

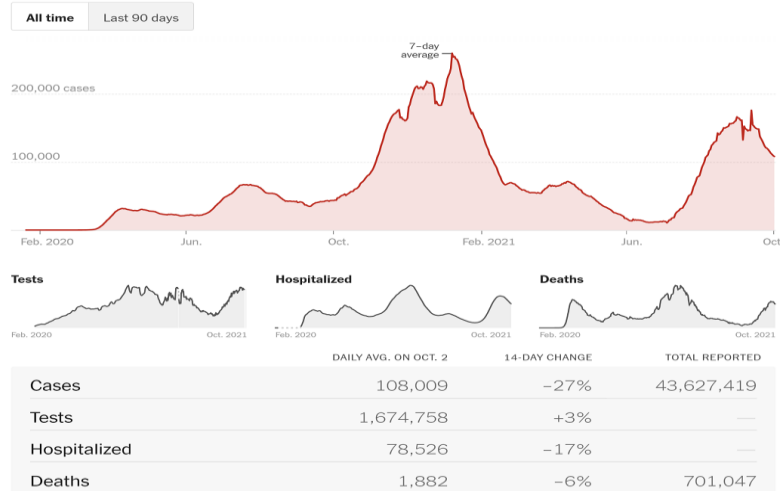
2021 Q3 Commentary

- The COVID-19 Delta variant has slowed the economic recovery, but we are glad to see the rates of infection, hospitalization and death have waned. Unless there is another wave or a new unknown strain coming, the U.S. economy is expected to get back on the recovery track, even though peak growth is behind us.
- Both headline and core inflation (CPI or PCE) have steadied, albeit at elevated levels, and the base case appears to be that peak inflation is also behind us. However, the dislocation, created last year from a self-imposed lockdown in China and then in the U.S. and a number of other countries, has created significant and long-lasting dislocations. Starting with a supply shock which was followed by a demand shock, the global supply chain, in commodities and finished goods, continues to be in turmoil. The shutdown is like the start of the first falling domino which laid down all the domino pieces to follow. Since last summer, the restart of the global economy is equivalent to pushing all the fallen dominos back up, and that has been proven to be a much harder and longer task. This reversal process will likely cause inflation winds to blow much longer and sometimes harder.
- The Federal Reserve's new monetary framework - flexible average inflation targeting (FAIT) approach - targets inflation that averages 2% over a timeframe that is not defined. The Central Bank intends to allow the economy to run a bit hotter. The current above trend inflation can be thought of as a "catch-up" to the below trend inflation since the Global Financial Crisis through the global shutdown and rolling recovery (base effect) – a kind of reversion to the mean of 2%. The fear is that the policy action (rate hike) comes too late and the Federal Reserve will have to take more heavy-handed actions, derailing the economic recovery trajectory into a recession; not to mention the draining of liquidity causing a bear market in risk assets.
- It appears certain that the Federal Reserve will begin reducing its bond purchasing program (\$40 billion in mortgages and \$80 billion in treasuries) before the end of this year. Unlike the last monetary tightening cycle under Chair Yellen, Chair Powell repeatedly stated that tapering and rate normalization or hiking are independent decisions. Although consumer demand has returned significantly, it is the lack of supply of goods and commodities and the disruption in the labor market that are building price pressure. Monetary policy is typically an ineffective tool to control supply-driven inflation. Raising interest rates to tighten financial conditions does not speed up the delivery of raw materials and goods. On the other hand, loose monetary policy has inflated financial and real assets with very stretched valuation and has contributed to imbalances. Moreover, the pent-up demand during the COVID crisis with significant savings and low borrowing cost are extra fuel for the inflation fire.
- It has been a sideways market in the third quarter, and the current debt ceiling, infrastructure spending and other fiscal policies are in a limbo. These and other uncertainties are not constructive for markets. But this soon will pass like they have in the past. Markets will likely remain volatile until these issues are cleared. Monetary policies will remain accommodative for some time, and that remains positive for risk assets.



Cases, Hospitalization, Death and Vaccination – More Progress

New reported cases

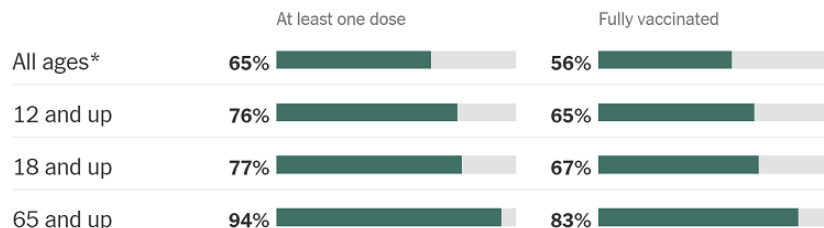


<https://www.nytimes.com/interactive/2021/us/covid-cases.html>

The Centers for Disease Control and Prevention reported on September 30th about 214.6 million people have received at least one dose of a COVID-19 vaccine, including about 184.9 million people who have been fully vaccinated by Johnson & Johnson's single-dose vaccine or the two-dose series made by Pfizer-BioNTech and Moderna.

The CDC also reported that about 4.4 million fully vaccinated people have received an additional vaccine dose since Aug. 13, the day after the F.D.A. opened up eligibility for third shots for some people with weakened immune systems. This figure also includes people who have gotten a booster dose, which the F.D.A. authorized on Sept. 22 for Pfizer-BioNTech recipients over 65 or at high risk of severe COVID-19. The number above does not include an estimated 1.2 million people in the U.S. who may have already received unauthorized additional doses prior to mid-August, according to the C.D.C.

United States vaccinations



*Includes those not yet eligible for the vaccine.

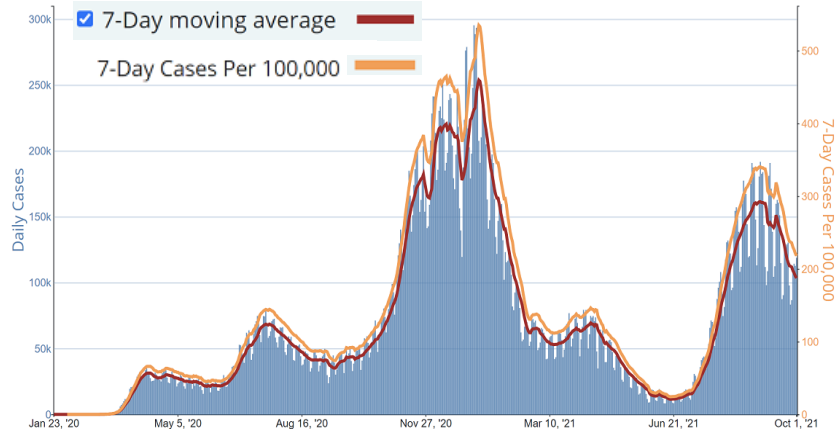
Sources: Centers for Disease Control and Prevention, U.S. Census Bureau | Note: Figures include the U.S. territories and three countries with [special agreements](#).

<https://www.nytimes.com/interactive/2020/us/covid-19-vaccine-doses.html>

COVID continues to challenge us and the global economy. Although the number of fully vaccinated have increased since the first of this year, the U.S. remains below 60%. The Delta strain has substantially affected the non-vaccinated and gave the U.S. another wave of infected, hospitalized and death. Although there are no new strains right now that are more contagious or lethal, the longer the ability for Delta to infect the nonvaccinated, the more opportunities for the virus to mutate into a new strain that could defy existing vaccines and cause more harm. The Delta Strain infection rate has waned, but we are concerned that, as we approach colder weather, people will be forced to gather indoors and that may give rise to another wave, especially during the year end season of family gatherings. One encouraging news recently is Merck's announcement for an antiviral pill, molnupiravir. If authorized by regulators, it would be the first oral antiviral treatment for COVID-19.

The Current Delta Wave is Slowing

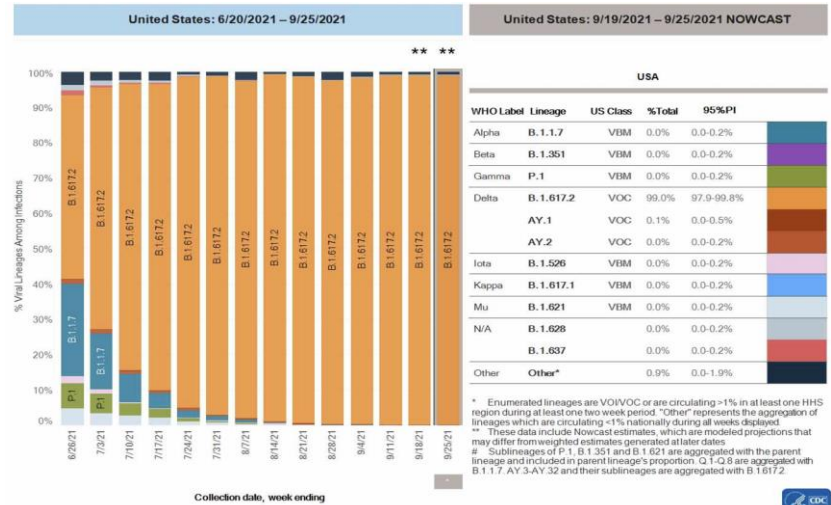
Daily Trends in Number of Cases and 7-Day Cumulative Incidence Rate of COVID-19 Cases in The United States Reported to CDC, per 100,000 population.



https://covid.cdc.gov/covid-data-tracker/#trends_dailycases_7daycasesper100k

The current 7-day moving average of daily new cases (106,395) decreased 13.3%, compared with the previous 7-day moving average (122,659). A total of 43,289,203 COVID-19 cases have been reported as of September 29, 2021.

The latest Delta wave is slowing, and no other seriously contagious variant is on the rise. However, as the northern hemisphere begins its fall and winter season, people will again be confined to indoor spaces, which makes air circulation and social distancing challenging. It is a reasonable expectation that another wave of infection could occur during the next 6-months, albeit it is likely to be less severe by numbers than the last wave as more people get vaccinated and booster shots.



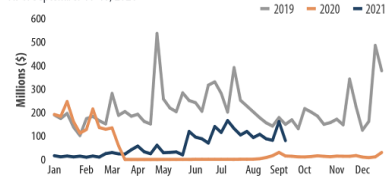
The Delta variant is the only variant classified as a Variant of Concern (VOC) in the U.S. There are no variants classified as a Variant of Interest (VOI), and there are 10 variants classified as Variants Being Monitored (VBM). VBM do not pose a significant and imminent risk to public health in the U.S. due to their very low prevalence, which is currently estimated to be less than 0.1%. Nowcast projections for the week ending September 25, 2021, estimate the national proportion of cases attributed to the Delta variant to be greater than 99%. Nowcast estimates indicate that Delta will continue to be the predominant variant circulating in all 10 U.S. Department of Health and Human Services (HHS) regions, circulating at greater than 98%.



