

Inflation: The History and Outlook

JUNE 2021

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KEY POINTS

1970's-style inflation highly unlikely to return

Expect short-term inflation pressures to remain through year-end

Watchful on trends in wages

We believe that in the long-term, inflation will be benign

Executive Summary

With the economic recovery squarely in place, a great question remains unanswered: Is inflation going to be a problem in the future? There is a good reason for that thinking. There has been unprecedented fiscal spending from the federal government and extreme monetary stimulus from the Federal Reserve. All of that has provided the relief and stimulus that was needed to get the economy back on track. Given the recent increase in inflation, it begs the question, was it too much?

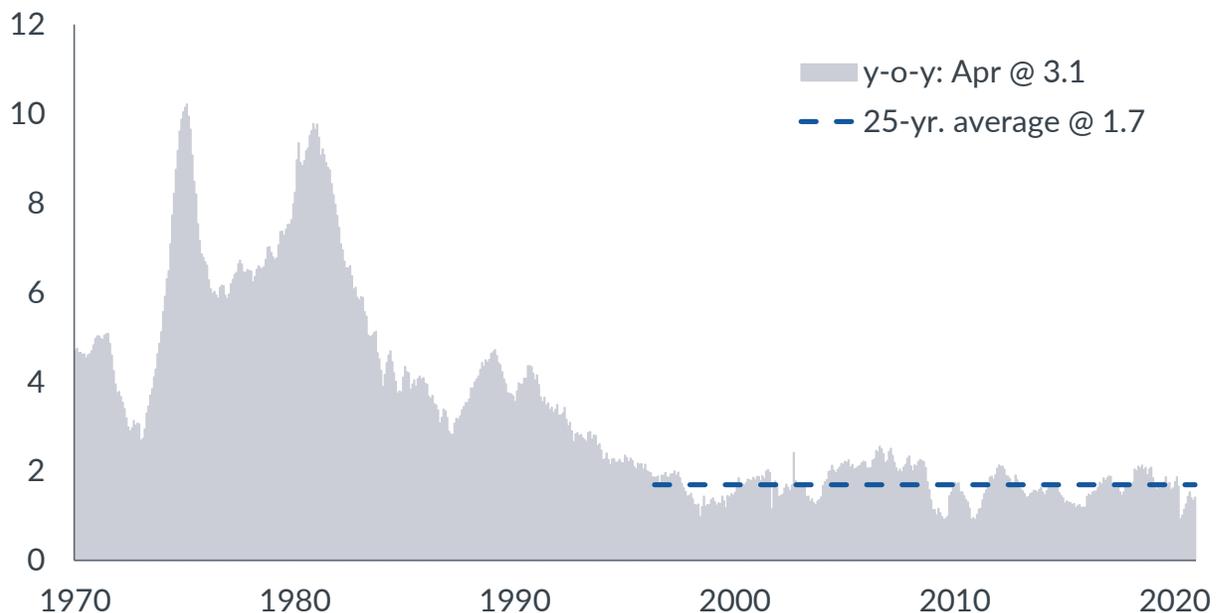
There is another side of the coin: Inflation has been tame for the past 25 years, averaging just 1.7% (exhibit 1). Have the recent changes to the environment been enough to reverse many of the significant global macro business, economic and demographic trends that have kept inflation low?

We do not believe that inflation will get out of control. The higher levels of inflation that are currently occurring appear to be one-time events brought on by pressures from too much demand meeting too little supply. This supply/demand imbalance over time will come back into equilibrium.

EXHIBIT 1

Inflation

%, Core Personal Consumption Expenditure Price Index



Source: Bureau of Economic Analysis as of April 2021.

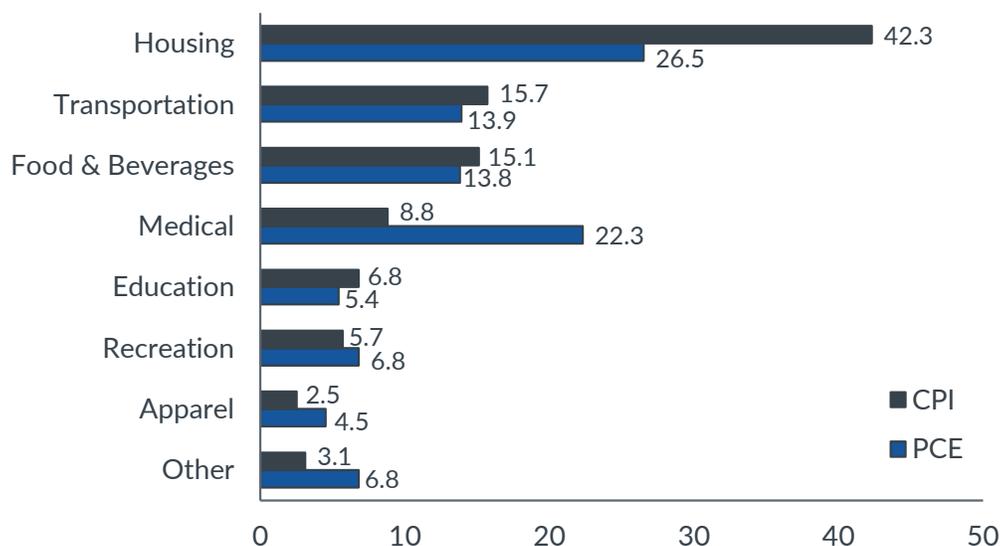
Measurements of Inflation

The federal government has been monitoring price movements for more than a century with the Consumer Price Index (CPI), produced by the Department of Labor Statistics. It is probably the best-known inflation monitor by most Americans since it calculates annual changes to Social Security and determines the adjustment on Treasury Inflation-Protected Securities (TIPS). But since 2000 the Fed's preferred reading of inflation has been the personal consumption expenditure (PCE) price index. It is produced by the Bureau of Economic Analysis, the same group that calculates Gross Domestic Product (GDP). PCE is a more comprehensive coverage of goods and services. For this article, we will focus on Core PCE, which removes the food and energy components. Food and energy prices tend to be volatile in their price movement, and their short-term movements can give a misleading view of the long-term trends in inflation. Furthermore, food and energy prices tend to be self-correcting. What's more, monetary policy has minimal impact on these prices. Weather conditions generally drive food costs, and geopolitical issues often drive energy prices.

