

Federal Reserve Policy Recommendations:
Response to Economic Conditions Created by the Coronavirus Pandemic

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Federal Reserve Policy Recommendations

One of the most pressing economic issues in the wake of the economic shocks caused by the COVID-19 pandemic has been how quickly the economy will return to pre-pandemic levels of output. Compounding this question are issues of simultaneous rising inflation and high unemployment, despite the efforts to the contrary by the Federal Reserve. The unprecedented economic conditions created by the coronavirus pandemic and subsequent recovery have led the Federal Reserve to employ unconventional monetary policy tools, like quantitative easing and forward guidance, in an effort to stimulate economic growth.

It is usually taken as a given that expansionary monetary policy results in increased economic growth and decreased unemployment, with the potential for increasing inflation. However, this simplistic view fails to account for the impact of monetary policy across differing income levels, and for the effects of unconventional monetary policy tools like quantitative easing and forward guidance that have been pursued during and after the global financial crisis. In this paper, we endeavor to examine current and historical economic trends in order to provide a policy recommendation for how central banks like the Federal Reserve can effectively utilize unconventional monetary policy to strengthen the economic recovery from the ongoing COVID-19 pandemic. As part of our analysis, we will consider the Federal Reserve's dual mandate of achieving maximum employment and stable prices, and the current threats to both of those objectives.

Inflation

The Federal Reserve primarily measures inflation using the price index of personal consumption expenditures (PCE). While PCE is the main metric for the Federal Reserve, the Fed also considers the less volatile metric of personal consumption expenditures less food and

energy, termed Core PCE. In our analysis, we consider both PCE and Core PCE to provide an accurate picture of macroeconomic trends.

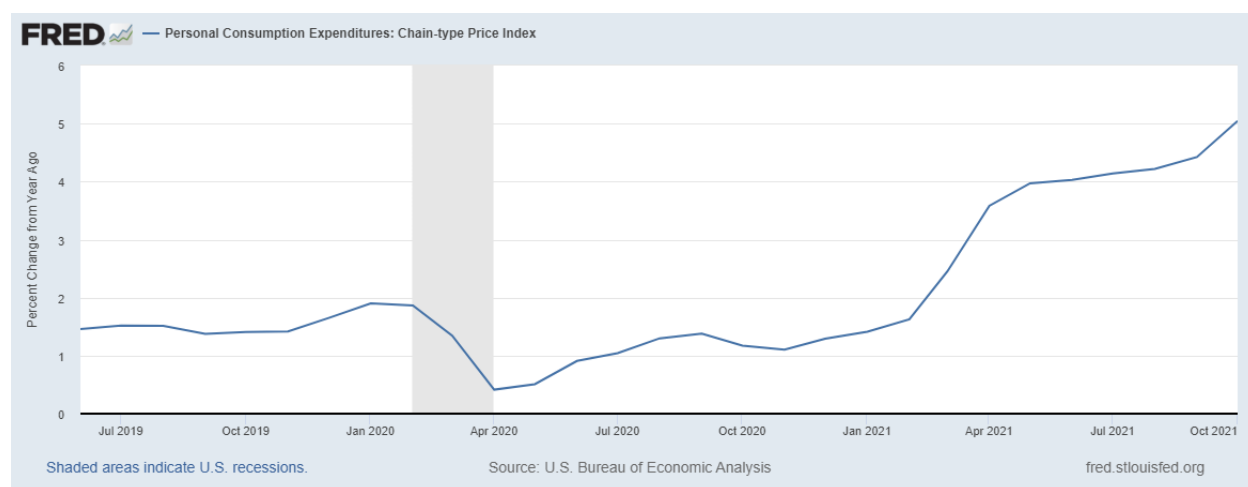
Inflation is the primary economic concern for most households and has exhibited a worrying increase over the past year. Previous Federal Reserve messaging on inflation has emphasized it as a transitory phenomenon, but our analysis indicates risks of non-volatile long-term inflation. We focused most of our analysis on the Federal Reserve's response to inflation so far and our policy recommendations moving forward for how to curb excessive inflation.

Current Economic Conditions and Trends

The gradual reopening of businesses and the resumption of travel over the past year, combined with stimulus efforts from Congress like the CARES Act and the American Rescue Plan Act, have mitigated the slowdown in consumer demand caused by the COVID-19 pandemic. Inflation has seen a drastic rise in the previous six months, exceeding 5 percent month over month in October 2021, as measured by the PCE index (Figure 1).

Figure 1

Personal Consumption Expenditures (Chain-Type Price Index)



Note. PCE Percent Change from a Year Ago, U.S. Bureau of Economic Analysis

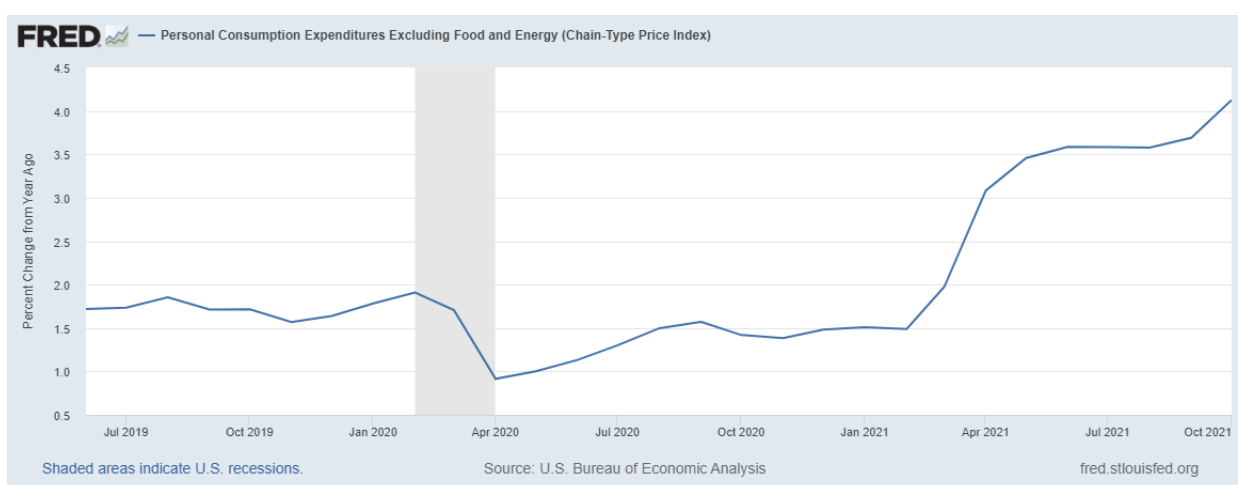
Some aspects of inflation have been driven by volatile price changes, like those in gas and new vehicles. Gas prices have increased over 50 percent from a mid-2020 average of \$2.20 per gallon to near \$3.40 per gallon in late November 2021 (Appendix A). New vehicles have experienced similar price swings, though not as severe. Average new vehicle prices rose nearly 10 percent between January 2021 and September 2021, with similar price increases in used vehicles (Appendix A). These price changes are expected to be transitory however, as consumers expect prices to fall as supply-chain bottlenecks ease. Energy prices are also expected to decline as additional refining capacity comes online in the near term.

