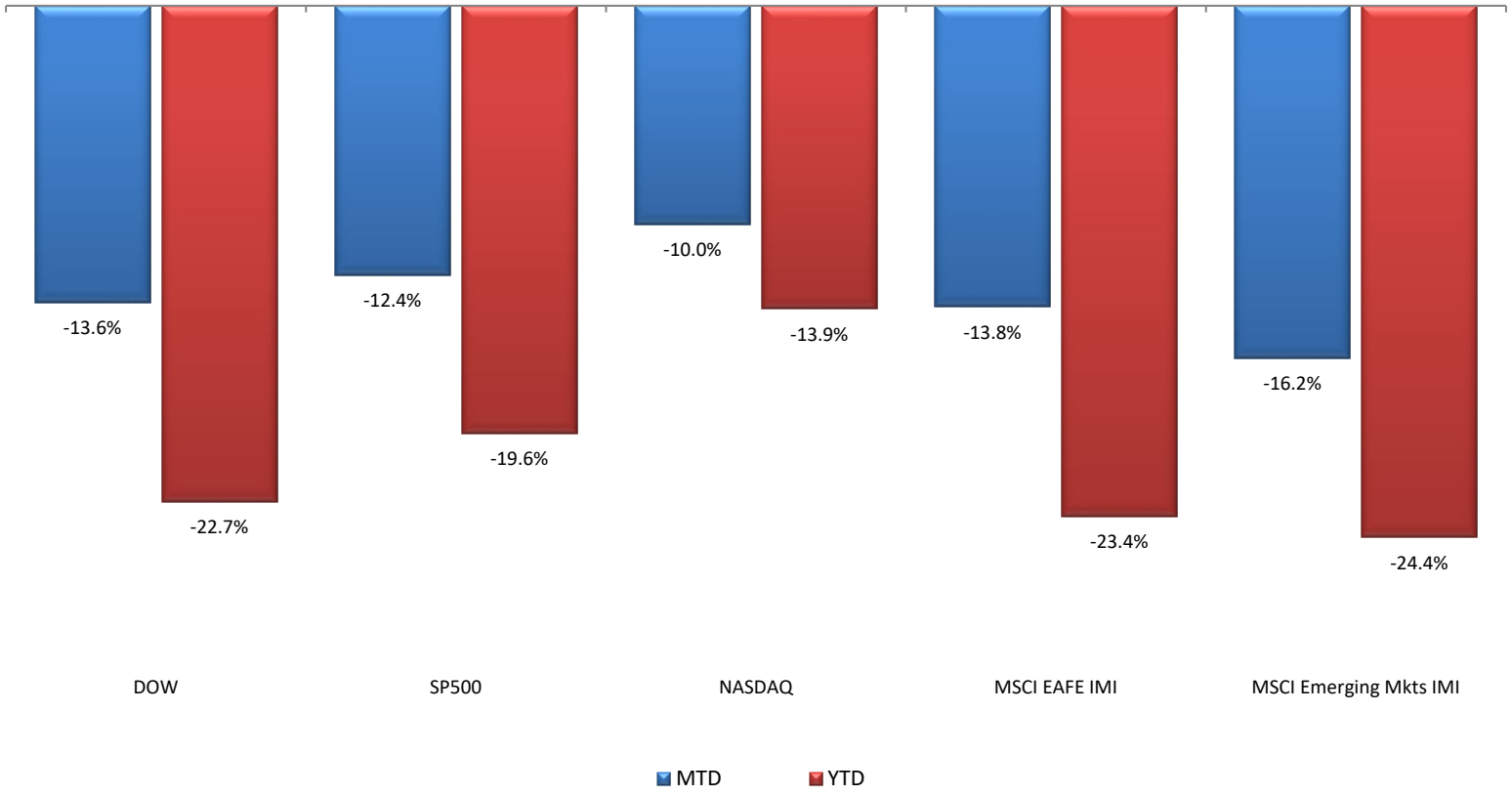


The length of each bar represents the **Range** of the highest and lowest spread to the Treasury benchmark over the past 15 years. **Average** represents the average spread over the past 15 years. **Current** represents the most recent month. Source: Bloomberg Barclays