High Frequency Economic Data

BOX OFFICE RECEIPTS

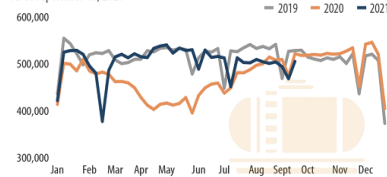
As of September 10-16, 2021



Sources: Box Office Mojo, First Trust Advisors

RAIL CAR TRAFFIC (CARS)

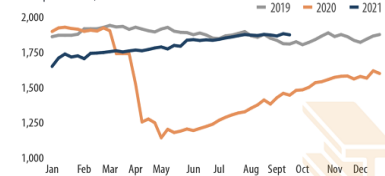
As of September 17, 2021



Sources: Bloomberg, Association of American Railroads, First Trust Advisors

STEEL PRODUCTION (NET TONS)

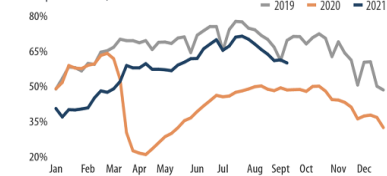
As of September 20, 2021



Sources: Bloomberg, American Iron and Steel Institute, First Trust Advisors

HOTEL OCCUPANCY

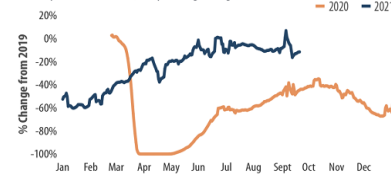
As of September 5-11, 2021



Sources: Hotel News Now, First Trust Advisors

OPENTABLE STATE OF THE RESTAURANT INDUSTRY

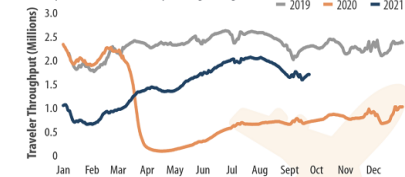
As of September 21, 2021 (7-Day Moving Average)



Sources: Open Table, First Trust Advisors

TSA CHECKPOINT DATA

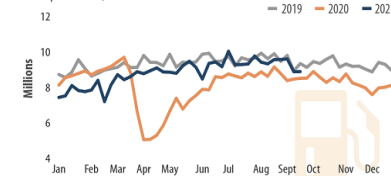
As of September 22, 2021 (7-Day Moving Average)



Sources: Transportation Security Administration, First Trust Advisors

SUPPLY OF MOTOR GASOLINE IN THE U.S. (MBBL/D)

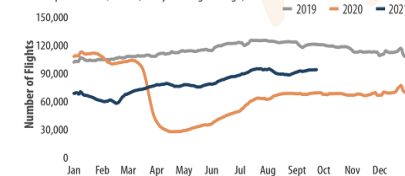
As of September 17, 2021



Sources: Bloomberg, First Trust Advisors

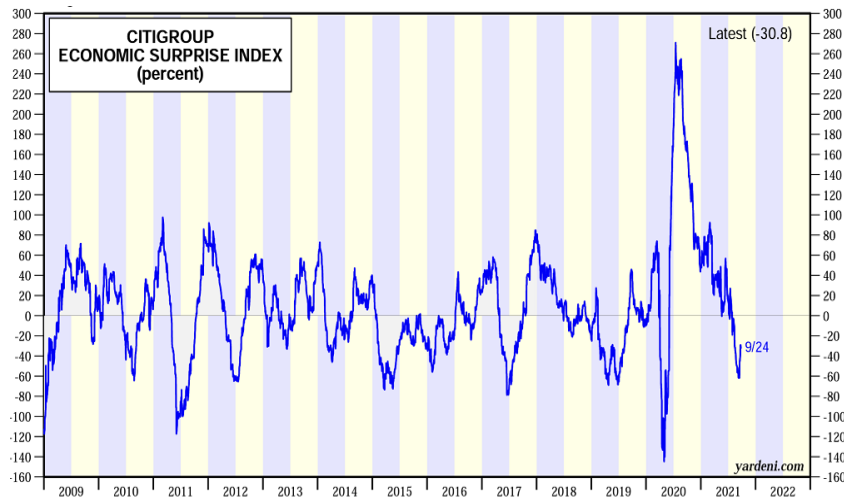
GLOBAL COMMERCIAL FLIGHTS

As of September 22, 2021 (7-Day Moving Average)



Sources: Flight Radar 24, First Trust Advisors

<https://www.ftportfolios.com/blogs/EconBlog/2020/4/13/coronavirus-high-frequency-data>



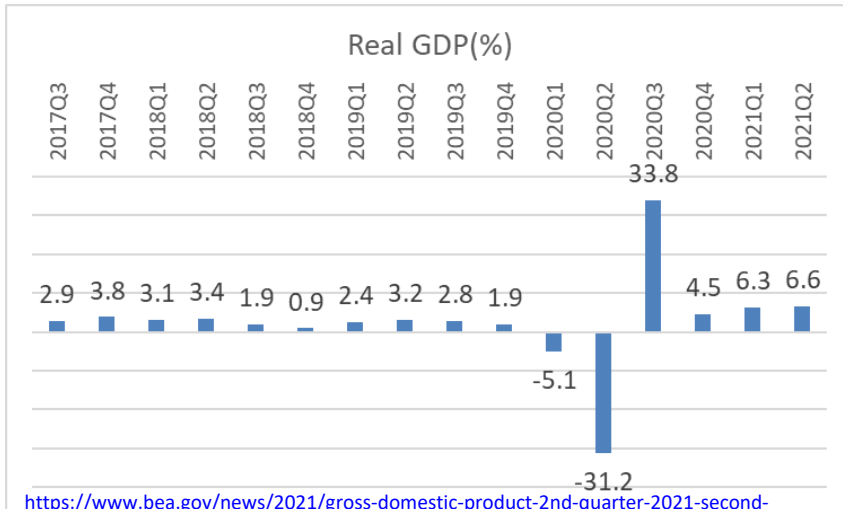
Note: Blue shaded areas are first half of each year.
Source: Citigroup.

<https://www.yardeni.com/pub/citigroup.pdf>

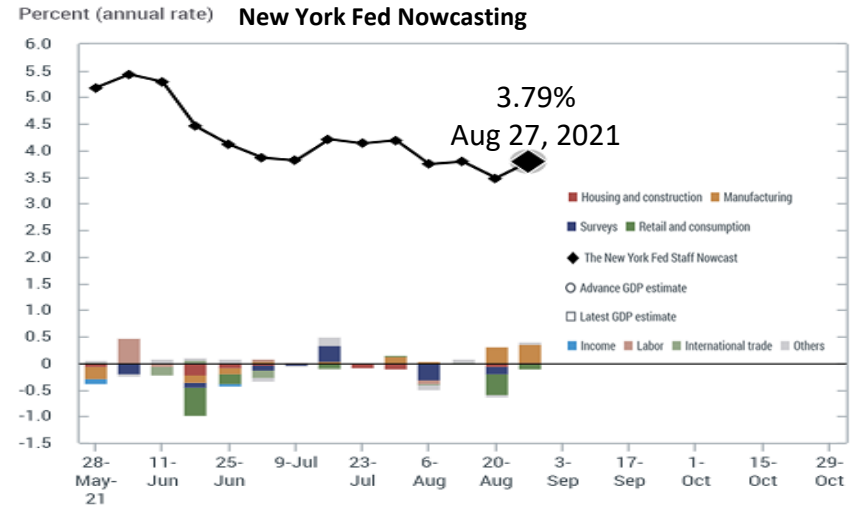
High frequency data shows that, economically, we have taken two steps forward and half a step back as the U.S. is again dealing with the resurgence of COVID-19. Going to the movies, taking the train, flying, and staying in hotels have all fallen since the summer. Also, the number of restaurant reopenings has also stalled and came down.

Citi's Economic Surprise Index, which measures the degree to which economic data is either beating or missing expectations, has gone negative in the last quarter, unlike the 9-months after the economic shutdown when most data exceeded expectations due to the fiscal and monetary supports. This upside surprise was supportive to an outsized stock performance.

Economic Growth – GDP

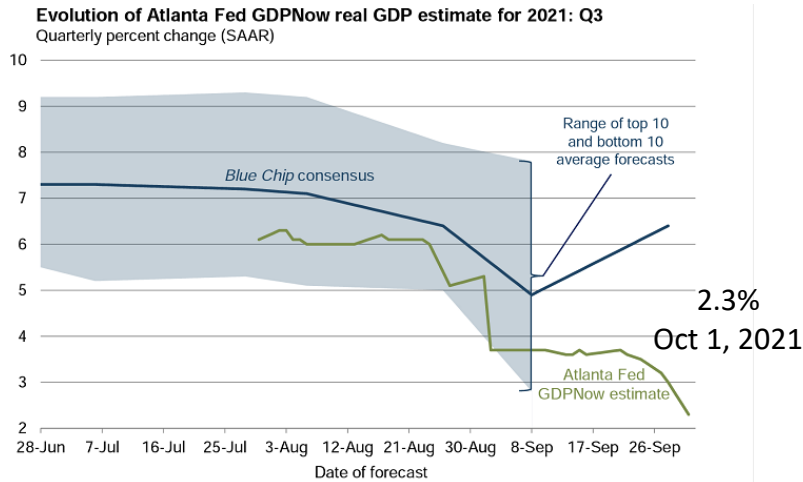


<https://www.bea.gov/news/2021/gross-domestic-product-2nd-quarter-2021-second-estimate-corporate-profits-2nd-quarter>



<https://www.newyorkfed.org/research/policy/nowcast>

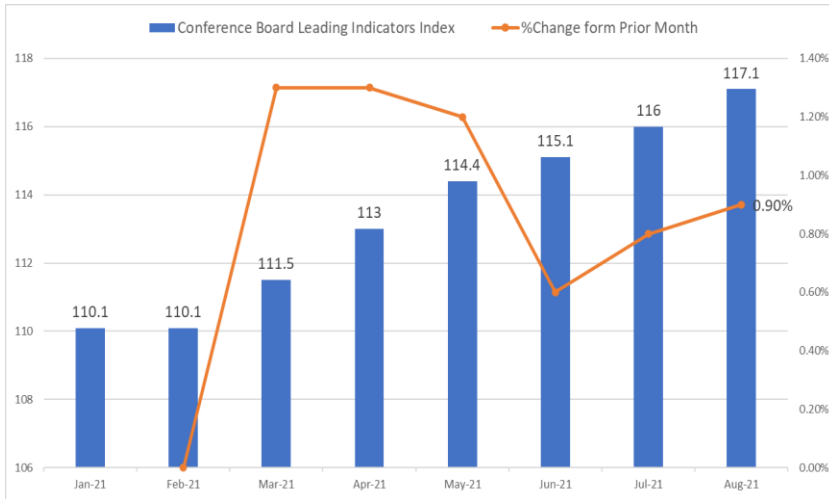
After the V-shape economic recovery four quarters ago, the economy continued to perform better than the post-global financial crisis period leading up to the COVID pandemic. However, it is likely that peak growth of this post V-shape recovery period is over. The computer forecasting models (nowcasting) from the Atlanta and the New York Federal Reserve Bank predict less than a 4% real GDP growth for the third quarter. The NY Fed has suspended its forecast for the foreseeable future, due to “the uncertainty around the pandemic and the consequent volatility in the data have posed a number of challenges to the Nowcast model.”