Non-Volatile Inflation

While some components of inflation have been due to price increases as a result of temporary pandemic conditions, we found significant non-volatile increases in inflation as well. Core PCE tracks below PCE due to the removal of volatile food and energy prices, but still experienced a significant increase to 4.12 percent year-over-year in October 2021 (Figure 2).

Figure 2

Personal Consumption Expenditures Excluding Food and Energy (Chain-Type Price Index)



Note. Core PCE Percent Change from a Year Ago, U.S. Bureau of Economic Analysis

Real estate prices are also up, with the S&P/Case-Shiller national home price index at a record 19.5 percent increase year-over-year in September 2021 (Appendix B). While some part of this growth is likely due to changes in migration patterns from newly remote workers leaving cities to purchase homes in less expensive areas, it is also due in part to increases in homeownership among millennial cohorts (Mayer, 2021), an effect which is likely to persist after pandemic distortions cease. Real estate has also suffered from lackluster new housing construction that fails to meet an increasing demand for homes (Appendix B). This has been affected in part by drastic increases in the costs of building materials (Appendix B). While the price index of building materials has fallen from a high of 56.6 percent year-over-year change in June 2021, it remains outpacing broader inflation by a significant margin. We expect this to contribute to significant non-transitory inflation over the short- to medium-term.

Forecast

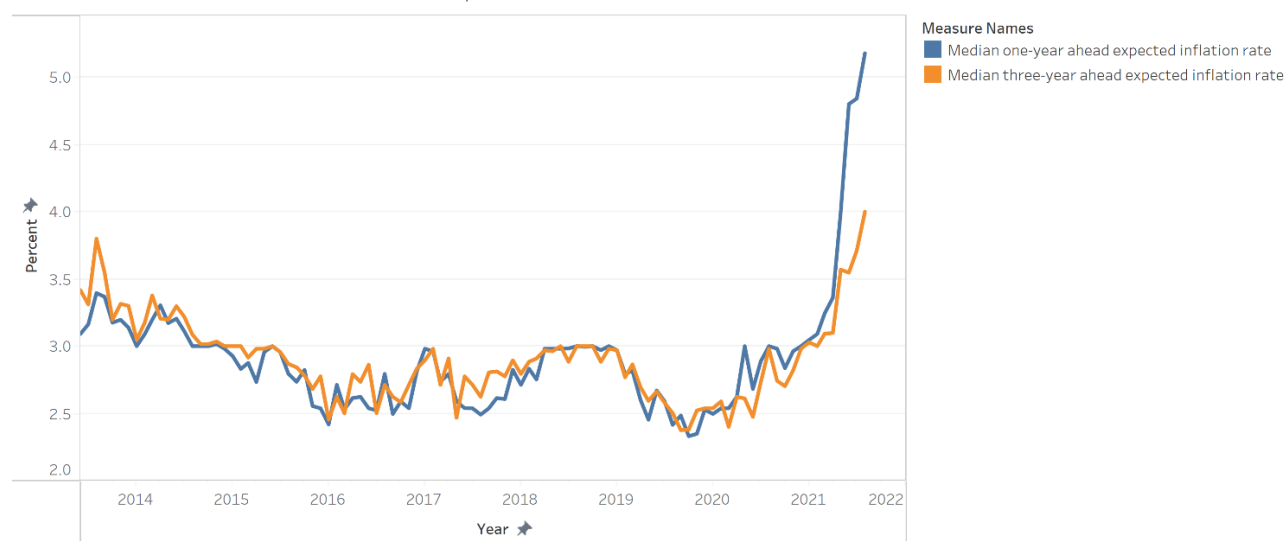
Much of inflation is currently being driven by potentially volatile areas, especially in energy and used vehicle prices. If those areas prove to be transitory like we expect, we may see the pace of inflation slow down in the coming year, but inflation will likely remain. One of the largest areas to look out for is a price/wage spiral, and one of the Fed's primary focuses should be on controlling the rate of inflation to prevent runaway inflation from becoming entrenched.

Consumer sentiment surveys from the University of Michigan (<http://www.sca.isr.umich.edu/>) and Gallup indicate that consumers are less optimistic about economic conditions than at any time in the past decade. One in four consumers cited inflationary erosions of standards of living as a significant risk, double the number who complained about falling living standards one year previously, even in the midst of pandemic

induced shortages. Consumers expect long-term inflation to return to normal levels in the next five years, though consumer anchors of “normal” levels have steadily risen as well (Figure 3).

Figure 3

Consumer Inflation Expectations



Note. Inflation Expectations, University of Michigan Surveys of Consumers

Supply Chain Issues

One of the significant risks to an economic recovery is continued supply chain issues. As just one example, semiconductors and integrated circuits are used in a wide variety of products, including practically all electronics, computers, and even newly produced vehicles and healthcare devices. Widespread semiconductor manufacturing and supply issues have contributed to supply chain issues in many of the industries that rely on semiconductors, including vehicle prices discussed previously. Some issues – like reduced manufacturing labor supply due to the effects of the COVID-19 pandemic in southeast Asia – are getting better as the pandemic recedes, but serious structural issues remain. Shortages of raw silicon metal and a lack of fabrication capacity are expected to continue into late 2022 or even 2023 (Bucaille et al., 2021), while demand for semiconductors is only expected to increase. Because new

manufacturing capacity takes years of planning and construction to come online, semiconductor supply chain issues could contribute to increasing non-volatile inflation over the next year and beyond.

