INVESTMENT INSIGHTS

Analysis, Insights and a Different Perspective December 2021/January 2022

INFLATION UPDATE

Over the past year, prices rose faster than they have in over 30 years. This above trend inflation, currently at 6.2%[1], has worried many investors. Our soundbite-driven news often oversimplifies the reasons for current inflationary trends. Factors like excessive money printing, supply chain issues, and high demand for goods are often argued to be the reason for the current relative high inflation. Given the economy's complexity, it is unlikely that a single explanation exists for inflation trends, both now and in the future. A better way of understanding current trends involves examining the key drivers of inflation. This issue of investment insights takes an in-depth look at the current inflationary environment.

KEY POINTS

- Inflation is above trend due to supply and demand imbalances.
- Wages on the lower end of distribution have increased. Overall, wages are in line with historical trends.
- Over the past year, the costs of food, energy, and automobiles have been the most significant contributors to inflation.
- Investors should always plan for the risk of inflation.

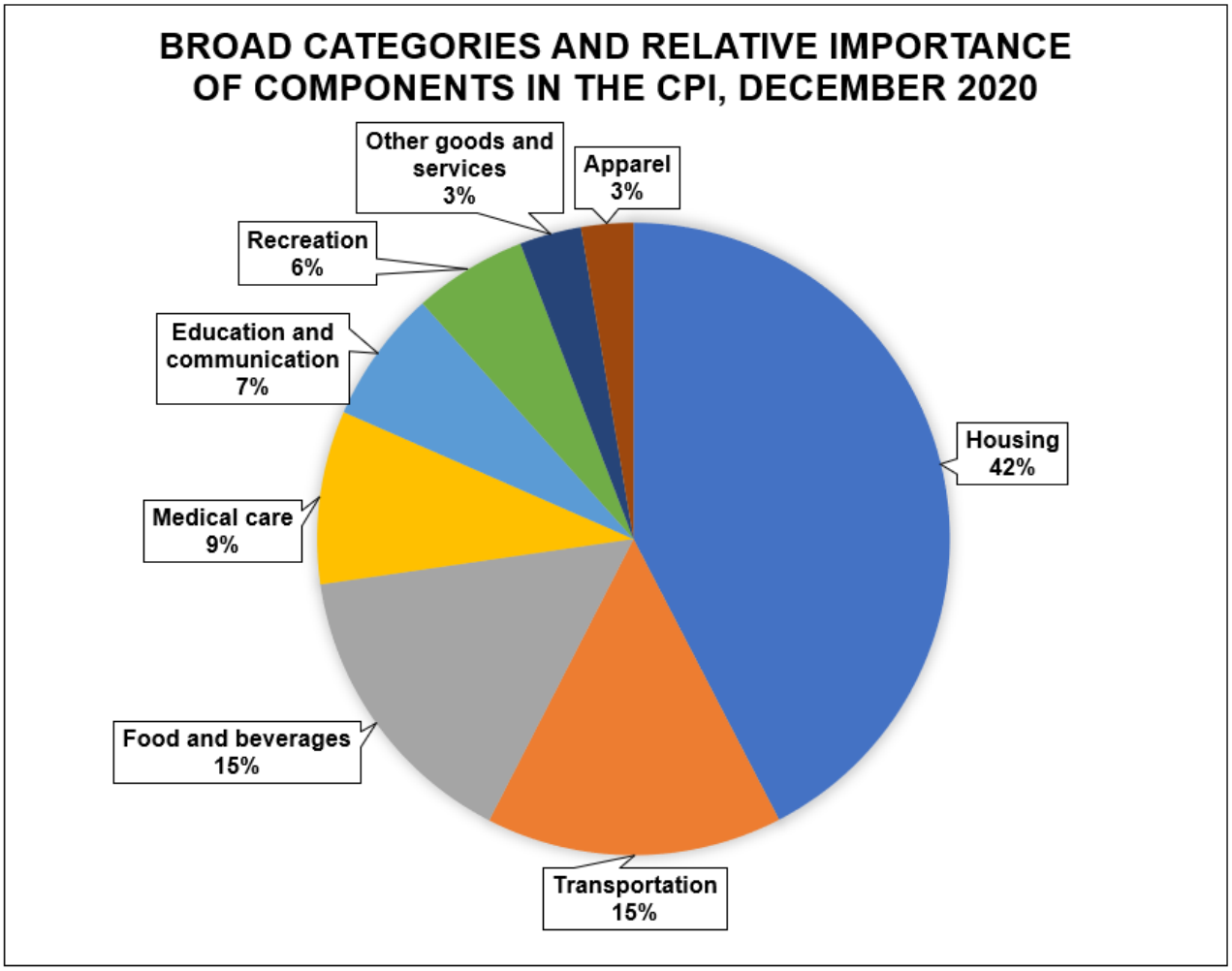
BACKGROUND

Before we dive in, some background information can help us understand the current inflationary environment. Inflation measures the rate at which the prices of goods and services rise over time. Inflation is not a measure of price increases for just a few goods and services. Instead, it reflects the price increase across the broad economy.

Cornerstone WEALTH SERVICES

1 Bureau of Labor Statistics, October 2021

The most widely followed measure of inflation is the Consumer Price Index (CPI). The CPI tracks changes in prices that consumers pay and is reported by the U.S. Bureau of Labor Statistics (BLS). BLS calculates CPI by first determining which items to include. Since CPI tracks prices paid by consumers, it excludes items purchased by businesses, governments, and other countries (items exported by the U.S.). Once the broad category of items is determined, the BLS defines how to weigh each item by surveying more than 24,000 consumers across the country. These categories and their relative importance are shown in the graph below.