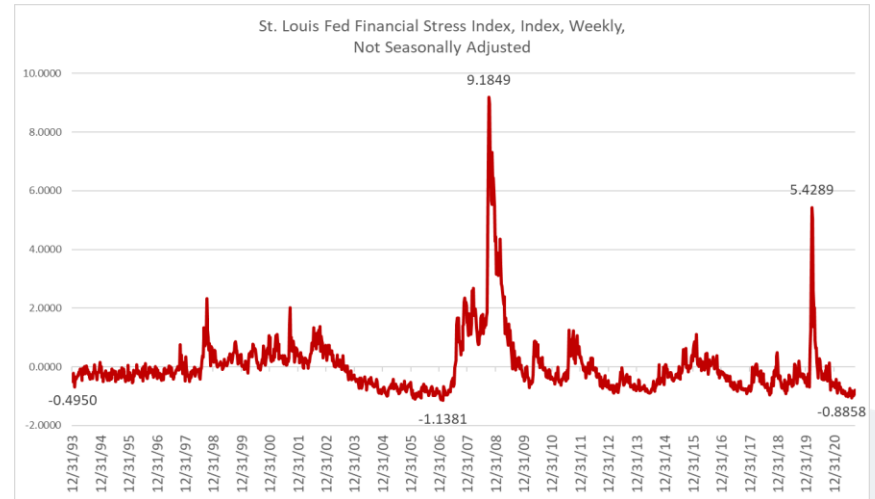
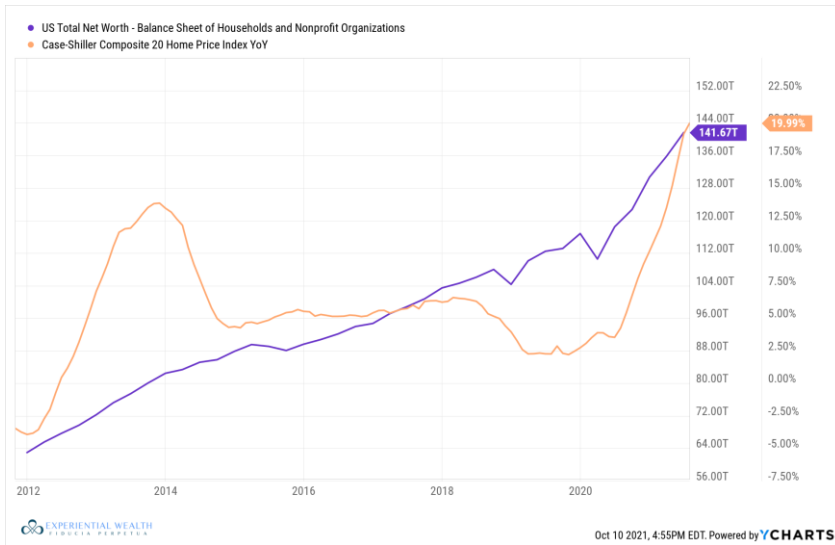
Sources: Blue Chip Economic Indicators and Blue Chip Financial Forecasts
Note: The top (bottom) 10 average forecast is an average of the highest (lowest) 10 forecasts in the Blue Chip survey.

<https://www.atlantafed.org/cqer/research/gdpnow>

Financial Conditions

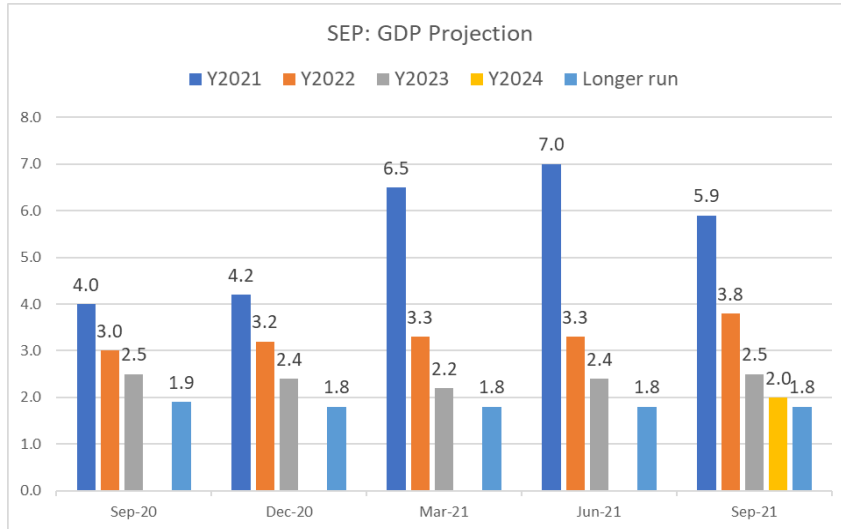


Source: Conference Board, Moody's



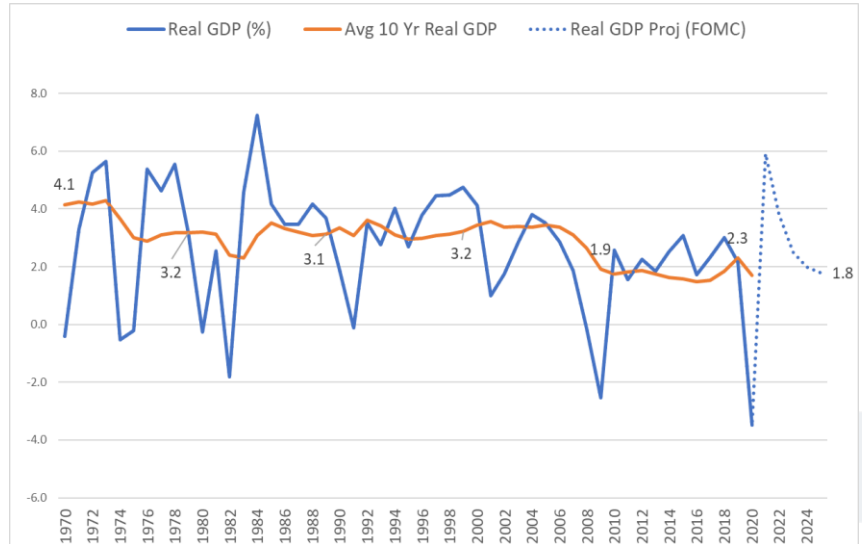
The Conference Board Leading Indicators Index intends to forecast future economic activity. Since the beginning of 2021, the index has continued to show consistent growth ahead. After a June retracement of the index, it has continued to move upward. The St. Louis Federal Reserve Bank's Financial Stress Index continues to remain supportive. (Negative is accommodative.) This index measures the degree of financial stress in the markets and is constructed from 18 weekly data series. Finally, U.S. private net worth continues to move higher since the pandemic. Over 60% of Americans own their own homes, and the significant rise in real estate prices has contributed to this ballooning wealth, which is positive to the economy overall.

Summary of Economic Projections - GDP



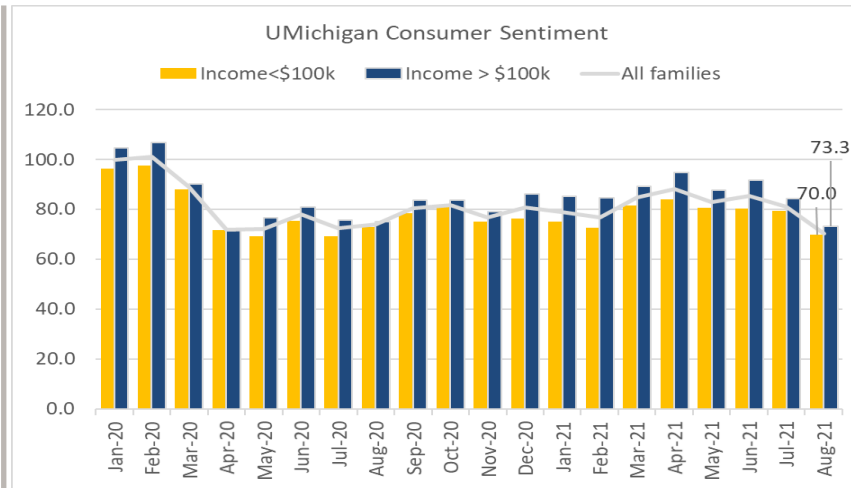
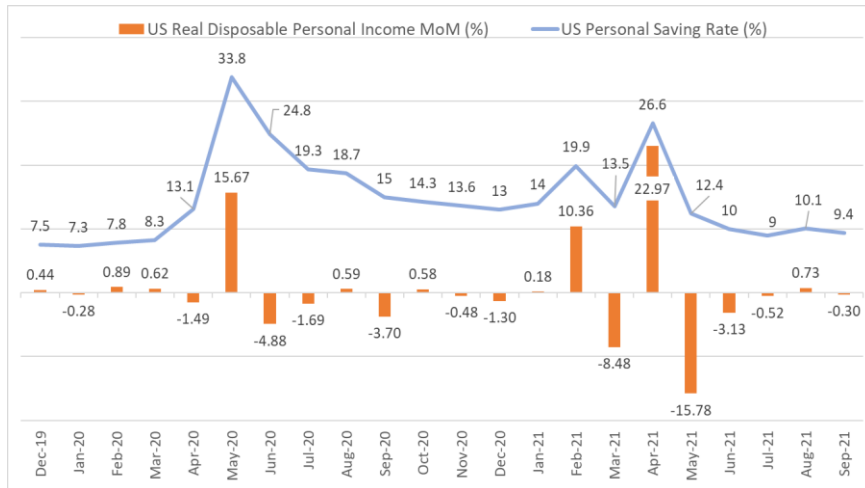
<https://www.federalreserve.gov/monetarypolicy/fomcproitabl20210922.htm>

The FOMC's September meeting released its quarterly Summary of Economic Projections (SEP) (a.k.a. Dot Plots). FOMC participants submit their projections of the most likely outcomes for real gross domestic product (GDP) growth, the unemployment rate, and inflation for each year for the next 4 years and over the longer run. Participant projections were based on information available at the time of the meeting, together with their assessment of appropriate monetary policy—including a path for the federal funds rate and its longer-run value—and assumptions about other factors likely to affect economic outcomes. The SEP should NOT be relied upon as the official position of the FOMC as a whole.