Policy Recommendations

The long-term average rate of inflation is still below 2%, so the Federal Reserve has some room to slowly temper inflation without taking drastic measures to curb it immediately, causing volatility and uncertainty. Using the price index for Personal Consumption Expenditures from the Bureau of Economic Analysis, the average rate of inflation (as measured by percent change from a year previous) from Q1 2010 to Q3 2021 is 1.65 percent, materially below the long-term average target of 2 percent. Inflation remains on track to increase compared to Q3 2021, exceeding 5 percent year over year in October 2021. A gradual tempering of inflation over the next four quarters, from an approximate 6 percent in Q4 2021 to 3 percent in Q3 2022 by increments of 1 percent, would sharply move the long-term average inflation rate to 1.88 percent while bringing the short-term inflation rate closer in line with the long-term average. Specific numbers aside, we believe it is of critical importance that the Federal Reserve halt the increase in the rate of inflation by Q1 2022 and at least begin to lower the rate of short-term inflation. Doing so will help re-anchor consumer inflation expectations and avoid a dangerous inflationary spiral, especially with respect to wages.

In line with this recommendation, the Federal Reserve should continue with its current policy of tapering large-scale asset purchases through the System Open Market Account. At its November meeting, the Federal Open Market Committee announced its recommendation to reduce net asset purchases of Treasury securities by \$10 billion, down to \$70 billion for the purchase period beginning in mid-November and \$60 billion for the purchase period beginning

in mid-December, and to reduce net asset purchases of mortgage-backed securities by \$5 billion to \$35 billion and \$30 billion for the same period. At this rate, the proposed taper of asset purchases will continue until June of 2022. This time frame may not be short enough to curb the increasing rate of inflation, and continued asset purchases during those two quarters will worsen inflation. As a result, it will be very difficult to reach the target inflation goals we propose above for the next four quarters.

Instead, we propose a faster asset purchase taper of a reduction in Treasury security purchases by \$20 billion and MBS by \$10 billion starting in January 2022. This shorter timescale will extinguish net asset purchases by March 2022 and encourage the gradual reduction in inflation that we propose. Based on the lack of a significant market reaction to the announcement of the current taper, we believe that market participants were already expecting a taper of asset purchases. An acceleration of the taper runs the risk of causing market uncertainty, but we believe that the risk is substantially less for an acceleration based on current inflation expectations outlined above. Should inflation begin to decrease faster than our predictions indicate, the Federal Reserve has room to extend out the taper to the originally proposed timeframe.

Following the conclusion of the taper, the next step for the Federal Reserve to reduce inflation is an increase in the Federal Funds Rate. The Federal Reserve has indicated that the criteria for an increase in the Federal Funds Rate target are labor market conditions reaching maximum employment and inflation rising to 2 percent and on track to exceed 2 percent for some time. As outlined above, the conditions for inflation have been met, and we expect they will continue to be met in the following four quarters. We caution the Federal Reserve about its target of maximum employment as a condition for raising the Federal Funds Rate, which we will

explain in the next section. Labor market conditions notwithstanding, we propose a gradual increase in the Federal Funds Rate consistent with the median FOMC projections for the federal funds rate released at the September FOMC meeting of 0.3 percent in 2022, 1.0 percent in 2023, and 1.8% in 2024. We believe that this gradual increase will foster a gradual increase in the long-term average rate of inflation after the conclusion of the large-scale asset purchase program by maintaining short-term inflation rates at or above 2 percent until mid to late 2024.

Finally, in line with our findings on consumer inflation expectations, the Federal Reserve should continue its policy of providing forward guidance to anchor inflation expectations. A study by Swanson (2020) concludes that forward guidance is as effective at persistently influencing asset prices as changes in the federal funds rate, so proper messaging around inflation expectations is important to consider as part of the toolkit available to the Federal Reserve. We concur with Federal Reserve chairman Jerome Powell's suggestion to retire the term "transitory" to describe inflation, and to commit to providing accurate messaging around the Federal Reserve's goal of preventing higher inflation from becoming entrenched. We believe this messaging will help mitigate some of the loss of consumer confidence and "get a handle on" inflation expectations to avoid the near-term danger of runaway inflation.

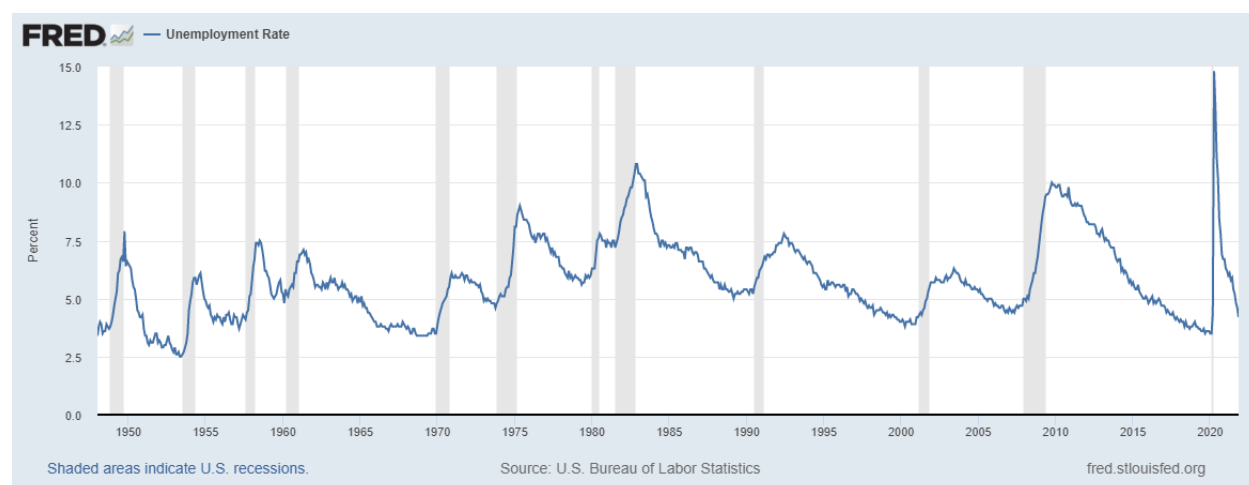
Unemployment

The COVID-19 pandemic resulted in an unemployment rate higher than at any point since the Bureau of Labor Statistics began collecting US employment data (Figure 4). Traditional macroeconomic thinking would dictate that higher inflation should reduce unemployment, as workers seek to return to the labor force or increase hours worked to offset the reduction in purchasing power of accumulated savings and the increase in household expenses. However, increased unemployment benefits and stimulus payments resulting from emergency pandemic