The Difference Between CPI and PCE

Although CPI and PCE both measure inflation, there are some differences between the two, most notably in the weighting of the components (exhibit 2). CPI weighting is based upon a survey of consumer expenditures, conducted by the BLS and the Census Bureau. The PCE weighting is based upon business surveys from sources like the Census Bureau. Furthermore, CPI measures out-of-pocket expenditures for households while PCE measures the change in goods and services consumed by households. A clear example of how that differs is with medical care. CPI measures only out-of-pocket expenses for consumers, whereas PCE measures those expenses and the cost of medical care services paid for by employer-provided health insurance. As a result, medical care has a greater weighting for PCE than CPI. This difference in measurement carries out in all the different categories. There are also differences in statistical methodologies. Unlike CPI, PCE allows for consumer substitution (for example, if steak is expensive, they may purchase chicken instead).

EXHIBIT 2
Sector Weightings (%)



Source: Bureau of Labor Statistics, Bureau of Economic Analysis as of March 2021.

The High Inflation of the 1970s Is Unlikely to Return

There is no clear understanding of a single issue that caused the high level of inflation in the 1970s. Instead, it was a confluence of issues coming together that caused higher inflation. In the 1970s, inflation averaged 5.9%, well ahead of the 1960s average of 2.3%. Several events can be connected to the rise, starting with the Johnson administration's "guns and butter" approach (spending on the Vietnam War and his Great Society programs), which caused the federal deficit to escalate, adding a significant amount of stimulus into the system. When Richard Nixon became president, he enacted price freezes to help curtail the growing inflationary threat. That tactic backfired. As soon as the freeze was lifted, producers and retailers increased prices significantly in fear of another freeze being put in place. That was quickly followed by the collapse of the Bretton Woods system of fixed exchange rates on August 15, 1971. President Nixon unilaterally terminated the convertibility of the U.S. dollar to gold. Easy monetary policies of the Fed followed that. Fed chairman Arthur Burns, often criticized for succumbing to political pressure in his monetary policy management, kept interest rates low to help keep the unemployment rate down in order to increase the president's reelection chances. Then the 1973 oil embargo caused petroleum prices to skyrocket. In the four months ending in February 1974, oil prices quadrupled to \$12 a barrel. Back then, energy costs were a more significant portion of the household budget than they are today. The impact on household spending habits was devastating. More money had to be allocated to heating a home and to transportation, which left little for disposable spending, causing a severe recession that created the term "stagflation," meaning stagnant economic growth and high inflation. A recession started in November 1973 and ended in March 1975.

Other ongoing issues that were ingrained in the economy kept pricing pressures high. Back then, trade unions were a more significant force in the workplace, and many unions had cost-of-living adjustments (COLAs) built into their contracts. When inflation went up, so did their compensation, which continued to feed higher inflation since workers had the greater income to pay the higher prices. The unions also made for less competitive work and product markets. At the time, there was far less importing of goods and very little offshoring of some or all of the work required for production – reducing price competition. And until Paul Volker stepped in as chairman of the Fed in August 1979, central bankers didn't know they could fight inflation effectively.

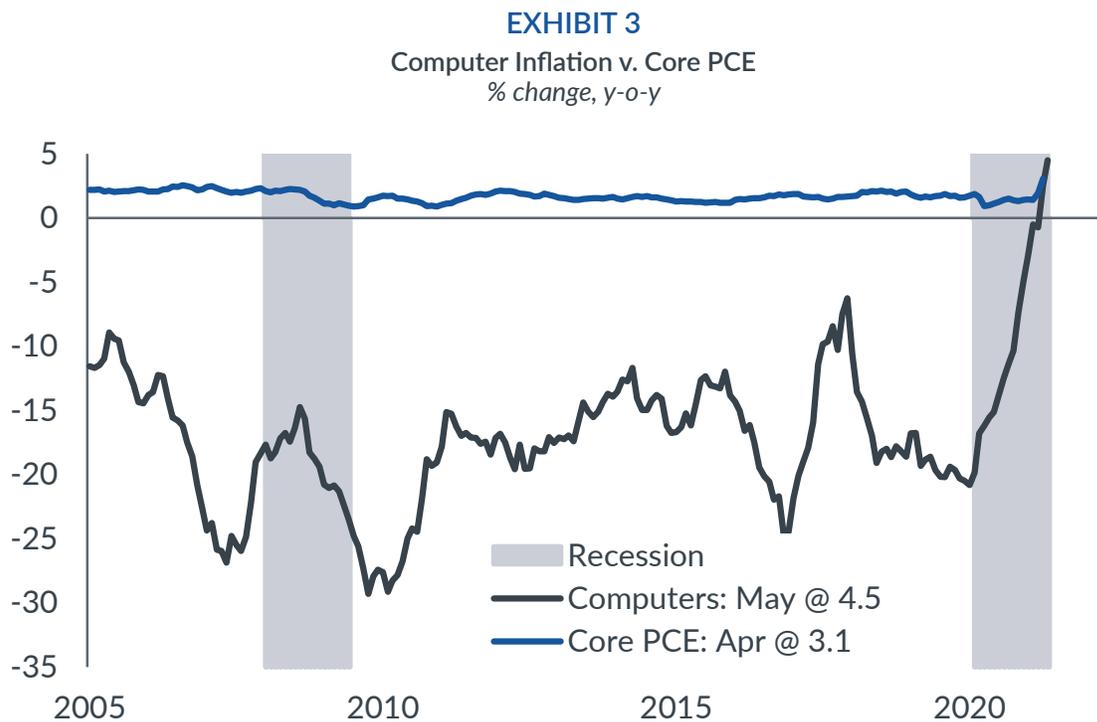
Most of the events that caused higher inflation back then are not with us today, making it difficult for inflation to get out of hand.