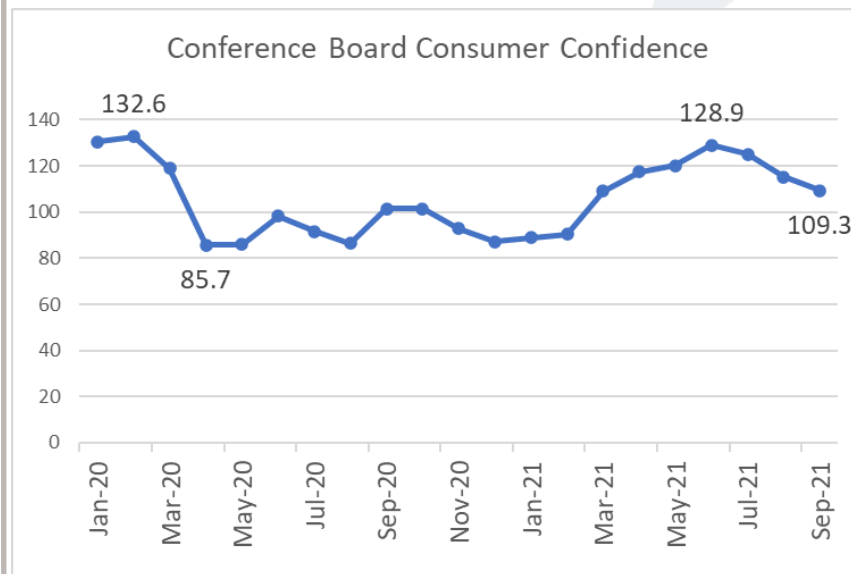


The current SEP shows that the members have revised down their average Y2021 projection for GDP from 7.0% to 5.9% while revising up Y2022 from 3.3% to 3.8%. For the first time, the projection for Y2024 is made available and is at 2.0%. Based on historical real GDP data, since the 70's, the U.S. has been in a flat to downward growth rate, ending in the last decade at an average of 2.3%. The latest SEP projects the longer run real GDP after 2024 will be at 1.8%. Since the last two decades, one of the obvious contributors to this slowing economic trend is the aging of U.S. demographics (both slowing birthrate and growing retirees).

Income, Savings & Sentiments



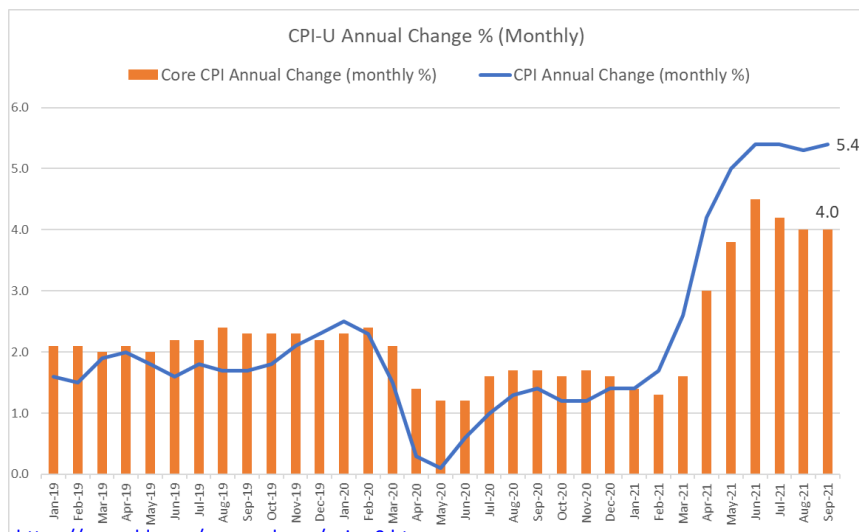
<https://data.sca.isr.umich.edu/fetchdoc.php?docid=68092>



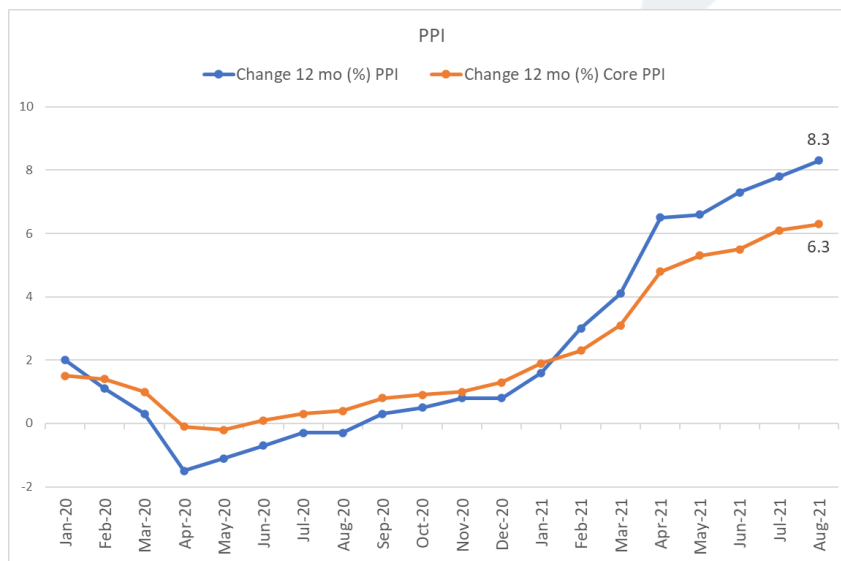
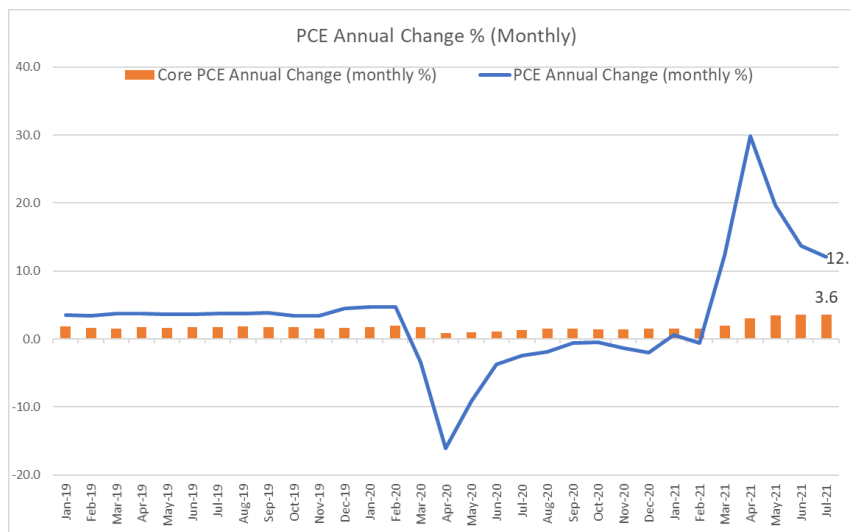
Although Personal Disposable Income has continued to come down from the April high, the saving rate remains above pre-COVID rate. However, this rate is expected to continue its downward trend, as almost all transfer payments (such as extended unemployment benefits) have come to an end.

The University of Michigan monthly consumer sentiment survey shows a continuing drop for all income classes. The Conference Board September consumer confidence survey also confirmed the lowering trend, reversing the increasing confidence in the first half of 2021. This may simply be the resurgence of COVID in the U.S. With Delta slowing, consumer sentiment and confidence will likely return.

Inflation – CPI, PCE and PPI



<https://www.bls.gov/news.release/cpi.nr0.htm>



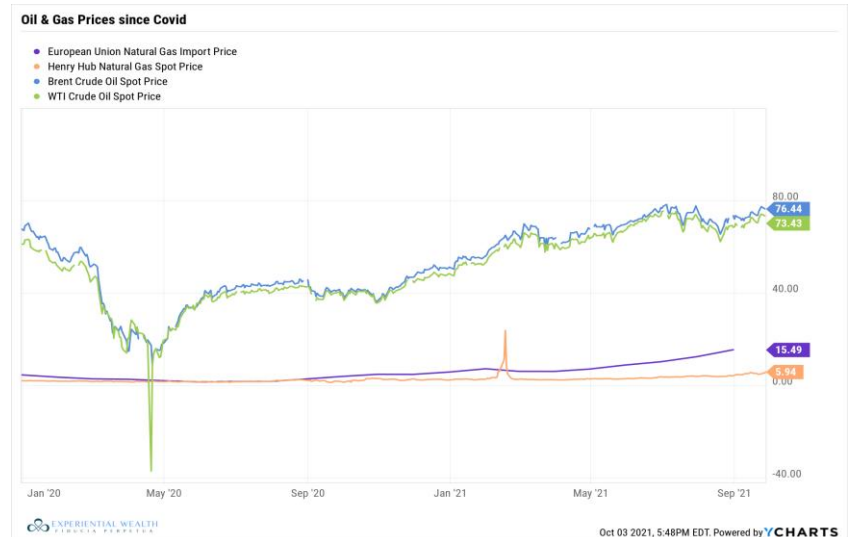
<https://www.bls.gov/bls/news-release/ppi.htm#2021>

Annualized CPI change suggests the recent peak in headline inflation may be behind us, even though inflation remains elevated. The Federal Reserve’s preferred inflation gauge, PCE, is also significantly elevated. Core inflation (excluding food and energy prices) is at 4% for CPI and 3.6% for PCE. Both are twice as high as the pre-COVID period. Annualized PPI change tells a different story. Headline at 8.3% as of August and core at 6.3% are both higher than the CPI. Neither shows a slowdown in their escalation since the bottom reach in April. These represent input costs to producers. Even if retailers can hold off passing the increase prices onto consumers, prices are not likely to drop from here, which supports a higher inflation regime.

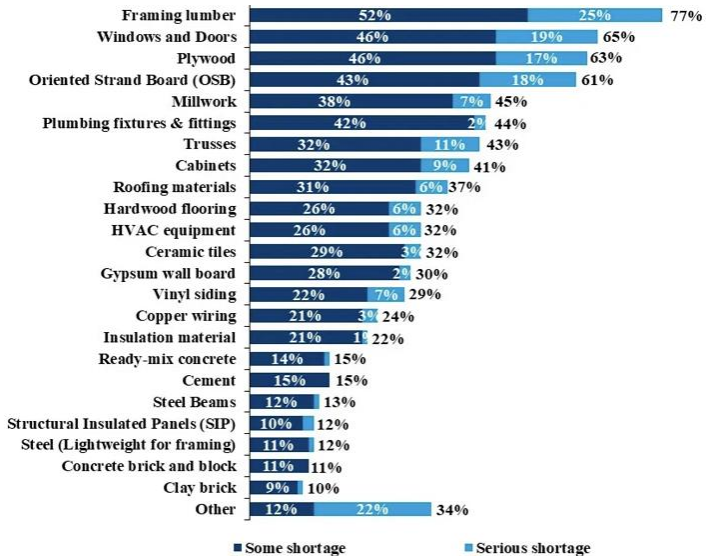
Evidence of Supply Chain Bottleneck



<https://tradingeconomics.com/commodity/baltic>



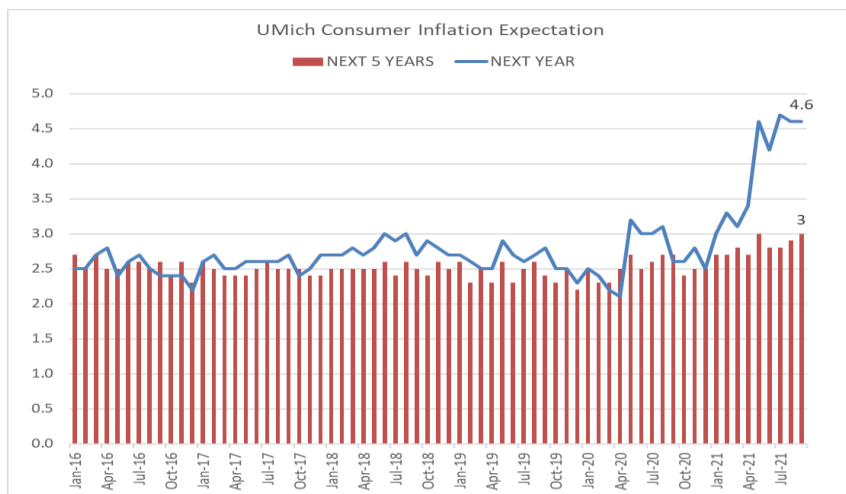
NAHB survey – Share of Remodelers Report (respondent %)



<https://mycoastalwindows.com/materials-shortage-for-windows-roofing-and-vinyl-siding-heres-how-we-can-help/>

Baltic Dry Index is a shipping and trade index that measures changes in the cost of transporting various raw materials, such as coal and steel. The cost has increased significantly by multi-folds since COVID. Oil prices have also escalated since the low reached during the beginning of COVID. Production remains below pre-COVID levels, and it will be a while to catch up. This is especially true as many countries are committed to carbon neutrality in 2050, which constrained any investment in oil and gas production. In the U.S., according to the Remodelers Survey, almost all materials are in or expected to be in short supply. Trucking has been a significant bottleneck as well. The oft-cited challenge is insufficient new drivers entering the workforce as veterans retire. A recent study stated that nearly 57% of all truck drivers are older than 45 with 23% in the 55+ age bracket. Driverless trucks will not likely be timely to meet this shortage, and the lack of drivers is not likely to be transitory.