relief efforts have mitigated in part the decrease in consumer demand and relieved some pressure to return to work. Additionally, record levels of private saving have enabled many individuals to put off a return to the labor force, and low labor force participation combined with higher job openings has allowed workers to demand higher wages and more favorable working conditions.

Figure 4

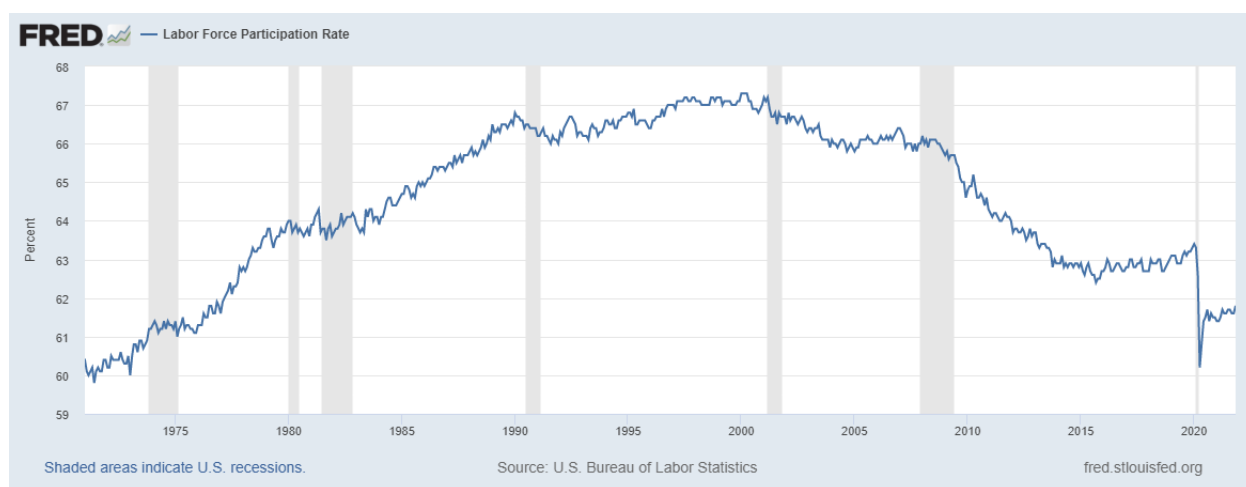
Unemployment Rate



Note. Unemployment Rate, U.S. Bureau of Labor Statistics

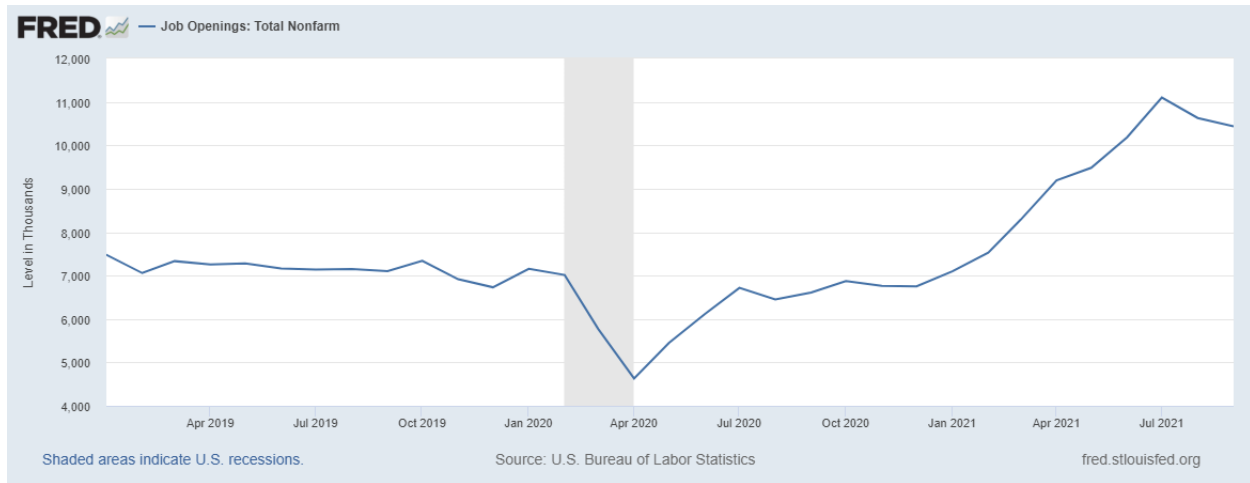
Current Economic Conditions and Trends

The overall unemployment rate has been slow to recover, only returning to 2017 levels in the last three months (Figure 4). The labor force participation rate (LFPR), however, has remained depressed at around 61.7 percent, about 1 to 1.2 percent lower than pre-pandemic levels (Figure 5). The United States has not experienced labor force participation rates lower than 62 percent since the 1970s. With a total labor force of approximately 160 million people, a 1 percent drop equates to 1.6 million people exiting the labor market. With much of the initial labor reorganization caused by the pandemic subsiding, a lower LFPR is likely the result of early retirements, a trend which is expected to continue in the near future (Marcus, 2021).