EQUITY MARKET PERSPECTIVE

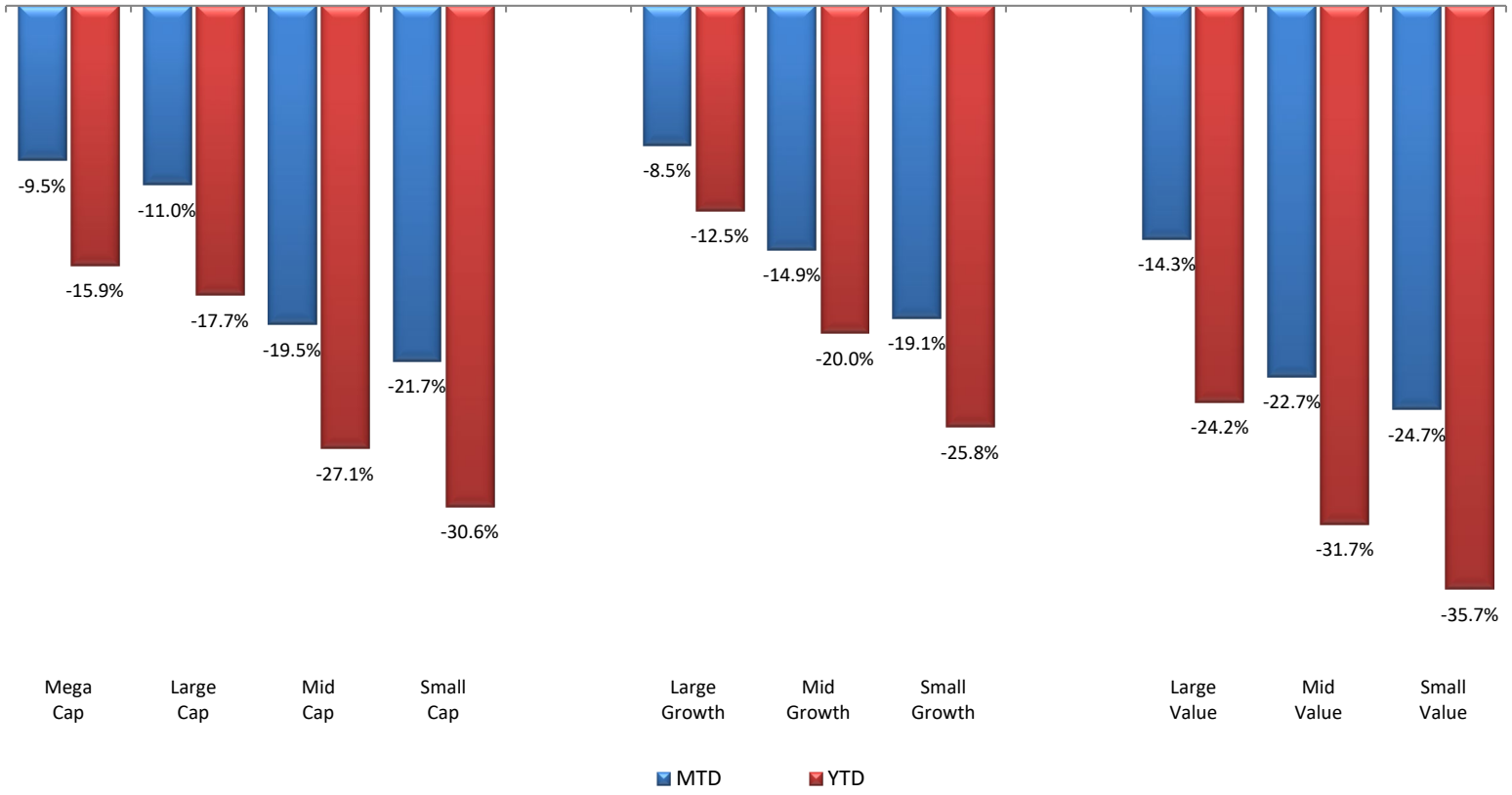
DATA AS OF MARCH 31, 2020

Global Equity Returns by Bellwether Index



Source: S&P Dow Jones, NASDAQ, MSCI

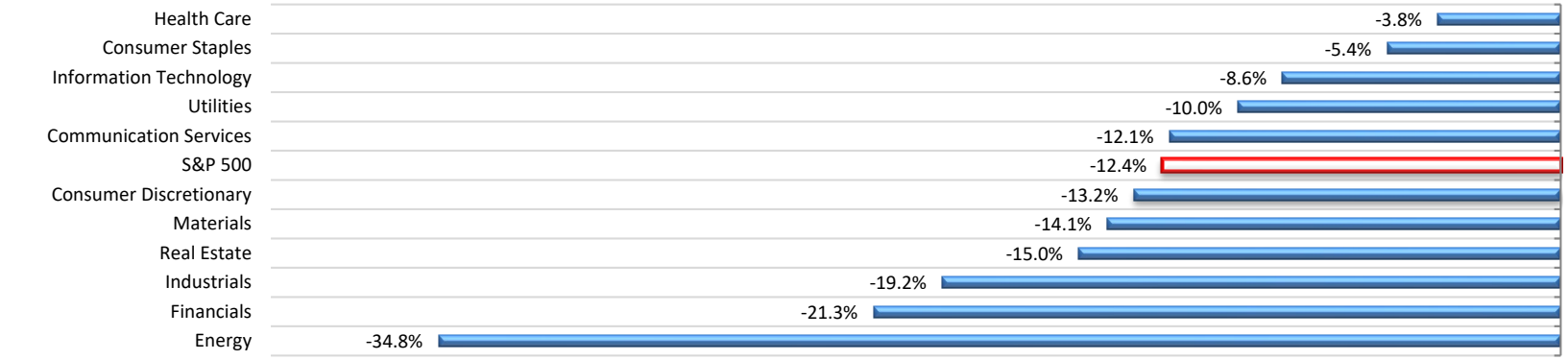
Domestic Equity Returns by Market Cap and Style