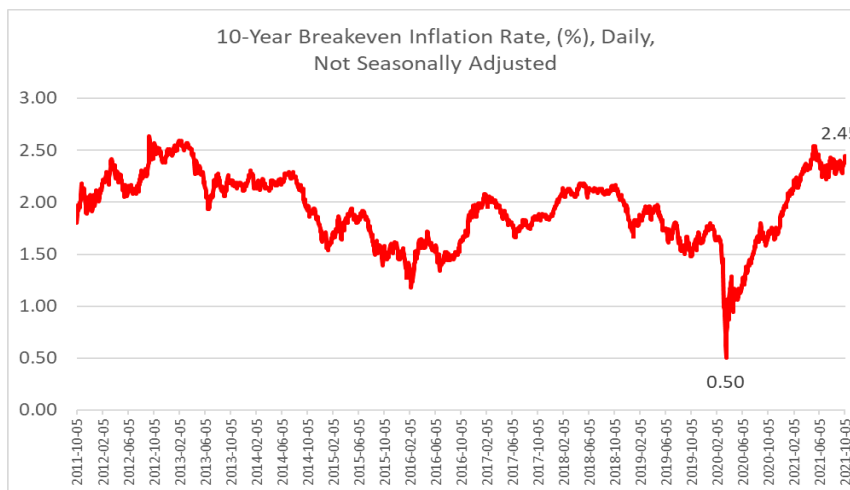
Inflation Expectation – Survey & Market Based



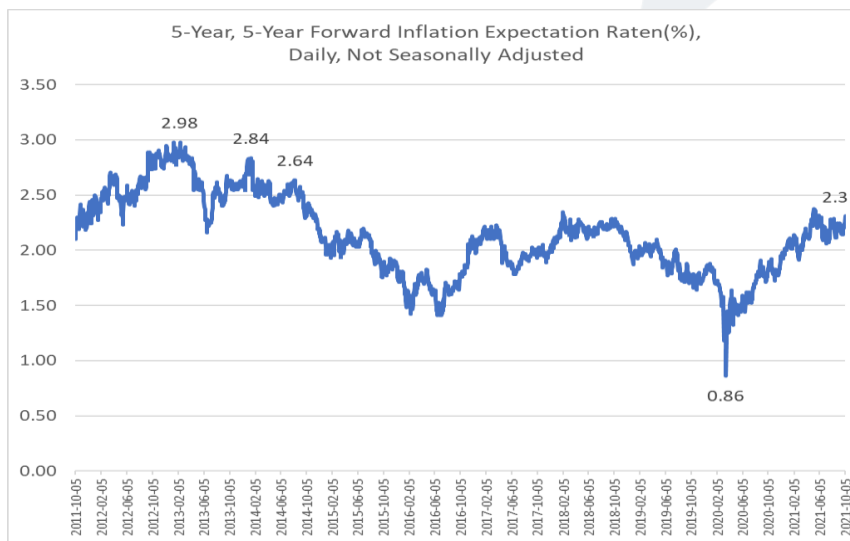
<http://www.sca.isr.umich.edu/tables.html>

Inflation expectation tells us what consumers expect future inflation will be, and when this is not anchored, it will affect consumer behavior. Ultimately, inflation expectation would affect the future inflation rate. Each month, the University of Michigan publishes a survey of consumers' inflation expectations, and it is currently at 3% for the next 5 years but 4.6% for the next year.

Two other indicators offer the investor or market view of what the future inflation rate is priced in today. The first is the 10-year breakeven rate, and it is at 2.45%, just a bit below the 5-year average rate expected in consumer surveys. The other is what investors expect the 5-year forward rate for inflation 5 years from now, and it is at 2.31%. Both of these market-based inflation expectations do not indicate a runaway inflation rate and suggest the current inflation remains reasonably anchored.

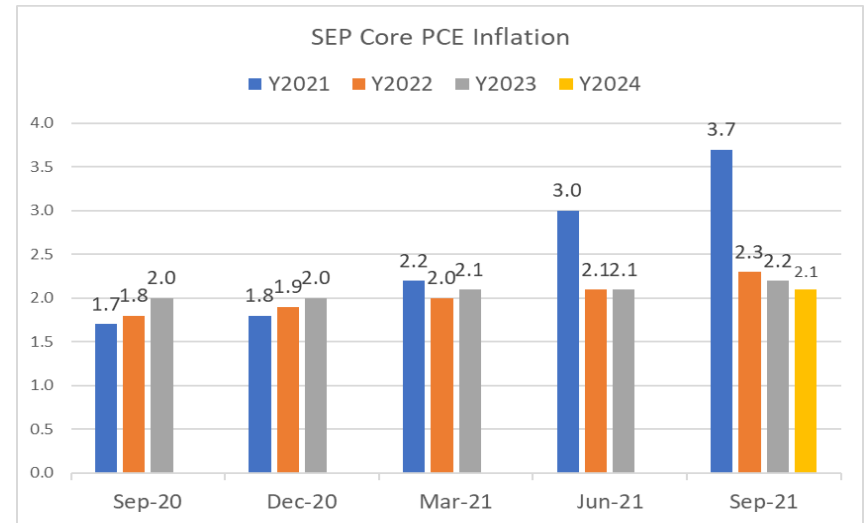
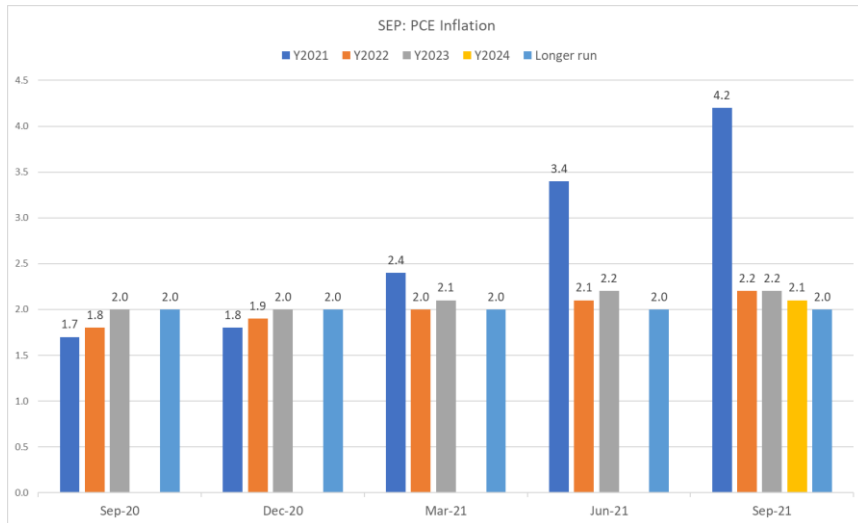


<https://fred.stlouisfed.org/series/T10YIE>



<https://fred.stlouisfed.org/series/T5YIFR>

Summary of Economic Projections – Inflation (Core PCE)

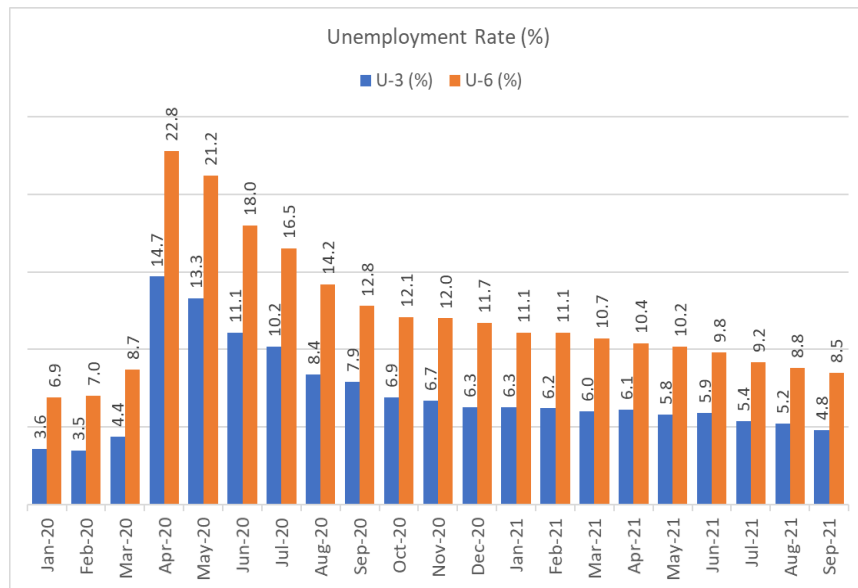
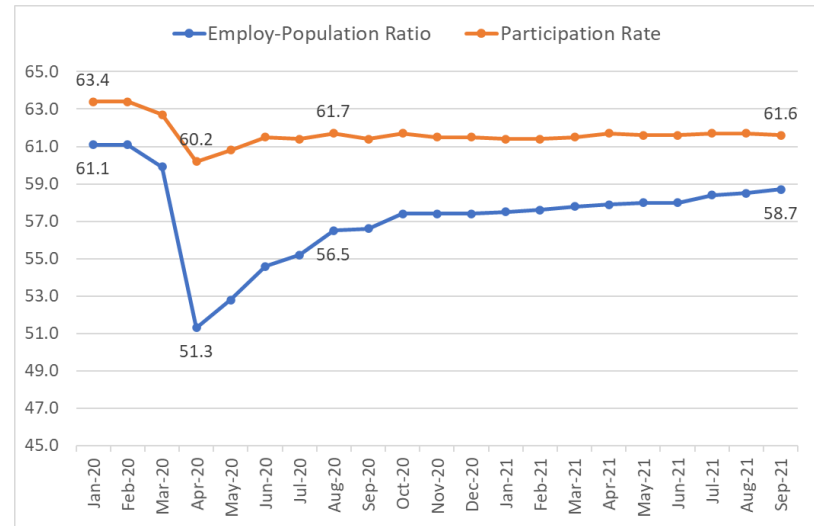
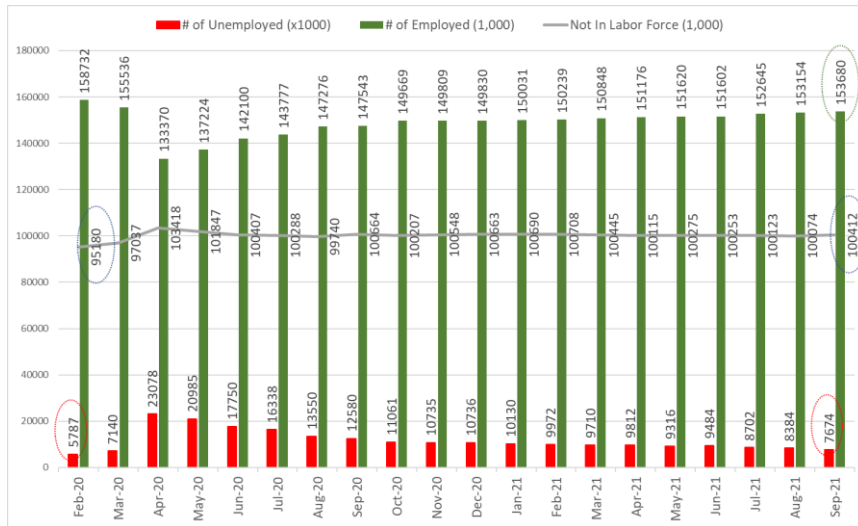