Hedonic Adjustment — Keeping Inflationary Pressures Lower

Often there are significant changes to the quality of a good or service, or sometimes the good or service is replaced with something new (old picture tube televisions versus today's flat-screen TVs, for example). To accurately measure the price change, there needs to be a method of distinguishing the portion of the price change that is due to quality improvement. This is called a hedonic quality adjustment. If you are curious about the name, the word "hedonic" is derived from Greek origins meaning "of or related to pleasure." For economists, pleasure and utility are the same thing. If you can get more utility out of an item, you are getting more pleasure.

All items are subject to hedonic pricing. A simple example of how hedonic adjustments have kept inflationary readings low can be found in the pricing of computers. The quality of computers has improved over the years (faster processors, better-quality screens, more memory, etc.). Although the price of a computer may not have changed much, with those improvements, the hedonic quality adjustments will show a decline in the price of the computer (exhibit 3). That calculated decline helps bring down overall inflation.

Since 2005, the change in the way computer prices are calculated has shown to have prices falling for a vast majority of the time. It is just during the past recession that prices have moved back into the positive territory, which is probably due to the massive demand for work at home and school at home.



2.0% Inflation Target

Since 2012, the Fed has been targeting inflation at 2.0%. From 2012 until last summer, when price pressures rose toward the Fed's target, they would begin to tighten monetary policy to stave off the rising inflation. The result was that inflation rarely got above 2.0% and averaged just 1.6%, well below their target. With this hawkish inflationary approach, economic output was curtailed, which prevented unemployment from declining further. After spending time studying this tactic, last summer the Fed announced a shift in policy. After years of inflation below target, they will now allow inflation to move above 2.0% without tightening monetary policy. Their goal is to have an inflation average of 2.0% over time.

Commodity Prices — The Impact on Inflation Is Small

As an economy emerges from a recession, commodity prices tend to have a strong rally as demand suddenly picks up. So naturally, this tends to make some people fear the return of inflation. But what is going on is a classic example of the bullwhip effect. The term comes from physics involving the cracking of a whip. A small flick of the wrist will cause the whip's wave pattern to amplify in a chain reaction, resulting in devastating effects.

This plays out with the retailer's response to the sudden pickup in demand. As the retailer's inventories decline from the unexpected demand, they contact wholesalers to replenish. The retailers, who are fearful of only getting partial delivery of their order, over-order for more supplies. Wholesalers and manufacturers, fearing the same thing, also over-order supplies. As a result, raw material producers see skyrocketing demand, which puts higher pressure on commodity prices.

During the beginning of this recession, inventories at many retailers were drawn down to conserve cash. As the economy opened up last summer, consumers went and shopped (many of them armed with \$1,200 government stimulus). They spent a large share on goods, since many services were not available to them. The demand for goods was extraordinarily large, and it outpaced supplies, causing inventories to plummet (exhibit 4). Supplies couldn't be generated fast enough since social distancing requirements allowed fewer workers in factories and thus less output, and many ports were restricting imports due to social distancing requirements.

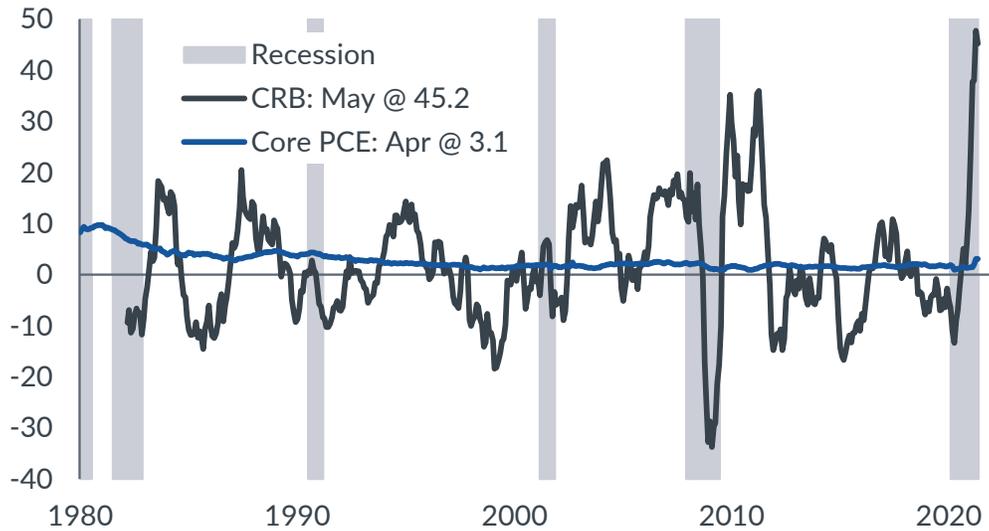


Source: U.S. Census Bureau as of March 2021.

Further complicating the management of retail inventories is the change in the management of factories over the past few decades. Manufacturers have made factories smaller, cheaper and more profitable by outsourcing some operations and whittling inventories; this has allowed them to cut costs and boost profits. But now we are beginning to realize the supply chain that feeds this just-in-time inventory management is not as strong as previously believed. This is especially true for those who rely on foreign suppliers (such as auto manufacturers who import semiconductor chips).