Source: Bureau of Labor Statistics

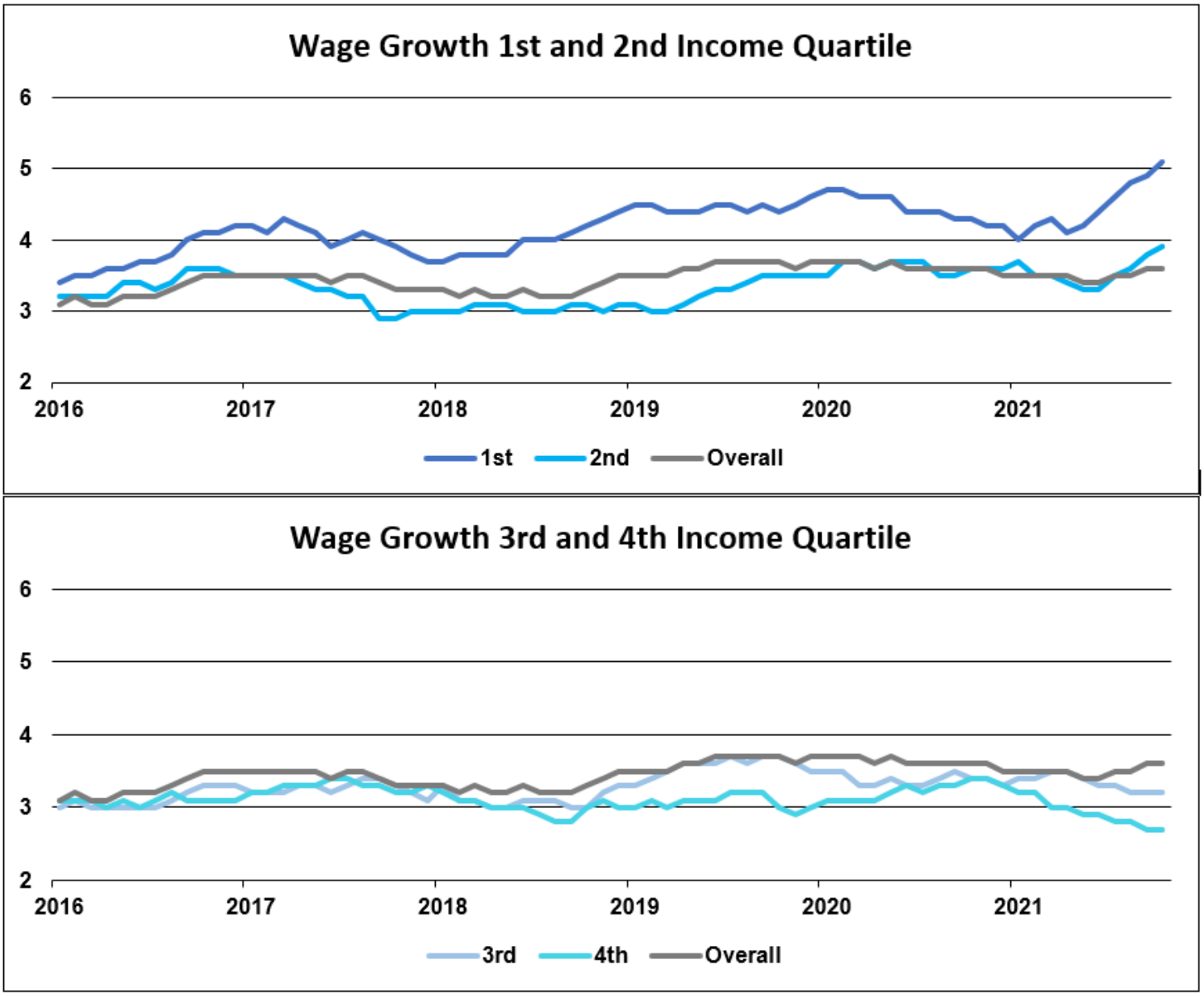
PUSH AND PULL

Inflation is driven by two main factors that are broadly classified as qualitative and quantitative. Over the short and medium-terms, qualitative factors are the main drivers of inflation. These qualitative factors include cost-push inflation and demand-pull inflation.

WAGES

Cost-push inflation occurs when the cost of producing goods or services increases. Wage inflation is an example of cost-push inflation and is one of the most important variables for inflation. Wages have risen recently, especially at the lower end of the income distribution. This is largely due to more job openings than people searching for employment. One way to attract people to a position is by offering higher wages. These wage gains, however, are mostly limited to the lower end of the income distribution.

The two graphs below show wage growth data by income distribution as calculated by the Federal Reserve Bank of Atlanta. While the wages for the first and second quartile rose faster than trend, the wage growth for the other groups slowed down relative to trend. Due to the divergence in wage growth based on income level, the overall wage gains have not changed since the start of the pandemic. Therefore, wage inflation has not been a key contributor to the recent inflation. For inflation to not linger long term, this trend of wage gain must continue making wages a key factor in how inflation will evolve into the future. In general, it is difficult to have sustained inflation without sustained wage inflation. The importance of wage cost for inflation is especially true for a service economy like the U.S., as wages generally make up a large part of the overall costs for services.