<https://www.federalreserve.gov/monetarypolicy/fomcprojtabl20210922.htm>

Since last year, the Federal Reserve has been broadcasting that they will not react to the first sign of inflation. The Federal Reserve intends to see a higher inflation regime for a while to (1) have a higher certainty that deflation or disinflation is not a threat to the economy and (2) the average inflation rate is above 2% when the past years of below 2% are taken into consideration. This means that the Federal Reserve will not take monetary action in response to higher inflation, thereby allowing the economy to run hotter for longer.

It is clear that the members of the Federal Open Market Committee see inflation peaking in 2021 and retreating back to 2% or slightly over 2% by 2025 and beyond. Of course, inflation dynamics are fluid, and the exact inflation path may be uncertain. However, directionality is clear. Of late, Chair Powell no longer refers to the post-COVID inflation as transitory. However, the period of rising inflation rate may be longer than most observers. We believe that the supply chain of finished and raw materials will remain in some form of bottleneck for some time to come. This will keep inflation higher and present for longer than expected.

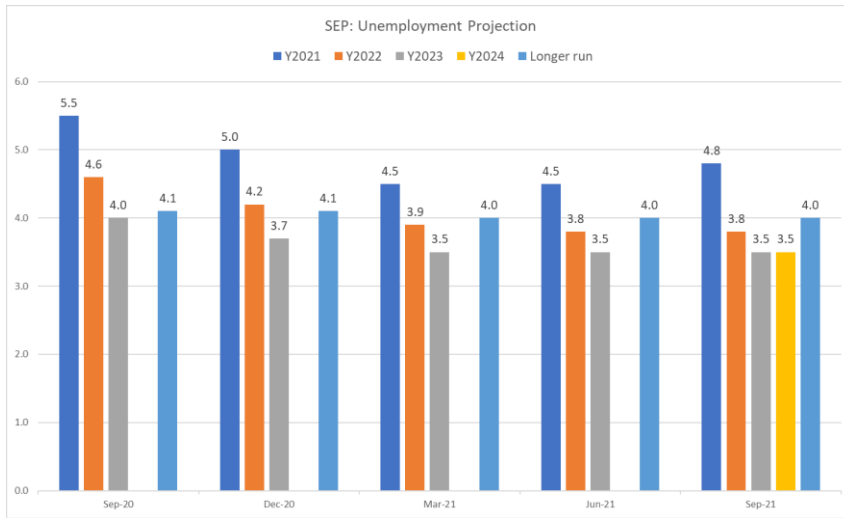
The Labor Economy



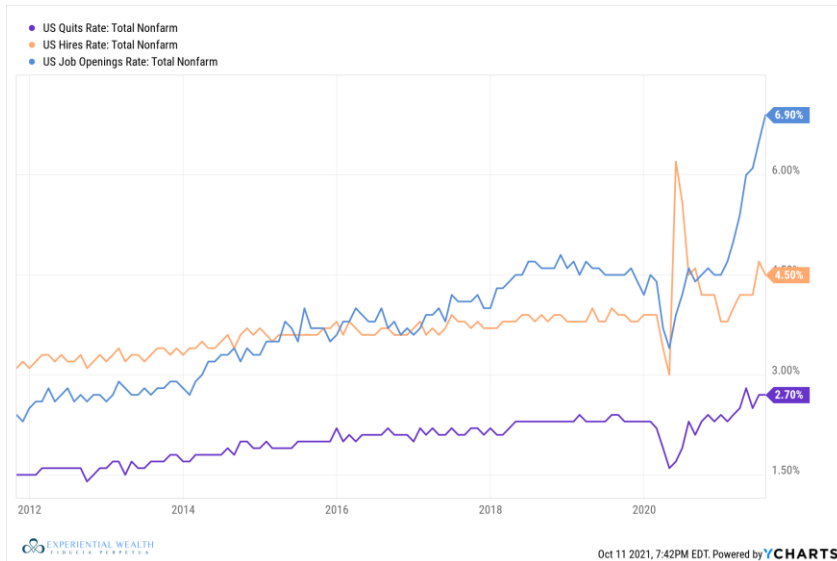
The labor force “participation rate” is the percentage of the working-age population — the civilian non-institutional population age 16 or older — in the labor force. The labor force measures how many Americans are working or actively seeking work (i.e. excluding those who quit looking for a job).

The “employment-population ratio,” measures the civilian labor force currently employed against the total working-age population of a region, municipality, or country. U-3 (official unemployment rate) - total unemployed, as a percent of the civilian labor force; U-6 - total unemployed, plus all persons marginally attached to the labor force, plus total employed part-time, for economic reasons, as a percentage of the civilian labor force, plus all persons marginally attached to the labor force

Summary of Economic Projections – Unemployment (U3)

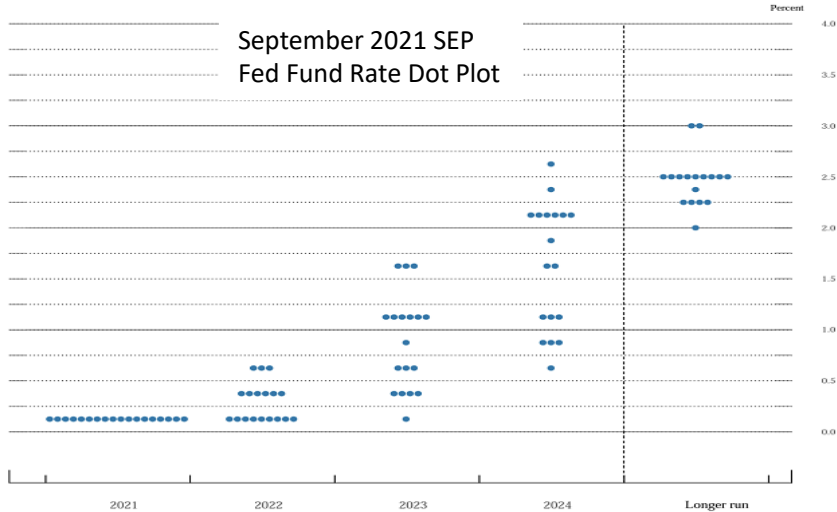


<https://www.federalreserve.gov/monetarypolicy/fomcprojtbl20210922.htm>

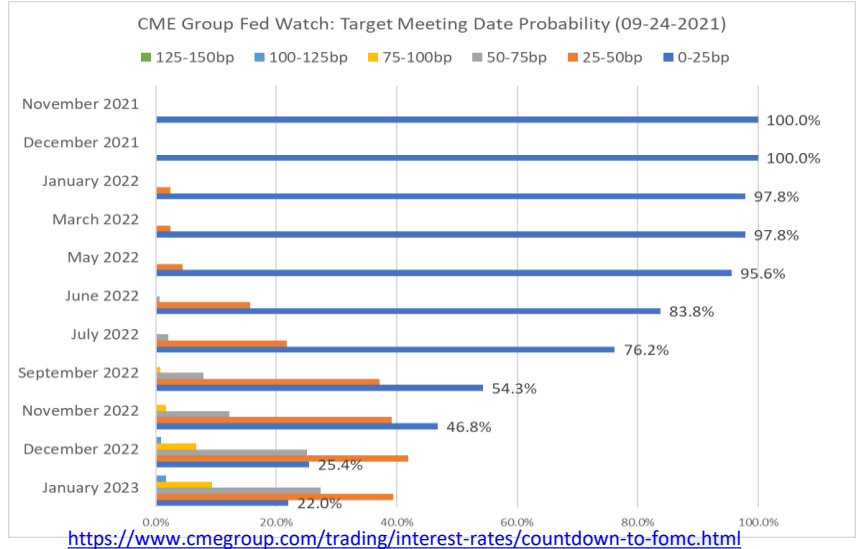
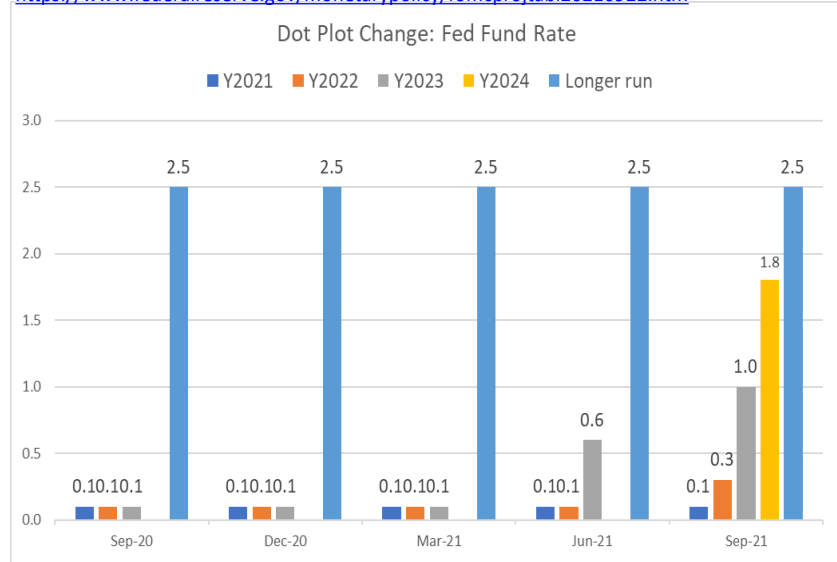


The Federal Reserve expects the U.S. to return to its pre-COVID low of 3.5% unemployment rate by 2023. The September U3 unemployment is now at 4.8%. This is the lowest since the pandemic; however, workers not in the labor force, participation rate, and employment-population ratio remain higher than COVID. At the same time, the Job Opening rate continues to spike while the hire rate and the quit rate remain lower to flat. There are many factors that may explain the stalling labor recovery. September marks the last month for the extended unemployment payments and the opening of a school year. Many workers are waiting for these events to transpire before reentering the workforce. Next month, data will be more telling about the labor economy.