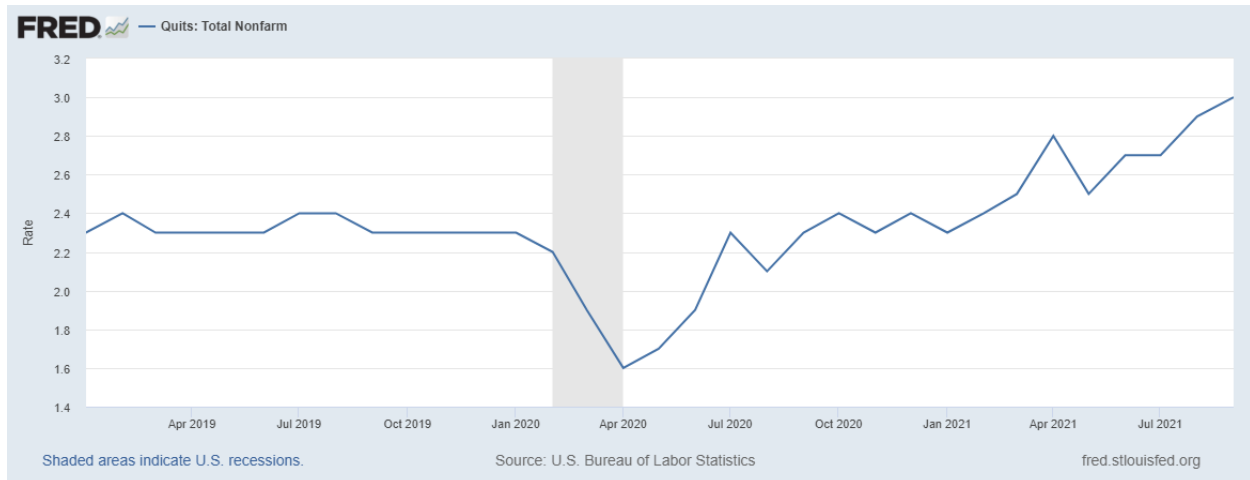
Figure 5*Labor Force Participation Rate*

Note. Labor Force Participation Rate, U.S. Bureau of Labor Statistics

At the same time as labor force participation has been dropping, total job openings have been climbing, reaching an all-time peak in July 2021 and only slightly subsiding in the following months (Figure 6). The quits rate, which is the number of voluntary job separations, continues to rise to decade highs, reaching 3 percent in September 2021 (Figure 7). This indicates strong labor market conditions for many workers, but may be influenced by rising inflation, with some workers “job hopping” to keep their real wages from falling due to inflation. Besides inflation, record low labor force participation and record higher job openings are also likely contributors to the record quits rate.

Figure 6*Total Job Openings*

Note. Total Nonfarm Job Openings, U.S. Bureau of Labor Statistics

Figure 7*Quits Rate*

Note. Quits: Total Nonfarm, U.S. Bureau of Labor Statistics

Mismatch Theory

The benefits of a tight labor market have not been accruing to all workers, however. We examined three supersectors of the labor market – Trade and Transportation, Leisure and

Hospitality, and Financial Activities – and the largest industry in each – Retail Trade, Accommodation and Food Services, and Finance and Insurance, respectively – to compare the effects of the recovery in the labor market across expected skill levels. Unemployment remains high across the Leisure and Hospitality supersector, with Trade and Transportation also experiencing a substantially higher unemployment rate than before the pandemic (Appendix C). These effects are despite higher job openings and hires rates in the major industries (Appendix C). Quits rates have also increased in both major industries, above their normally elevated turnover compared to the rest of the labor market (Appendix C). These rates are all indicators of a major mismatch in the labor market of these large industries, with employers unable to find enough candidates to hire and many workers simultaneously unable to find jobs that fit their qualifications and preferences.

At the same time, the Financial Activities sector, which we used as a representative of high-skill occupations, was relatively unaffected by the COVID-19 pandemic, and continues to look, in terms of unemployment, hires, and quits rates, exactly like it did before the pandemic (Appendix C). It is likely that high-skill occupations like finance, accounting, and insurance had an easier transition to remote work, and many of those positions remain remote as other businesses gradually return to in-person environments. Workers in high-skill industries who did lose their jobs as a result of the pandemic were likely more able to find replacement work than those employed in the Retail Trade and Food Service industries, because of the prevalence of remote work.

Ultimately, what our analysis shows is a mismatch in worker skills and preferences among large parts of the economy that were unable to easily adapt to remote work, while other industries that did adapt remain relatively unchanged.

Forecast

As our mismatch theory above outlines, one of the major trends in employment is a divergence between high-skill and low-skill occupations. Much of our forecast for future economic conditions depends on the course of the pandemic. If the pandemic continues to wane and business returns wholly or largely to in-person experiences, we expect that unemployment in the Trade and Transportation and Leisure and Hospitality supersectors will decline at similar rates towards pre-pandemic levels as those businesses return to full employment. However, if the pandemic continues for an extended duration, or fears over new conditions like the Omicron variant spark a new wave of lockdowns, we expect the difference in outcomes to become even worse. Poor and old households are much more likely to have been impacted by unemployment due to the coronavirus pandemic, and the most likely to still be unemployed months later (Terrell, 2021). If the pandemic response becomes more severe, we expect this effect to strengthen.

One of the prime risks to labor recovery that we identified was the potential for inflationary wage spirals if inflation continues to rise unchecked. With quits rates and job openings already at record levels, we see the potential for workers to achieve real wage growth by switching jobs – a fact of employment that may become necessary just to maintain real wages if inflation proceeds above 5 percent. Beyond labor market conditions, inflation primarily impacts poor and old households, and one study found that a 3 percentage point increase in inflation resulted in a decrease of 13 percent of one-year consumption, primarily among households (Cao et al., 2021).

Long-term Labor Force Changes

On a longer timeframe, we expect labor force participation will also likely remain low into the future. We expect accelerated early retirement to be a trend that continues for some time, although we somewhat counter this with the potential increase in labor force participation that a permanent shift to a remote-friendly work environment could bring. After more than a year of remote work, we expect that many workers would like to retain some of the benefits on a permanent basis.

Policy Recommendations

Our policy recommendations for the Federal Reserve are somewhat limited by the complex state of the labor market as we have identified it. Somewhat by design, the Federal Reserve is limited in how specific its target can be, and this presents a problem when trying to solve a mismatch only in some parts of the labor market.