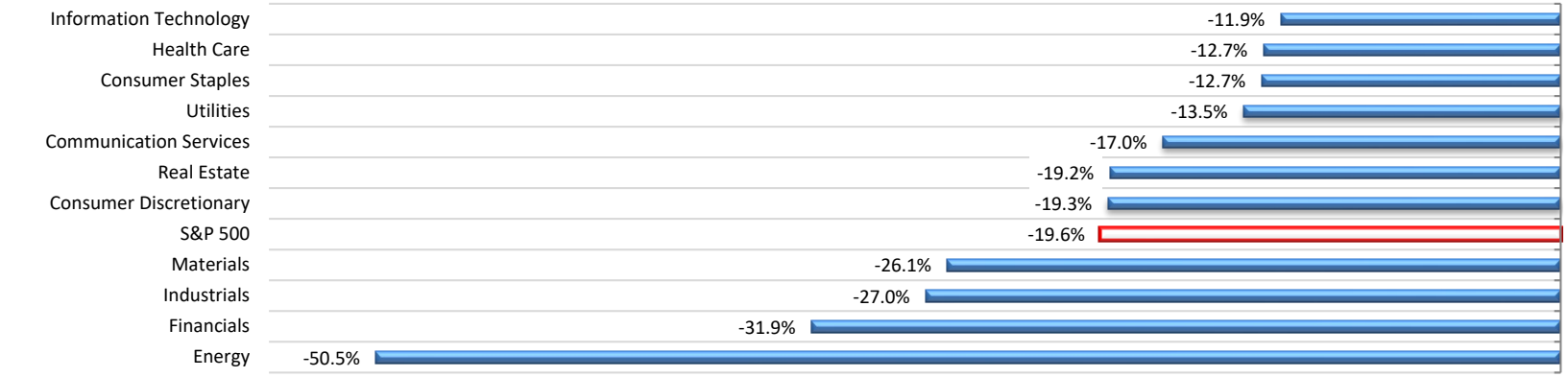
Asset classes are represented by the following benchmarks: Russell Top 50 (**Mega**), Russell Top 200 (**Large**), Russell Midcap (**Mid**), Russell 2000 (**Small**).
Source: Russell