Summary of Economic Projections – Fed Fund Rate



<https://www.federalreserve.gov/monetarypolicy/fomcprojtabl20210922.htm>

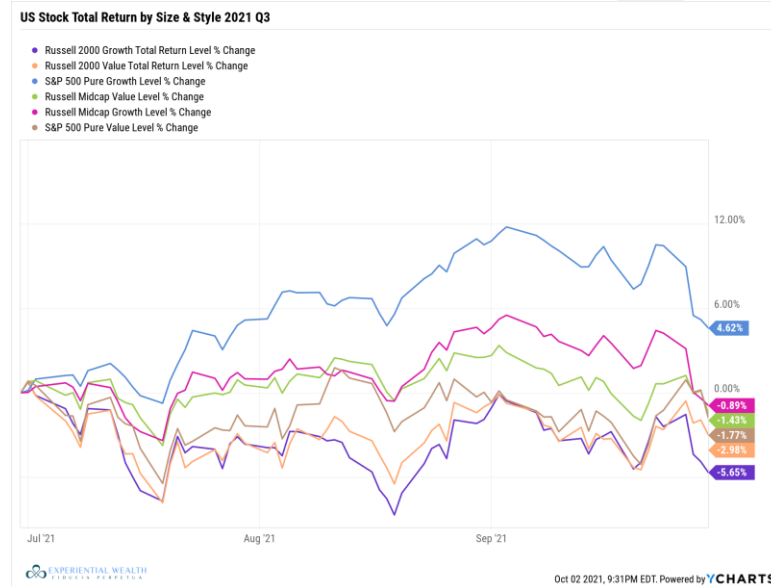
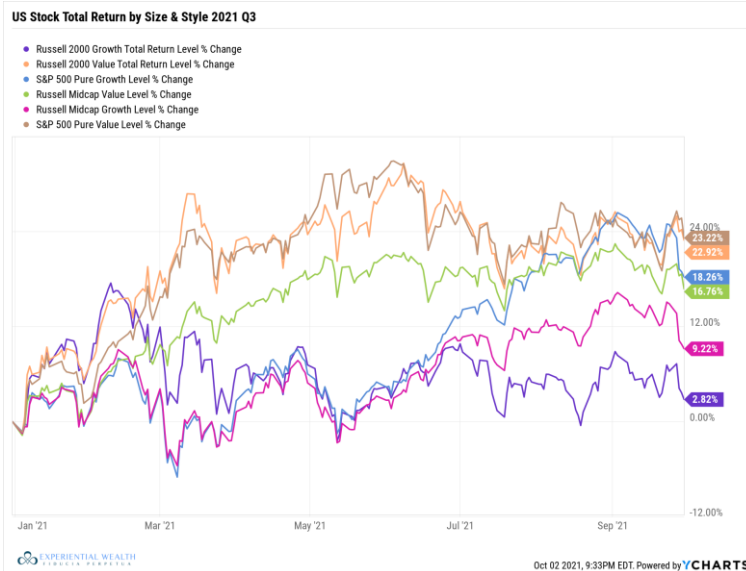
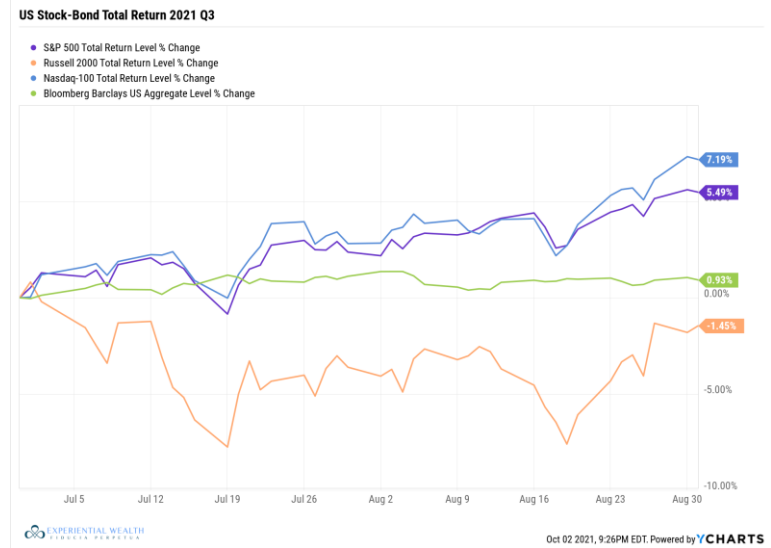
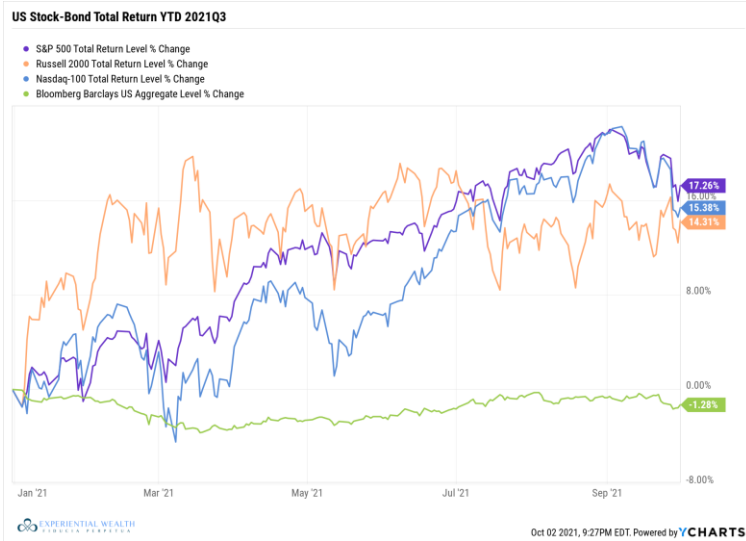


<https://www.cmegroup.com/trading/interest-rates/countdown-to-fomc.html>

The FOMC members continue to move up the month when they expect they will raise interest rates. There is an even chance that 2022 will witness a rate hike. The Chicago Mercantile Exchange confirms that traders are expecting more than a 50% chance that the interest rate would be raised during the November 2023 meeting. The picture may not be so clear. The current Delta wave has pinched economic growth and slowed the recovery in the end of the third quarter and the beginning of the fourth quarter. Depending on the supply disruption and the possibility of a new wave of COVID in the winter, the economy may remain challenged. These and global factors may keep the Federal Reserve on hold for rate hikes even longer.



US Stock & Bond Total Return; Q3 has been lackluster



US Equity Sector Performance

S&P 1500 Sector Total Return Indexes	2020Q1	2020Q2	2020Q3	2020Q4	2021Q1	2021Q2	2021Q3
S&P 1500 Communication Services	-12.90%	34.66%	15.25%	28.46%	31.42%	11.97%	2.61%
S&P 1500 Consumer Discretionary	-13.01%	31.88%	14.97%	24.31%	16.32%	11.97%	1.54%
S&P 1500 Consumer Staples	-13.82%	28.00%	12.04%	16.85%	11.94%	11.76%	1.28%
S&P 1500 Financials	-14.03%	25.98%	11.95%	16.50%	10.60%	10.56%	1.16%
S&P 1500 Health Care	-17.04%	19.94%	10.27%	13.99%	8.92%	8.17%	0.88%
S&P 1500 Industrials	-21.75%	17.87%	8.76%	13.44%	8.13%	7.60%	-0.40%
S&P 1500 Materials	-22.66%	14.10%	5.83%	9.68%	6.10%	6.61%	-0.57%
S&P 1500 Energy	-27.27%	13.16%	5.11%	8.91%	5.31%	4.71%	-0.69%
S&P 1500 Real Estate	-27.57%	12.23%	3.58%	8.27%	3.38%	4.19%	-1.46%
S&P 1500 Semiconductors	-32.12%	8.55%	1.05%	7.16%	3.37%	3.61%	-3.90%
S&P 1500 Utilities	-51.63%	2.35%	-19.22%	6.69%	1.85%	-0.21%	-3.93%

The third quarter performance, using the S&P 1500 data (this includes the S&P 500 large cap, 400 mid-cap and 600 small cap indexes) of the 11 sectors, shows where investors are focused. For example, after the shutdown last year, Consumer Discretionary, Energy and Semiconductors (tech) led the way, whereas Utilities, Consumer Staples and Financials were slow to recover as there is still great economic uncertainty due to the virus. With the promise of vaccines and the increasing certainty in the economy reopening in the fourth quarter last year and the first quarter this year, Energy came roaring back, along with Old Economy sectors of Energy, Financials, Industrials and

Materials. The last quarter witnessed adjustment to being overly optimistic about the speed of the recovery as the Delta wave raged on. Also, the Federal Reserve's talk of tapering and the persistent upside comprised of inflation (transitory or otherwise) gave pause to investor enthusiasm. In an uber accommodative interest rate environment, stock prices are supported by multiple expansion. This simply means that investors are willing to pay more for each future dollar of earnings. For prices of stocks to continue their upward trajectory when rates are to stop falling and likely start increasing, earnings growth becomes the driver.

US and Foreign Equity Total Return by Trailing Quarters

US Equity Size & Style Total Return	2020Q1	2020Q2	2020Q3	2020Q4	2021Q1	2021Q2	2021Q3
S&P 500	-14.85%	27.99%	12.86%	31.37%	12.70%	11.38%	0.69%
Russell 3000 Growth	-19.60%	25.42%	8.93%	17.21%	11.89%	8.55%	0.58%
Russell 3000 Value	-27.32%	20.54%	5.42%	12.41%	6.18%	5.16%	-0.93%
Russell 2000	-30.61%	14.55%	4.93%	12.15%	1.19%	4.29%	-4.36%

None US Equity Total Return	2020Q1	2020Q2	2020Q3	2020Q4	2021Q1	2021Q2	2021Q3
MSCI All Country World Index	-10.22%	19.39%	12.57%	34.92%	4.95%	15.09%	9.86%
MSCI China	-21.26%	19.22%	9.70%	22.01%	4.68%	14.37%	-0.45%
MSCI Europe Australia Far East	-22.83%	18.87%	8.25%	19.77%	4.21%	7.74%	-0.95%
MSCI Europe Total Return	-23.57%	18.18%	4.80%	16.05%	3.48%	7.53%	-1.46%
MSCI Emerging Markets	-24.23%	15.57%	4.58%	15.66%	2.34%	5.17%	-7.97%
MSCI Emerging Markets Latin America	-36.34%	15.37%	-1.23%	14.79%	-0.43%	5.12%	-13.21%
MSCI Russia Total Return	-45.58%	14.88%	-4.30%	11.21%	-5.27%	2.32%	-18.13%

The third quarter is the worst performing quarter for U.S. and global equities, with U.S. small cap stocks and value investment style underperforming U.S. large cap stocks and growth style. This continues the trend since the second quarter. Growth investment style, which represents stocks with great promises and earnings into the distant future, such as technology related industries, has historically done well in low interest rate environments. Growth industries have significantly benefited during the COVID pandemic and the current extremely accommodative monetary policy environment. However, small cap stocks and value style have been significant outperformers during 2020Q4 and 2021Q1 when the

vaccine became a reality with an anticipation of fully reopening the U.S. economy. The preferences for these stocks may be in favor again as the current Delta wave subsides and the economy continues to return to normal.