Our primary recommendation is to focus on curbing inflation and maintaining stable prices across the economy to prevent the disastrous effects of a wage spiral. In line with this goal, we also strengthen our recommendation previously of providing accurate forward guidance to help businesses and employees anchor their inflation expectations. We caution the Federal Reserve on maintaining its expansionary monetary policy in an effort to stimulate employment. A study by Coibion et al. (2020) found that higher inflation expectations led firms to raise their prices and reduce employment, which undermines the intended effects of expansionary monetary policy. Additionally, a study by Morlacco and Zeke (2021) examined Compustat data to determine that lower interest rates had the unintended consequence of increasing large firms' market power at the expense of smaller firms through non-traditional investment in marketing

and customer acquisition. Much of the mismatch in the labor market impacts small firms, which have traditionally had more difficulty hiring.

Finally, if labor market mismatch continues, we suggest that the Federal Reserve could investigate a resumption of the Main Street Lending Program that concluded in January 2021. The program provided support to small and medium-sized businesses that were in sound financial condition before the onset of the COVID-19 pandemic. If labor market conditions continue to worsen in the industries we outlined above, a Main Street Lending Program could provide a way for the Federal Reserve to reach that specific sector of the economy. However, this approach is not without drawbacks, an examination of which we have not fully made, so we refrain from a full recommendation.

Conclusion

The unprecedented conditions of the coronavirus pandemic have led to extraordinary economic circumstances. The correct policy tools to navigate these circumstances are still under consideration. The dual specters of high inflation and high unemployment threaten to undermine recovery efforts and continue to drive a wedge between socioeconomic groups. Our policy recommendation for the Federal Reserve hinges on controlling inflation by an aggressive taper of net asset purchases, followed by a swift increase in the Federal Funds Rate, combined with strong forward guidance to anchor inflation expectations and allow for a gradual return to long-term optimal economic targets.

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Appendix A

Volatile Sources of Inflation

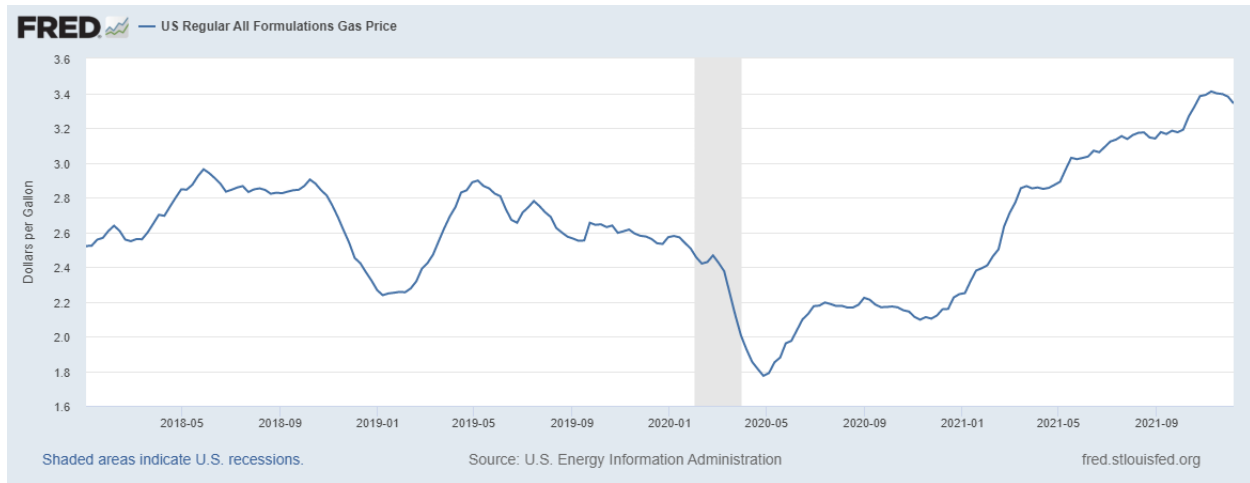


Figure A1. U.S. Regular All Formation Gas Prices, U.S. Energy Information Administration

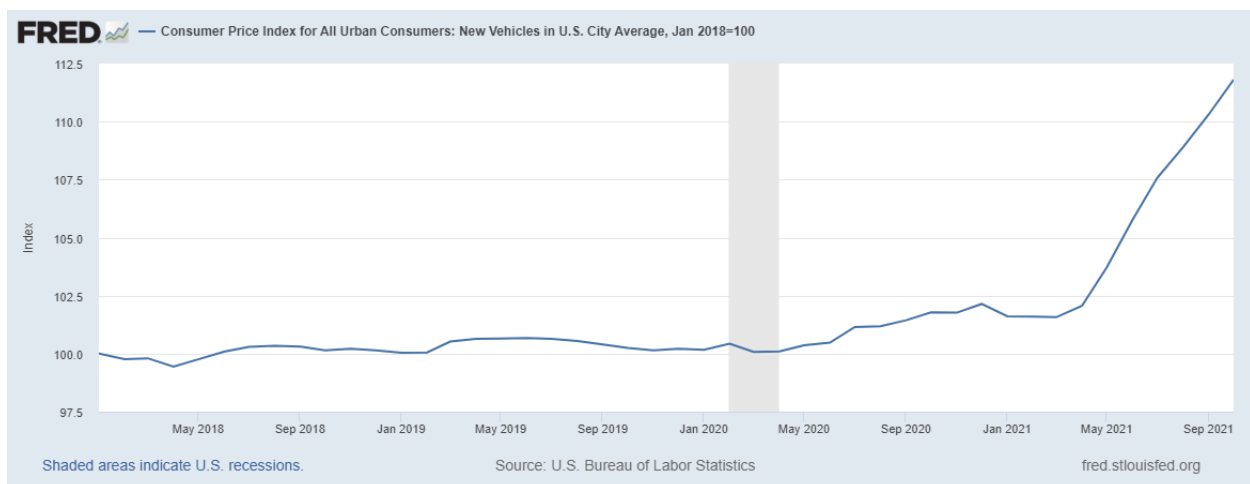


Figure A2. Consumer Price Index for All Urban Consumers: New Vehicles in U.S. City Average, U.S. Bureau of Labor Statistics