Domestic Equity Returns by Sector

MTD S&P 500 Returns by Sector

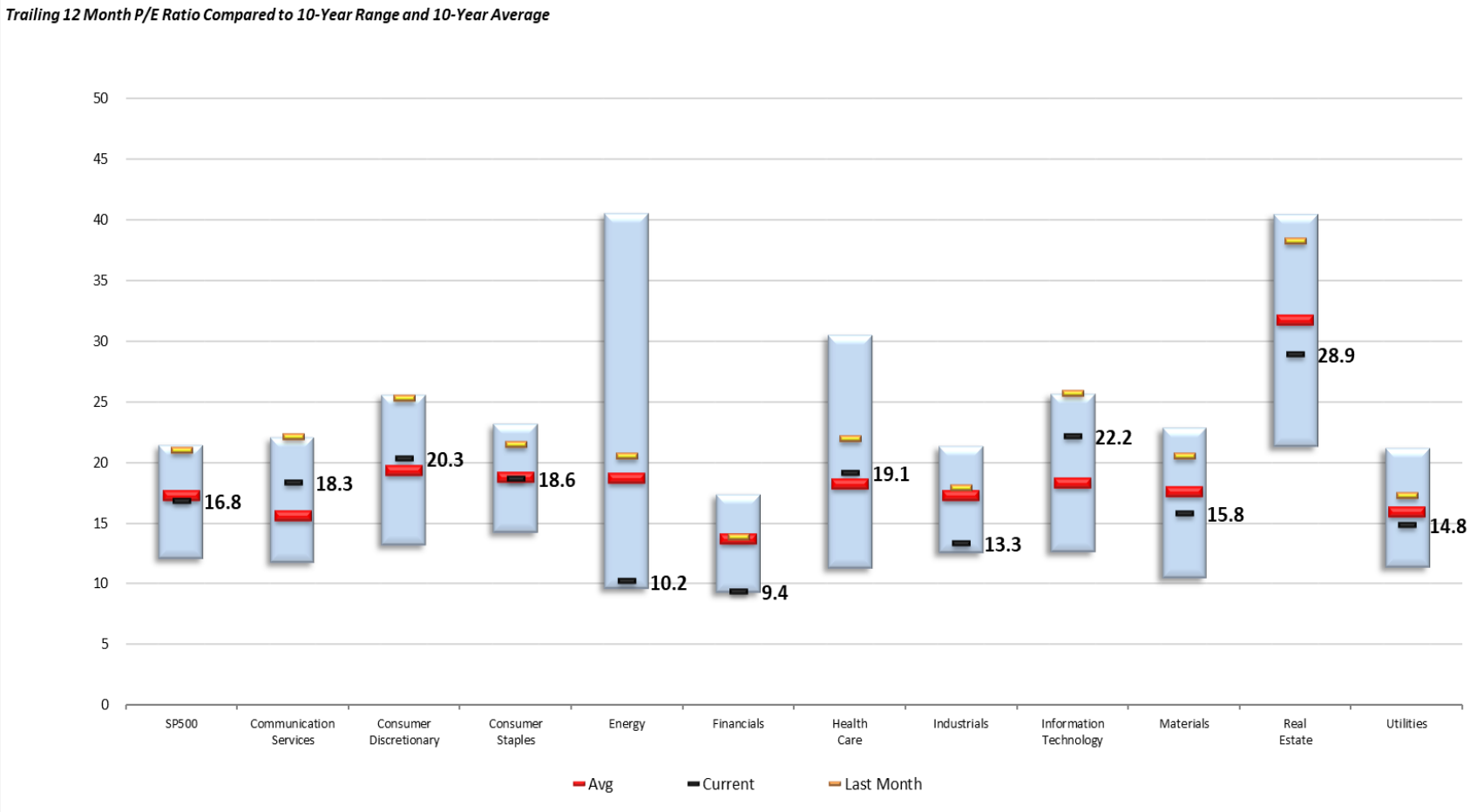


YTD S&P 500 Returns by Sector



Source: S&P Dow Jones

Domestic Equity Valuations by Sector



P/E ratios are based on trailing 12 months earnings (LTM) excluding negative earnings. The length of each bar represents the **Range** of the highest and lowest P/E ratio over the past 10 years. **Average** represents the average P/E ratio over the past 10 years. **Current** represents the most recent month. Source: Bloomberg