All of this feeds into the demand and the eventual reversal of that demand of commodities. As a result, the movement of commodity prices has been like a Disneyland E ticket ride of yesteryear. In the past 40 years or so, the highest annual increase has been 45%, and the lowest was -34%. But the average was just 1.8%, slightly below the average Core PCE of 2.4% for the same period of time (exhibit 5).

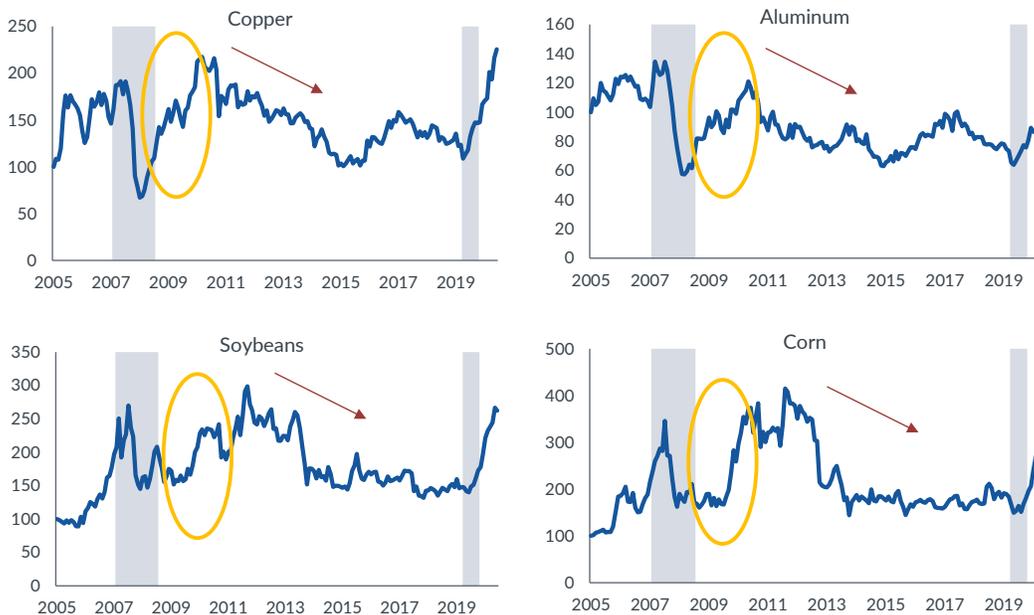
EXHIBIT 5
CRB & Core PCE
% change, y-o-y



Source: Commodity Research Bureau, Bureau of Economic Analysis as of May 2021.

The rally in many household industrial and food commodity prices has been the driving force behind price appreciation in the Commodity Research Bureau (CRB). This is a common occurrence following economic recessions. The decline in those prices is also a common occurrence (exhibit 6).

EXHIBIT 6
Commodity Prices Reflecting Early-Stage Expansion



Source: Bloomberg.

This metric surveys the American public on their inflation expectation, and it tends to follow coincident price increases.

Inflation Expectations

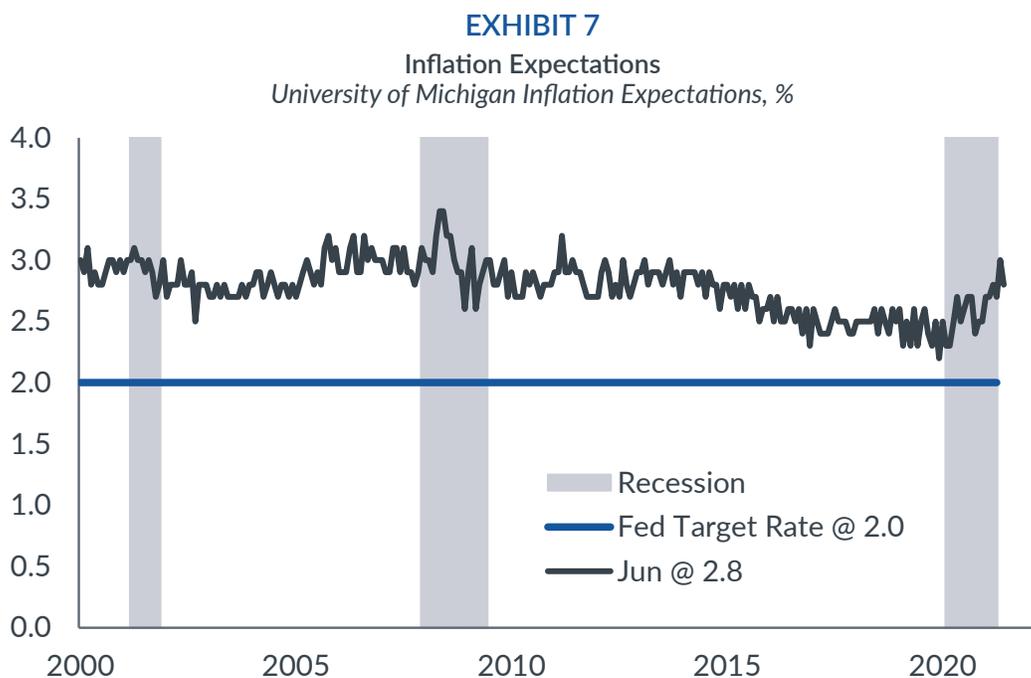
Inflationary expectations are an essential tool in trying to forecast future trends in inflation. More importantly, Nobel laureates Edmund Phelps and Milton Friedman pointed out inflation expectations as a key to the relationship that binds inflation to unemployment. For example, when inflation expectations are high, workers demand wage increases to offset the expected loss in purchasing power. Once the higher wages are received, businesses tend to raise prices to offset the higher cost, which leads to even higher inflation. This is referred to as the wage-price spiral.