Appendix B

Housing Market Sources of Inflation



Figure B1. S&P/Case-Shiller U.S. National Home Price Index

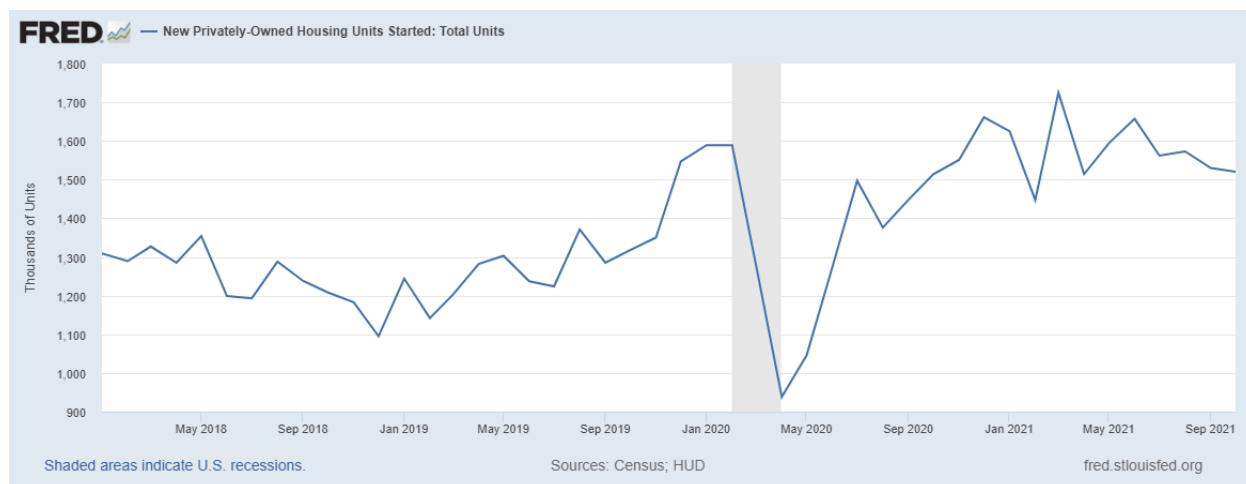


Figure B2. New Privately-Owned Housing Units Started: Total Units, Housing and Urban Development

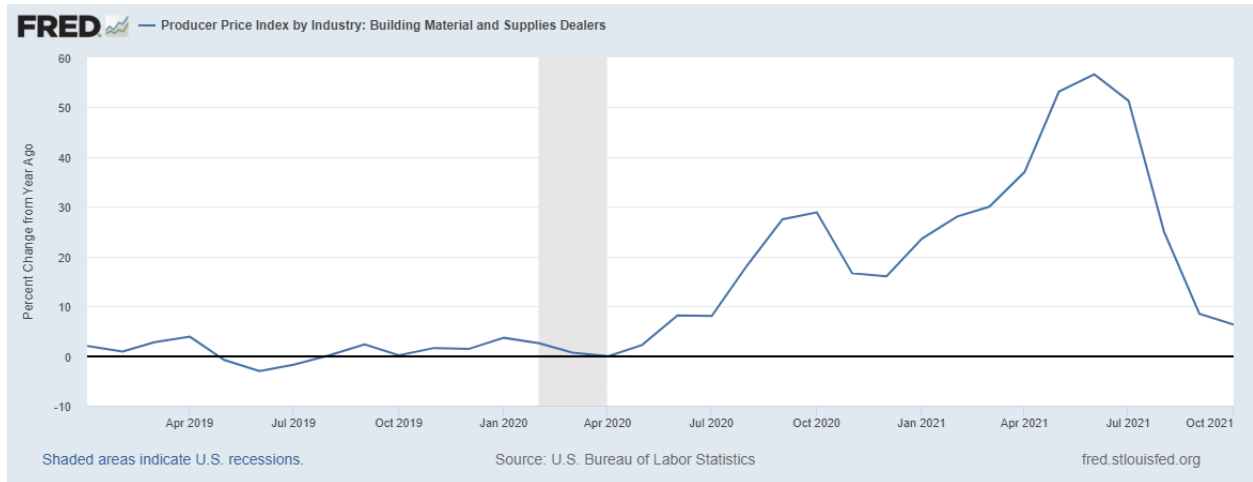


Figure B3. Producer Price Index by Industry: Building material and Supplies Dealers, U.S.

Bureau of Labor Statistics

Appendix C

Labor Market Data By Supersector and Industry

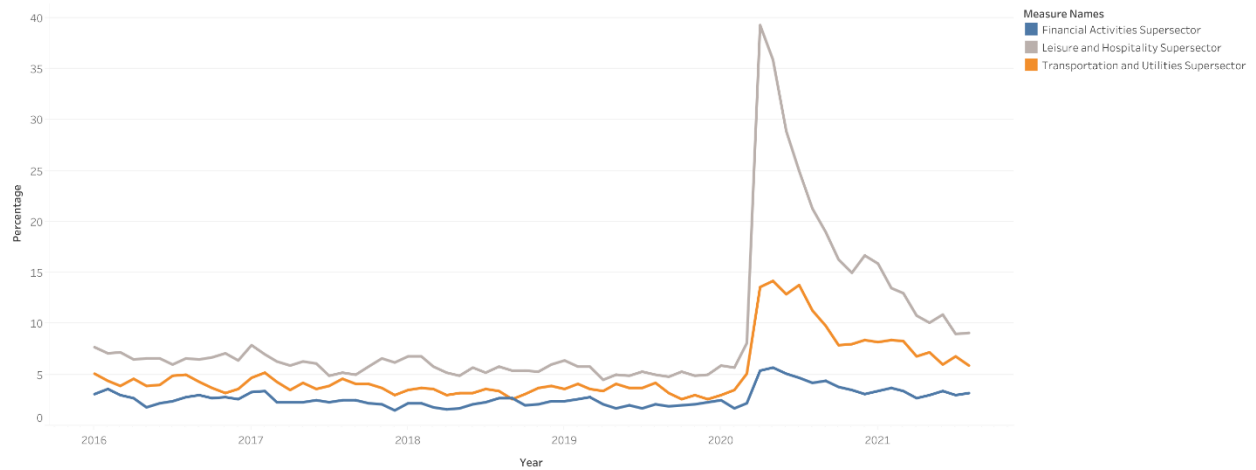


Figure C1. Unemployment Rate by Supersector, U.S. Bureau of Labor Statistics Employment Situation