Economic Indicator Descriptions

Real Gross Domestic Product (GDP): GDP is a basic measure of U.S. economic output adjusted for inflation. Alternatively, it can be thought of as the final value of all goods and services produced within the U.S. Positive GDP growth signals an expanding economy.

Consumer Price Index (CPI): Measuring the change in the CPI provides an estimate for inflation. The CPI tracks the price of a basket of consumer goods and services. High inflation or deflation (negative inflation) can be signs of economic worry. CPI is typically reported in two ways: headline and core CPI. Headline CPI includes all categories that comprise the CPI basket of goods and services.

Personal Consumption Expenditure Chain-type Price Index (PCEPI): Measuring the change in the PCEPI provides an estimate for inflation. In comparison to CPI, which uses one set of expenditure weights for several years, this index uses expenditure data from the current period and the preceding period. This price index method assumes that the consumer has substituted from goods whose prices are rising to goods whose prices are stable or falling. Core PCEPI, which is closely monitored by the Fed, strips out the more volatile Food and Energy categories.

Conference Board Index of Leading Economic Indicators (LEI): The LEI is designed to signal peaks and troughs in the business cycle. The ten components include: average weekly manufacturing hours; average weekly initial claims for unemployment insurance; manufacturers' new orders for consumer goods and materials; ISM® Index of New Orders; manufacturers' new orders for nondefense capital goods excluding aircraft orders; building permits for new private housing units; stock prices of 500 common stocks; Leading Credit Index™; interest rate spread on 10-year Treasury bonds less federal funds and average consumer expectations for business conditions.

The Institute for Supply Management (ISM) PMI Index: The PMI is a composite index of five "sub-indicators", which are extracted through surveys to purchasing managers from around the country. The five sub-indexes are: Production, New orders, Supplier deliveries, Inventories and Employment level. An Index value over 50 indicates expansion; below 50 indicates contraction.

The Institute for Supply Management (ISM) Non-manufacturing Index (NMI): The NMI is a composite index of four "sub-indicators", which are extracted through surveys to purchasing managers. The four sub-indexes: Business activity, New orders, Employment, Supplier deliveries. An Index value over 50 indicates expansion; below 50 indicates contraction.

Consumer Confidence Index (CCI) : The Consumer Confidence Index is a well-known proxy for the attitudes of U.S. consumer towards the business climate, personal finances and spending. This index attempts to measure the confidence that consumers have in the overall economy. This is important because consumer spending accounts for a large portion of U.S. GDP.

Consumer Sentiment Index (MCSI): The MCSI uses telephone surveys to gather information on consumer expectations regarding the overall economy. The MSCI is becoming more useful for investors because it gives a monthly snapshot of whether consumers feel like spending money by accessing their views on the business climate, personal finance, and spending in order to judge their level of optimism/pessimism. This is important because consumer spending accounts for a large portion of U.S. GDP.

Disposable Personal Income per Capita (DPI): DPI is the amount of money that households have available for spending and saving after income taxes have been accounted for. DPI is monitored to gauge the overall state of the economy.

Personal Consumption Expenditures (PCE): PCE consists of the actual and imputed expenditures of households including durables, non-durables and services.

Retail Sales: The retail sales report captures in-store sales as well as catalog and other out-of-store sales. The report also breaks down sales figures into groups such as food and beverages, clothing, and autos. The results are often presented two ways: with and without auto sales being counted, because their high sticker price can add extra volatility to the data.