There are many ways to track inflation expectations. Often it is done with surveys of business owners, consumers and economists. The most famous is the University of Michigan's survey (exhibit 7). This metric surveys the American public on their inflation expectation, it tends to follow coincident price increases.

The Fed's favorite measurement is the 5-year, 5-Year Forward Inflation Expectation Rate: the expected average inflation rate over the five-year period that begins five years from now. This metric pays attention to longer-term inflationary trends, which is what the Fed is most concerned about (exhibit 8).

In both cases, the inflation expectations are pointing toward higher inflation in the next few months.

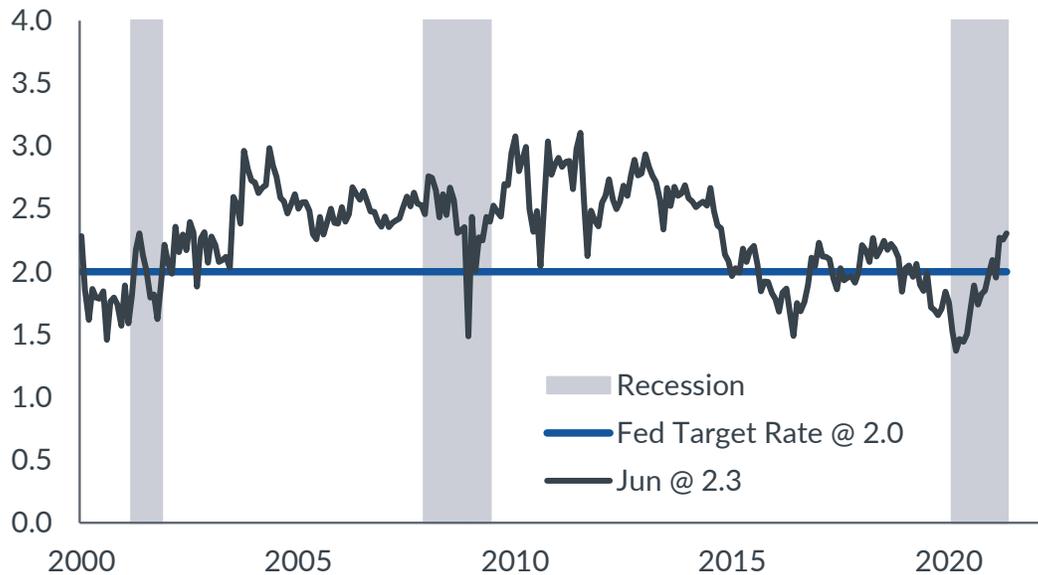
None of these are perfect, and they focus on acute sections of opinions and the market. Modern economic theory tells us that inflation expectations is an important determinant of realized inflation. Households and businesses are constantly assessing possible price pressures. This is an important area of study that the Fed takes very seriously.



Source: University of Michigan as of June 2021.

EXHIBIT 8

Inflation Expectations
5-year/5-year forward breakeven, %



Source: Bloomberg as of June 2021.

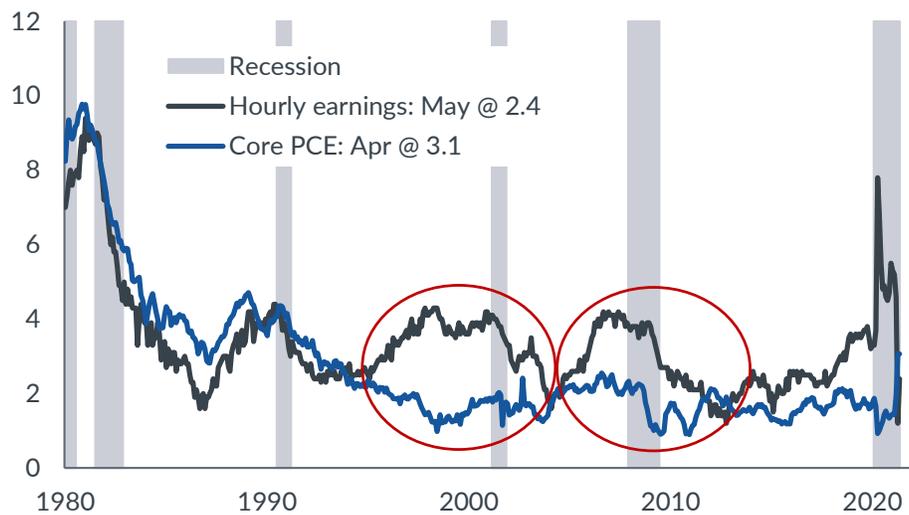
Wages and Inflation — The Fed’s Response

The wage-price spiral is a theory used to describe the cause and effect relationship between rising wages and increasing inflation. Managing the inflation risk is the top priority for the Fed, so they established the targeting of inflation to help guide businesses, individuals and investors in what is an acceptable level of inflation. This way, everyone knows the “rules of the road.” If inflationary pressure moves up, expect the Fed to react with tightening monetary policy, and vice versa. This open-book strategy has helped keep down the uncertainty and volatility of the financial markets and the economy.

It is important to monitor the wage gains in anticipation of cost-push inflation. Wage gains, like increases in material costs, can get pushed on to the customer in the form of higher prices. Cost-push inflation has been in the news of late. The belief is that many businesses, especially in the hospitality sector, have been forced to pay higher wages to attract employees, and that will lead to higher inflation. Although labor tends to be one of the largest costs for businesses, it is not the only one. Back in the 1990s and early 2000s, wage growth accelerated but inflation stayed low (exhibit 9). The primary reason for that was increased productivity. Computers in business became mainstream and businesses learned how produce more while paying higher wages. We think it is pretty easy to assume, with the faster processing power of computers and more sophisticated software, the same will happen again.