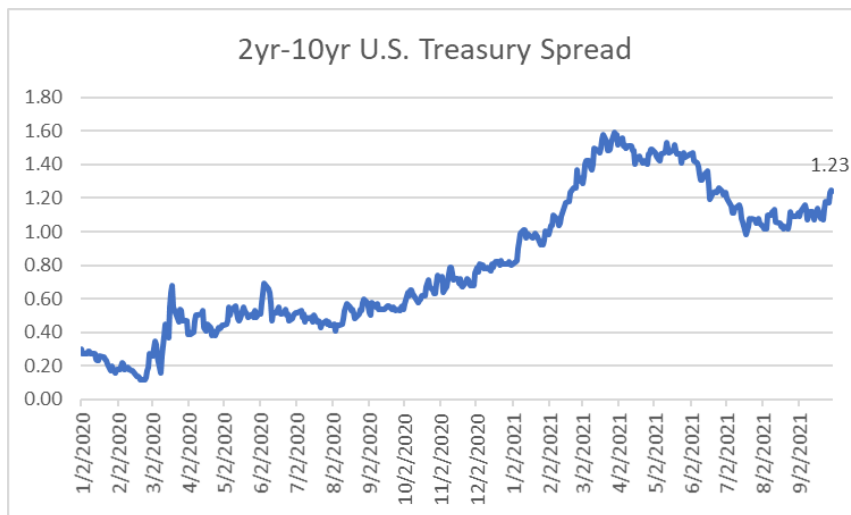
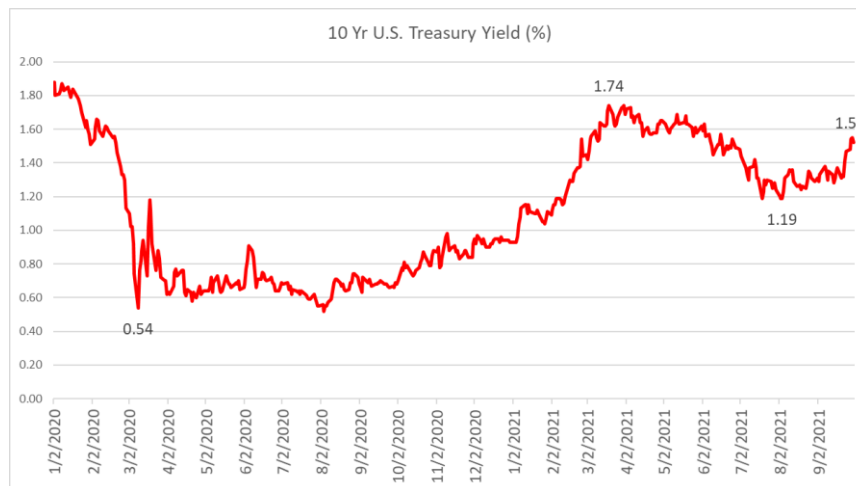
Overall, foreign equities have underperformed when compared to the U.S. Although China was the first country to reopen domestically with surging exports, draconian changes in its domestic policies have significantly contributed to its underperformance. Since a year ago, Russian equities have consistently outperformed.

These rolling period data support the benefits of diversification and the challenge for market timing or sector rotation.

Fixed Income Total Return & Interest Rates

2020Q1	2020Q2	2020Q3	2020Q4	2021Q1	2021Q2	2021Q3
3.15%	10.18%	4.60%	6.45%	0.85%	3.25%	1.75%
1.69%	4.24%	4.14%	5.09%	-1.47%	2.74%	0.89%
-2.68%	3.38%	3.03%	1.62%	-3.37%	1.83%	0.05%
-12.68%	2.90%	0.62%	0.67%	-5.29%	0.92%	-1.59%

Fixed Income Total Return
Bloomberg Barclays Global Aggregate ex-USD
Bloomberg Barclays US Aggregate
Bloomberg Barclays US Corporate High Yield
Bloomberg Barclays US TIPS (Series-L)



Since the high reached in March this year at 1.74% for the U.S. 10-year treasury, the yield has been declining until late summer. Now the yield is gradually increasing. The likely causation of this tightening of market-driven interest rate is the per-announcement of slowing the massive monthly \$120 billion purchases of treasuries and mortgage securities by the Federal Reserve. Historically, when taper begins, normalizing or hiking interest rates is not far behind. Market participants are anticipating a generally tightening policy and have begun to push rates higher. The flattening yield curve, since the first quarter, has now given way to a more upward sloping positive yield curve, where longer term bonds are paying more yield to begin compensating for the rising inflation rate.

World Economy

OECD	2019	2020	Project 2021				Project 2022			
	Report Date	Oct-20	Mar-21	Dec-20	Apr-21	Sep-21	Apr v. Sep	Dec-20	Apr-21	Sep-21
U.S.	2.2%	-3.5%	3.2%	6.5%	6.0%	↓	3.5%	4.0%	3.9%	↓
World	2.6%	-3.4%	4.2%	5.6%	5.7%	↑	3.5%	4.0%	4.5%	↑
G-20	2.9%	-3.2%	4.7%	6.2%	6.1%	↓	3.7%	4.1%	4.8%	↑
Euro Area	1.3%	-6.8%	3.6%	3.9%	5.3%	↑	3.3%	3.8%	4.6%	↑
China	6.1%	2.3%	8.0%	7.8%	8.5%	↑	4.9%	4.9%	5.8%	↑

<https://www.oecd.org/economic-outlook/>

OECD: "The global economic recovery remains strong, helped by government and central bank support and by progress in vaccination. But although global GDP has now risen above its pre-pandemic level, the recovery remains uneven with countries emerging from the crisis facing different challenges. Large differences in vaccination rates between countries are adding to the unevenness of the recovery. Renewed outbreaks of the virus are forcing some countries to restrict activities, resulting in bottlenecks and pressures on supply chains. A rapid increase in demand as economies reopen has pushed up prices in key commodities such as oil and metals. Food prices are also rising boosting prices especially in emerging markets. Tensions along supply chains caused by the pandemic have added to cost pressures. At the same time, shipping costs have increased sharply."

IMF	Project 2021							Project 2022				
	Report Date	2019	2020	Oct-20	Apr-21	Jul-21	Oct-21	Apr v. Oct	Oct-20	Apr-21	Jul-21	Oct-21
U.S.	2.20%	-3.40%	3.10%	6.40%	7.00%	6.00%	↓	2.90%	3.50%	4.90%	5.20%	↑
World	2.80%	-3.10%	5.20%	6.00%	6.00%	5.90%	↓	4.20%	4.40%	4.90%	4.90%	=
Euro Area	1.30%	-6.30%	5.20%	4.40%	4.60%	5.00%	↑	3.10%	3.80%	4.30%	4.30%	=
Advanced	1.70%	-4.50%	4.30%	5.10%	5.60%	5.20%	↓	2.90%	3.60%	4.40%	4.50%	↑
China	6.10%	2.30%	8.60%	8.40%	8.10%	8.00%	↓	5.80%	5.60%	5.70%	5.60%	↓
Emerging	3.70%	-2.10%	6.00%	6.70%	6.30%	6.40%	↑	5.10%	5.00%	5.20%	5.10%	↓

<https://www.imf.org/en/Publications/WEO/Issues/2021/10/12/world-economic-outlook-october-2021>

IMF: "The global economic recovery is continuing, even as the pandemic resurges. The fault lines opened up by COVID-19 are looking more persistent—near-term divergences are expected to leave lasting imprints on medium-term performance. Vaccine access and early policy support are the principal drivers of the gaps.

The global economy is projected to grow 5.9% in 2021 and 4.9% in 2022. The downward revision for 2021 reflects a downgrade for advanced economies—in part due to supply disruptions—and for low-income developing countries, largely due to worsening pandemic dynamics. This is partially offset by stronger near-term prospects among some commodity-exporting emerging market and developing economies. Rapid spread of Delta and the threat of new variants have increased uncertainty about how quickly the pandemic can be overcome. Policy choices have become more difficult, with limited room to maneuver."

Final Words

- The world continues to adjust to the waning and waxing of COVID infection and the continuing challenges of vaccination globally (from anti-vaxxers to uneven distribution). The biggest concern is the birth of a new variant that requires yet to be developed vaccines to protect against. We should come to terms with the likelihood that COVID is a more permanent reality and how our behavior, mindset and policies need to adjust accordingly and what that means to the global economy in the intermediate term.
- Although not referred to as a tapering, the Federal Reserve has closed down the emergency (liquidity pumping) programs* that were put into place since the shutdown and these were the beginning of rewinding the unprecedented monetary support policies.
- The Fed has signaled that they will begin winding down their \$120 billion per month quantitative easing (QE) program before the end of this year. On the one hand, the ending of the emergency programs and tapering are signs of the Fed recognizing the V-shaped recovery, but this also means a further tightening of liquidity. Thus far, the Fed has made clear that this does not automatically signal interest rate normalization to follow. However, the market will remain volatile throughout this period to assess the Fed's tightening policy, and, depending on the level of inflation and its elevated duration, investors are increasingly betting on rate normalization sooner rather than later.
- In the longer run, we believe inflation will remain temporary (elevated on a reducing manner through 2023) and the economy is likely to grow at a diminishing pace to pre-crisis level by 2024. As such, when rate normalization begins, the Fed Fund rate has a limited upside (may be three to four 25bp hikes).
- These macro factors, in addition to China repositioning itself to be more inward focused and the emerging and developing economics struggle with COVID and vaccines, will continue to add uncertainty to risk assets.

*Lending to securities firms through the Primary Dealer Credit Facility (PDCF) – expired 03-31-2021

Money Market Mutual Fund Liquidity Facility (MMLF) backstops money market mutual funds – expired 03-31-2021

Fed's repurchase agreement (repo) operations - reduced 03-18-2021

The Fed had restricted dividends and share buybacks of bank holding companies – restrictions lifted as of 06-30-2021

Primary Market Corporate Credit Facility (PMCCF) and the new Secondary Market Corporate Credit Facility (SMCCF) – existed 06-02-2021, the Fed has gradually sell off its \$13.7 billion of corporate bonds.

The Commercial Paper Funding Facility (CPFF) – expired 03-31-2021

Main Street Lending Program provided loans to small- and mid-sized businesses - 12-14-2020, stop taking loan submissions

Paycheck Protection Program Liquidity Facility facilitates bank lending to small businesses. – expired 06-30-2021

Term Asset-Backed Securities Loan Facility (TALF) - expired 12-31-2020

International swap lines making U.S. dollars available to other central banks so they can lend to banks that need them - expired 09-30-2021