Figure C2. Job Openings by Sector, U.S. Bureau of Labor Statistics Job Openings and Labor Turnover Survey

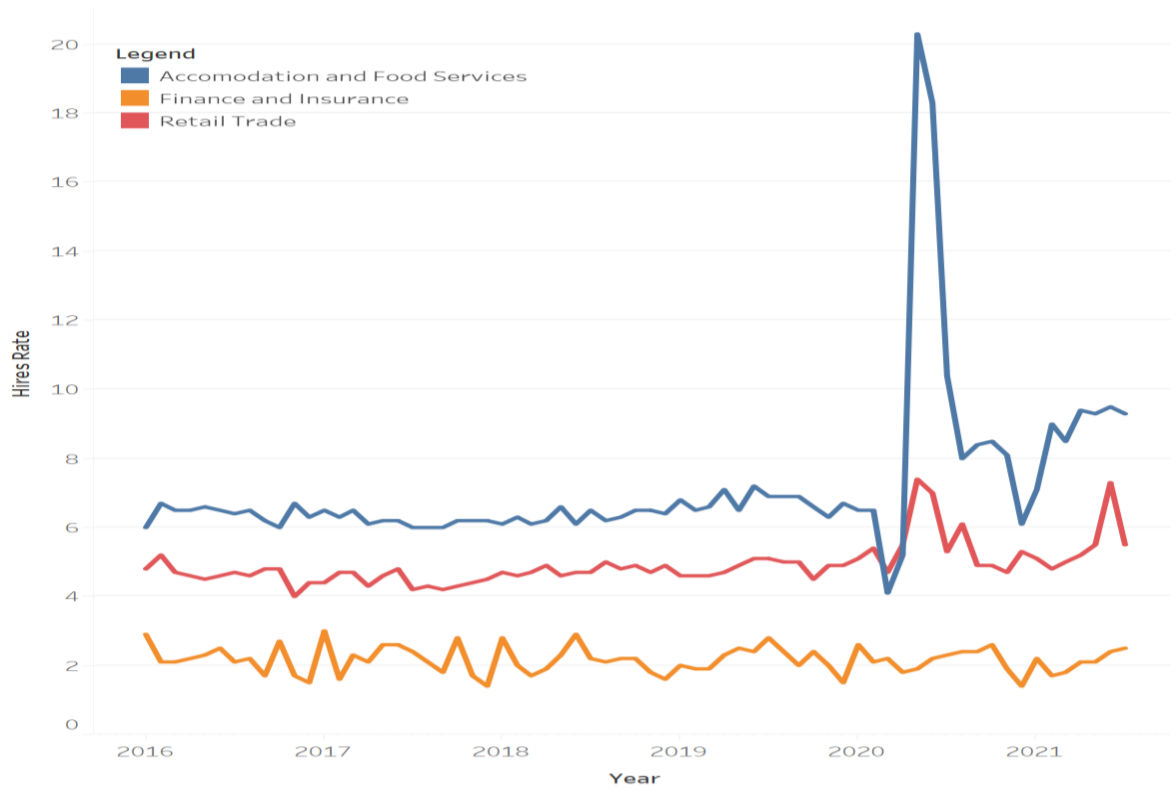


Figure C3. Hires Rate by Sectors, U.S. Bureau of Labor Statistics Job Openings and Labor Turnover Survey

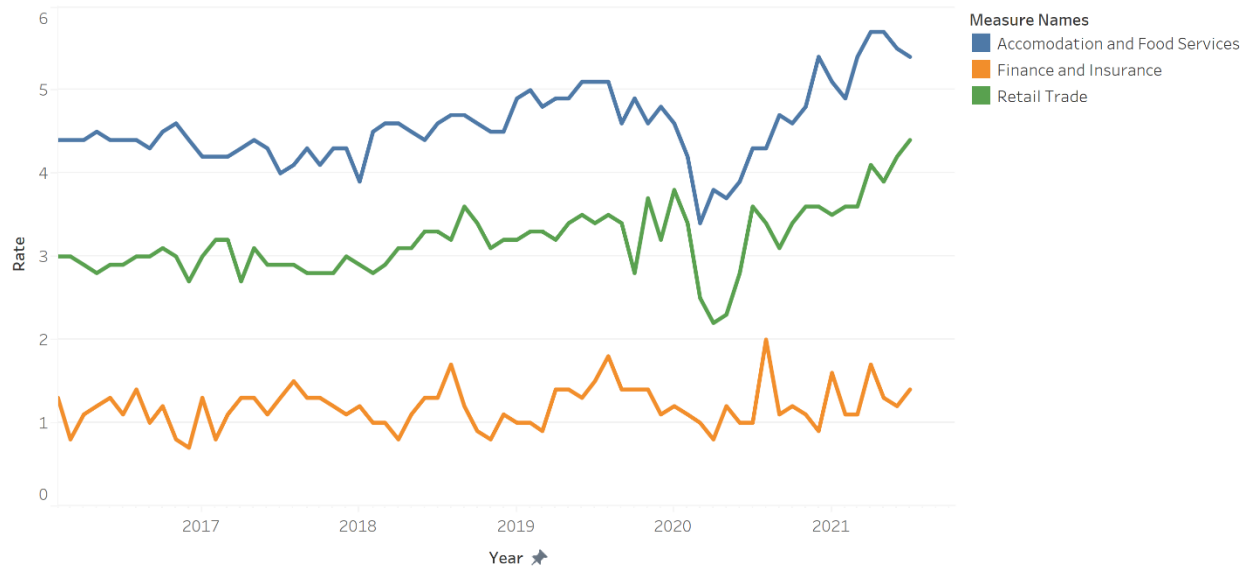


Figure C4. Quits Rate by Sectors, U.S. Bureau of Labor Statistics Job Openings and Labor Turnover Survey