We are watching this closely, as we believe current labor shortages will lead to continued wage increases.

EXHIBIT 9
Wages and Inflation
 % change, y-o-y, average hourly earnings and Core PCE



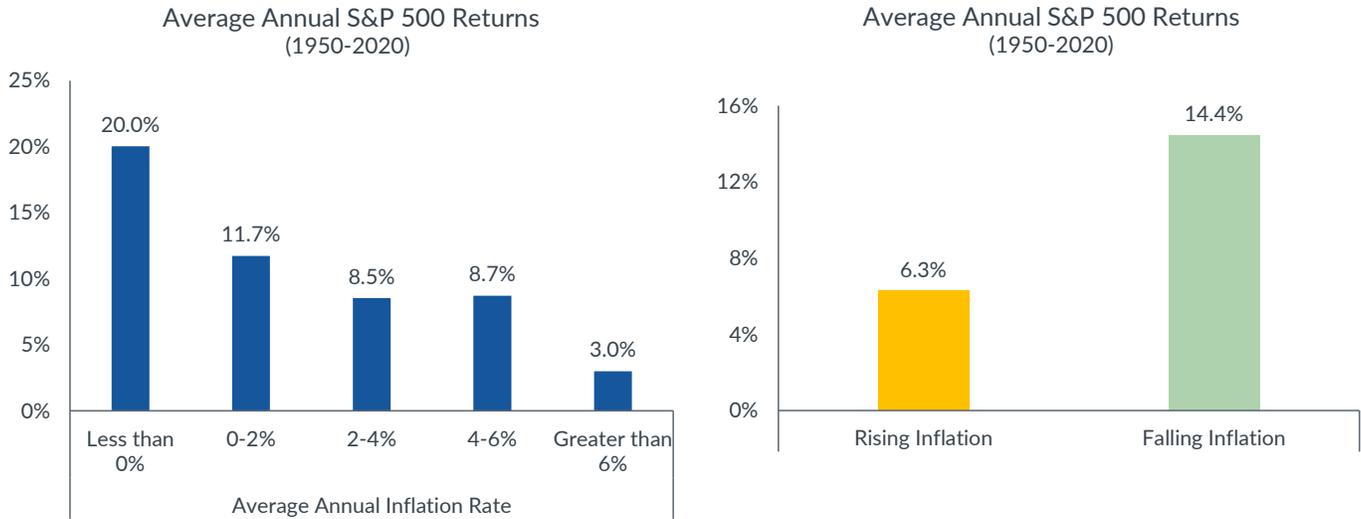
Source: Bureau of Labor Statistics, Bureau of Economic Analysis as of May 2021.

Inflation and Stock Prices

Rising inflation should not be disregarded as a risk for investors. It can erode the value of real investment returns, and too much can spell trouble for equities if it results in tightening monetary policy, higher interest rates and slower economic growth. Yet stocks have also prospered in inflationary environments. The relationship between inflation and equity prices is complex, and no universal rule can be applied. Still, there are several essential links between the two that investors should take into consideration before making investment decisions.

Over the long term, stocks have proven to be an excellent hedge against inflation, producing the highest inflation-adjusted return of any major asset class. That's because companies have the ability to pass on higher costs to customers and preserve profits. Since 1950, the average annual inflation has been 3.5%, while the S&P 500 has returned more than 9.0%. In the short run, though, the relationship is more complicated. Stocks do best when inflation is falling, but they also generally do well in periods of rising inflation. However, as inflation increases performance begins to falter, with real average returns turning negative when it exceeds 6.0% (exhibit 10).

EXHIBIT 10



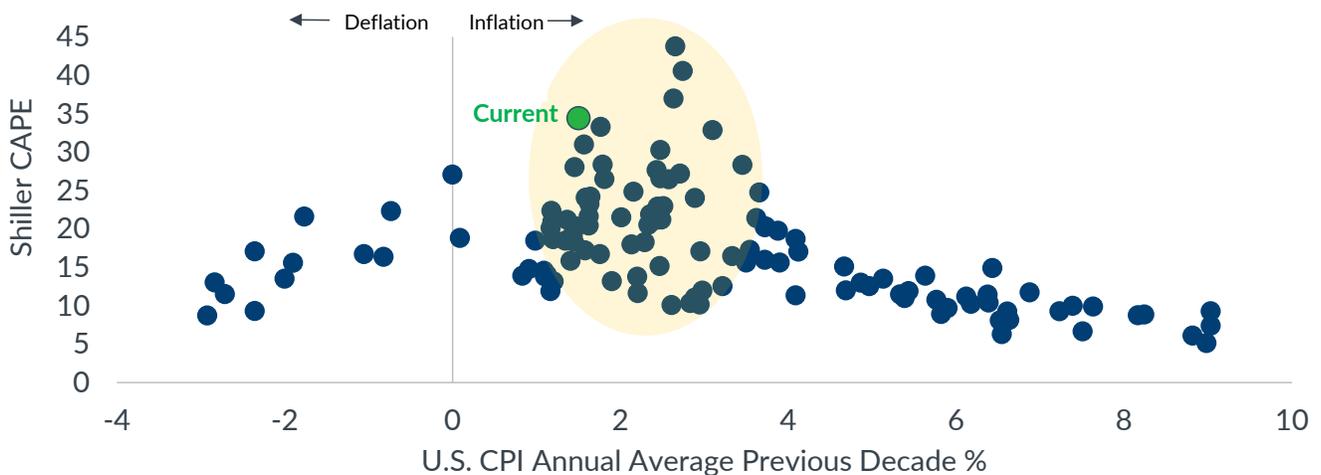
Source: FactSet, St. Louis Fed.