Housing Affordability Index (HAI): Published monthly by the National Association of Realtors, the HAI index has a value of 100 when the median-income family has sufficient income to purchase a median-priced existing home. A higher index number indicates that more households can afford to purchase a home.

Unemployment Rate: Calculated monthly by the Bureau of Labor Statistics, the unemployment rate is a gauge of the health of the U.S. labor market. High unemployment can stifle the growth of the economy.

Wage Growth: Calculated quarterly by the Bureau of Labor Statistics, the employment cost index measures the growth of employee compensation (wages and benefits). The index is based on a survey of employer payrolls in the final month of each quarter. The index tracks movement in the cost of labor, including wages, fringe benefits and bonuses for employees at all levels of a company. We are using the wage component of this index.

Benchmark Descriptions

U.S. Aggregate Bond: The Barclays U.S. Aggregate Bond Index measures the performance of USD-denominated, SEC-registered, investment-grade, fixed-rate or step up, taxable bonds. The index includes bonds from the Treasury, Government-Related, Corporate and MBS, ABS, and CMBS sectors. Securities included in the index must have at least one year until final maturity.

U.S. Treasury: The Barclays Capital U.S. Treasury Index measures the performance of public obligations of the U.S. Treasury with a remaining maturity of one year or more.

U.S. Agency: The Barclays Capital U.S. Agency Bond Index measures the performance of the agency sector of the U.S. government bond market and is comprised of investment-grade USD-denominated debentures issued by government and government-related agencies, including FNMA. The index includes both callable and non-callable securities that are publicly issued by U.S. government agencies, quasi-federal corporations, and corporate and foreign debt guaranteed by the U.S. government.

U.S. Corporate: The Barclays Capital U.S. Corporate Bond Index measures the performance of publicly issued USD-denominated corporate and Yankee debentures and secured notes that meet specified maturity, liquidity, and quality requirements.

U.S. MBS: The Barclays Capital U.S. Mortgage Backed Securities Index measures the performance of mortgage-backed pass-through securities of Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC).

U.S. Municipal Bond: The Barclays Capital Municipal Bond Index measures the performance of the USD-denominated, investment grade, fixed-rate tax exempt bond market. The index has four main sectors: state and local general obligation bonds, revenue bonds, insured bonds and pre-refunded bonds. Securities included in the index must have at least one year until final maturity.

General Obligation Bond Index: The Barclays General Obligation Bond Index measures the average market-weighted performance of general obligations securities that have been issued in the last five years with maturities greater than one year.

Revenue Bond Index: The Barclays Revenue Bond Index measures the average market-weighted performance of revenue backed securities that have been issued in the last five years with maturities greater than one year.

Investment Style: Performance of different types of stocks will vary over time. A common way to characterize a stock is by market capitalization (e.g., large cap or small cap) or style (e.g., value or growth).

Large Cap vs. Small Cap: Large companies tend to be more established companies and therefore exhibit lower volatility. Over an extended period of time, expected returns of small cap companies are often higher due to the risks associated with smaller, less established companies.

Value vs. Growth: Value companies typically trade at discount valuations and may pay a dividend. Growth companies are those that are experiencing greater earnings growth prospects.

Mega Cap: The Russell Top 50 Index measures the performance of the top 50 largest companies in the Russell 1000 Index, which represents approximately 40% of the total market capitalization of the Russell 1000 index.

Large Cap: The Russell Top 200 Index measures the performance of the 200 largest companies in the Russell 1000 Index, which represents approximately 68% of the total market capitalization of the Russell 1000 index.

Mid Cap: The Russell Midcap Index measures the performance of the 800 smallest companies in the Russell 1000 Index, which represent approximately 36% of the total market capitalization of the Russell 1000 Index.

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

Large Cap Growth: The Russell 1000 Growth Index measures the performance of those Russell 1000 index companies with higher price-to-book ratios and higher forecasted growth values.

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

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

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

Small Cap Growth: The Russell 2000 Growth Index measures the performance of those Russell 2000 Index companies with higher price-to-value ratios and higher forecasted growth values.

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

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