Ultimately the economic backdrop is what matters most when assessing the impact of inflation on stocks. As one would expect, stocks react much more negatively to inflation when the economy is contracting and corporate revenues are declining, even without inflationary concerns. Unexpected inflation can also be a problem, particularly if it leads to higher interest rates, as it often does. Stocks have posted lower returns when inflation has increased rapidly, and inflation scares have led to economic downturns and bear markets. The S&P 500, for example, fell 27% in the early 1980s when inflation jumped above 10%, causing the Fed to raise rates and pushing the economy into recession.

On the other hand, equity markets have done very well in environments like today, when inflation is emerging from low levels. In fact, a bit of inflation greases the wheels of commerce and tends to be associated with a healthy economy and growing corporate earnings as businesses are able to raise prices on consumers without reducing demand. With that in mind, it should come as no surprise that Shiller’s cyclically adjusted price earnings ratio for the S&P 500 has tended to be highest when inflation has been modest and positive (exhibit 11).

EXHIBIT 11

Shiller’s CAPE & US CPI Inflation (1900-2021)



Source: FactSet, St. Louis Fed.

Going forward, the question for investors is not whether inflation pressures will increase, but how much of the pickup will be persistent and how much will be transitory. We suspect it will be more of the latter. Inflation is currently gaining momentum due to “base effects” from pandemic-depressed prices last year, as well as temporary supply/demand imbalances from the reopening of economic activity that will likely take some time to work out. Importantly, the Fed seems to share this view and officials appear to be in no hurry to unwind its historic market support by either curbing its bond-buying program or raising rates.

From this perspective, current market jitters regarding inflation look overblown to us and are unlikely to be a long-term headwind for stock prices. Still, inflationary concerns are likely to remain in the near term. As interest rates potentially rise further and this bull market grows a bit older, we expect the pace of gains to slow somewhat and come with more volatility. However, given our assessment that the inflation story is largely about temporary pandemic-related distortions, we would view any pullbacks as an opportunity to add stocks at lower prices.

Inflation and Fixed Income

Inflation expectations can have a direct impact on bond prices. The fear, of course, is that higher inflation can lead to higher interest rates on bonds, which means current bond prices will fall. But that can be mitigated by investing in higher yielding bonds. Opportunistic income and high yield bonds meaningfully outperform investment grade bonds when interest rates rise which can be seen in the eight examples below (exhibit 12). On average the U.S. 10-year Treasury rose 2.0% on average over a 19-month time frame. Investment grade bonds were only up 0.4% on average, and the number of negative return periods was twice that of positive periods. By contrast, high yield corporates rose 17% on average and were positive in every time period. High yield bonds outperform during economic expansions as credit spreads contract, increasing the price of the bonds. This, combined with the high yield coupon, produces solid total returns. If interest rates increase because of economic strength and a modest increase in inflation, solid outperformance should continue with opportunistic income as credit spreads narrow. Another advantage is that we have exposure to floating rate assets, which provides a hedge against rising rates.

EXHIBIT 12

Opportunistic Income Has Outperformed Amid Rising Rates

Start Date	End Date	Duration (Months)	Change in 10Y Treasury Yield	Investment Grade Bond Performance	High Yield Bond Performance
8/29/1986	10/30/1987	14	2.0%	2.8%	2.6%
9/30/1993	11/30/1994	14	2.5%	-3.5%	2.0%
12/29/1995	7/31/1996	7	1.2%	-0.9%	3.9%
10/5/1998	1/21/2000	16	2.6%	-2.3%	3.7%
6/13/2003	6/28/2006	37	2.1%	4.3%	27.7%
12/30/2008	4/5/2010	15	1.9%	6.8%	67.3%
7/24/2012	12/31/2013	18	1.6%	-1.7%	14.7%
7/8/2016	10/5/2018	27	1.9%	-2.4%	16.3%
Average		19	2.0%	0.4%	17.3%
% Positive				37.5%	100.0%
% Negative				62.5%	0.0%

Source: Bloomberg. Investment Grade Bonds: Bloomberg Barclays US Aggregate, High Yield Bonds: Bloomberg Barclays U.S. Corporate High Yield.

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CNR's View of the Current Inflation Environment

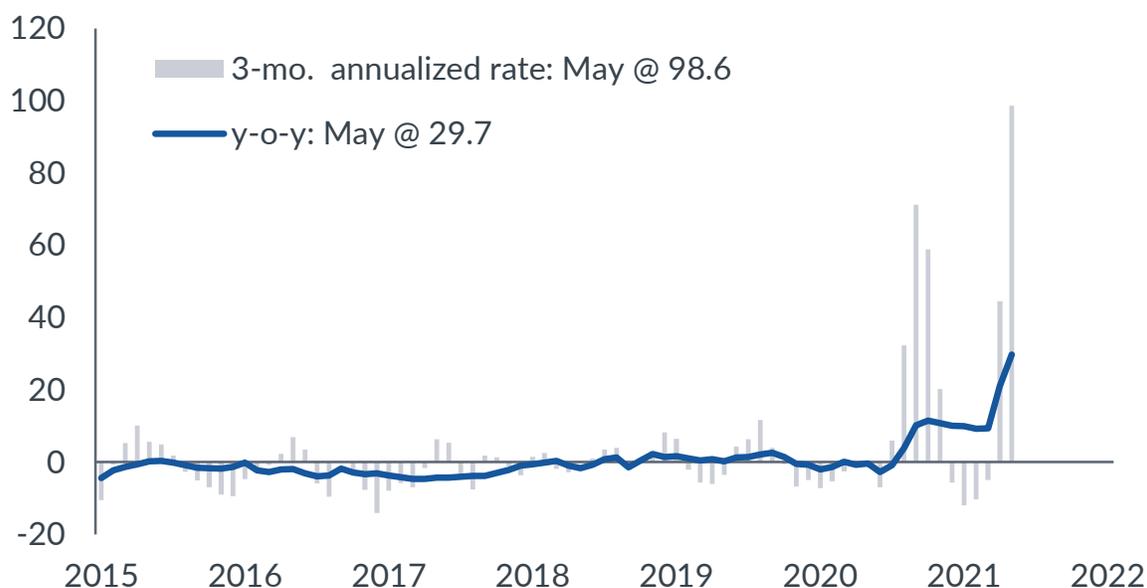
We view the strong inflationary pressures as transient. In the past two months, the news headline have captured investors' attention with the rapid increase in CPI. In April it leapt 0.8% and in May 0.6%, versus a long-term average monthly gain of 0.2%. These large increases helped lift the yearly change to 5.0%, the highest rate since 2008.

A good example of some the transient price movement has been in used car and truck prices. They have accounted for one-third of the monthly increase in April and May, but this is a sector that accounts for just 3.0% of the CPI index. In the past year, the prices of used cars and trucks have increased 29.7%, and in the past three months, the annualized rate has been 98.6%. Prices are high due to the shortage of new cars and trucks caused by the depleted stock of semiconductor chips needed to manufacture them. Once this supply/demand imbalance gets corrected, new car production will ramp up and used car and truck prices should fall, returning to the long-term trend.

This is the issue for much of the current inflationary pressures. With the rapid reopening of the economy, demand is well outpacing supply, resulting in prices moving up. But as supply is created and demand tapers off from this post-pandemic surge, prices should return near the long-term trend. That said, we anticipate a slight shift in price pressures. In the past, inflation has been in the 1.5% to 2.0% range. We anticipate it to be in the 2.0% to 2.5% range in the future.

EXHIBIT 13

CPI: Used Motor Vehicles
% change, seasonally adjusted



Source: Bureau of Labor Statistics as of May 2021.

Conclusion

Inflation is a process. It is not something that can quickly change on a dime. The reversal of the high inflation of the 1970s and early 1980s took about 40 years to reverse back down to an acceptable level of around 2.0%, and that included extremely aggressive action by the Fed. What impacts inflation the most is large, ongoing global economic, business and demographic events.

There are multiple reasons why we have had low and stable inflation for the past 25 years. It started in 1979 when President Jimmy Carter appointed Paul Volker as chairman of the Fed. The goal was simple: Persuade the public to abandon their entrenched belief that high inflation is acceptable. To achieve that goal, Volker imposed brute-force tactics, which included raising short-term interest above 20.0%, forcing a severe economic recession. That set the stage for the reversal in the rate of growth of inflation. Fed chairs since then have continued with this policy to keep inflation low and stable.

In addition to the Fed, there have been several other factors that have had an important impact on bringing inflationary pressure down to acceptable levels. Most of them surround commerce. Most notable has been globalization, which increased price competition with lower costs from foreign workers. Along with that has been the prevalence of container ships that transformed trade by making shipping so cheap that industries could locate factories far from their customers. There has also been the reduction in unionized labor reducing the indexation of wages to inflation. Technological developments in the manufacturing of many goods have reduced the need for expensive labor, thereby bringing down costs. The internet/e-commerce and the “Amazon Effect” have given a great deal of power to the consumer by providing them with transparency with simple access to price discovery, and most importantly, demographics. The population is getting older. As people get older, they tend to consume less, putting less pressure on demand. In a world where supply has been increasing due to globalization, the lower demand will help reduce price pressures.

EXHIBIT 14

Long-term Secular Trends to Keep Inflation Contained

Flexible and Competitive Labor Markets	<ul style="list-style-type: none"> • Reduced power of organized labor • Lack of indexed wages
Globalization	<ul style="list-style-type: none"> • Increased competition with foreign workers • Competitive product markets, inability to pass through cost increases
Technological Development	<ul style="list-style-type: none"> • Reduced costs to produce and distribute goods and services
“Amazon Effect”	<ul style="list-style-type: none"> • Price transparency, e-commerce
Polymaking Improvements	<ul style="list-style-type: none"> • Understanding of impact of monetary policy, higher Fed credibility • Rejection of price controls
Anchored Inflation Expectations	<ul style="list-style-type: none"> • “The trend is your friend” • Consumer pushback, conditioned to expect modest price increases
Demographics	<ul style="list-style-type: none"> • Aging of the baby boomers • High debt levels crowd out demand and investment

Source: CNR Research.

Right now, as the economy emerges from a pandemic-induced recession, we are seeing some price pressure due to supply/demand imbalance that tends to occur with all economic recoveries. This time is a little more extreme because households are not in the process of deleveraging, which tends to happen following a recession. Some households are armed with a lot of money, thanks to the generosity of the federal government. But as time moves on and the economy, both domestic and global, returns to full capacity in all aspects, those imbalances will subside and inflationary pressures will return to near-pre-pandemic levels.

To learn more, contact your Senior Investment Consultant or Portfolio Manager, visit us at CNR.com, or email us at info@cnr.com.

Index Definitions

The Consumer Price Index (CPI) is a measure that examines the weighted average of prices of a basket of consumer goods and services, such as transportation, food, and medical care.

The term personal consumption expenditures (PCEs) refers to a measure of imputed household expenditures defined for a period of time.

The S&P 500 Index is a market-capitalization-weighted index of the 500 largest publicly-traded companies in the U.S.

The Bloomberg Barclays Aggregate Bond Index is an index used by bond traders, mutual funds, and ETFs as a benchmark to measure their relative performance.

The Bloomberg Barclays US Corporate High Yield Bond Index measures the USD-denominated, high yield, fixed-rate corporate bond market.

The CAPE ratio is a valuation measure that uses real earnings per share (EPS) over a 10-year period to smooth out fluctuations in corporate profits that occur over different periods of a business cycle.

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