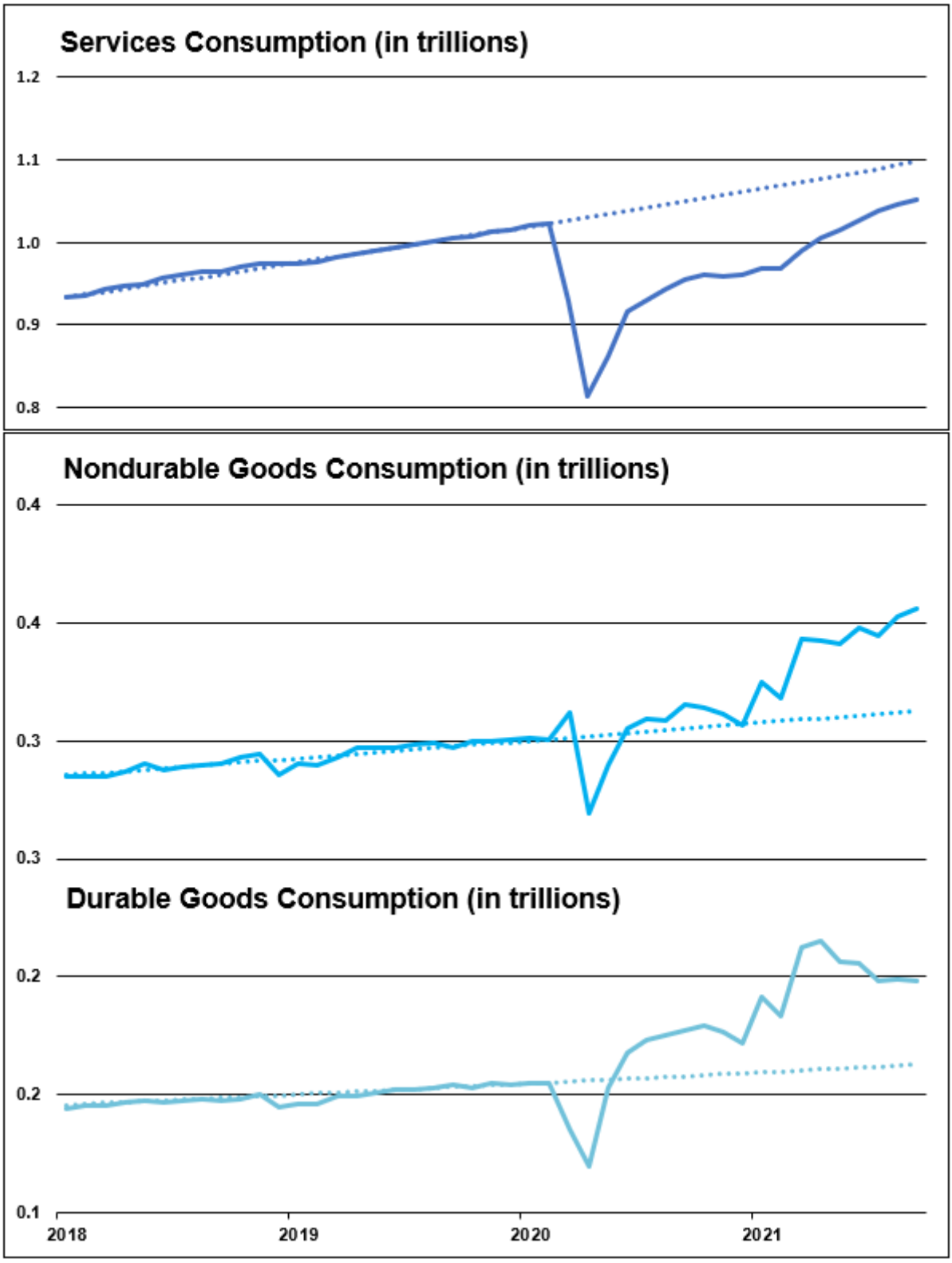


Sources: Current Population Survey, Bureau of Labor Statistics, and Federal Reserve Bank of Atlanta Calculations

DEMAND-PULL: SERVICES VS. GOODS

The trending topic of supply chain issues and shortages suggests that inflation is caused by the supply of goods and services. On the contrary, the data shows that the rise in prices today is driven more by demand-pull inflation than cost-push inflation. Demand-pull inflation occurs when the demand for a particular good or service increases faster than its supply.

For evidence, we can look at the series of charts below. These charts reflect that consumers have yet to return to consuming services at pre-covid levels. However, there has been an explosion in the consumption of goods. According to the BLS, the inflation in services has been 3.6% over the past year, whereas it was 13.2% for durable goods and 9.4% for nondurable goods. Prices have increased the fastest in the food, energy (oil), and automobile sectors, which warrant a closer look.



Source: U.S. Bureau of Economic Analysis, Personal Consumption Expenditures: Services, Personal Consumption Expenditures: Nondurable Goods, and Personal Consumption Expenditures: Durable Goods. Retrieved from FRED, Federal Reserve Bank of St. Louis.

FOOD AND ENERGY

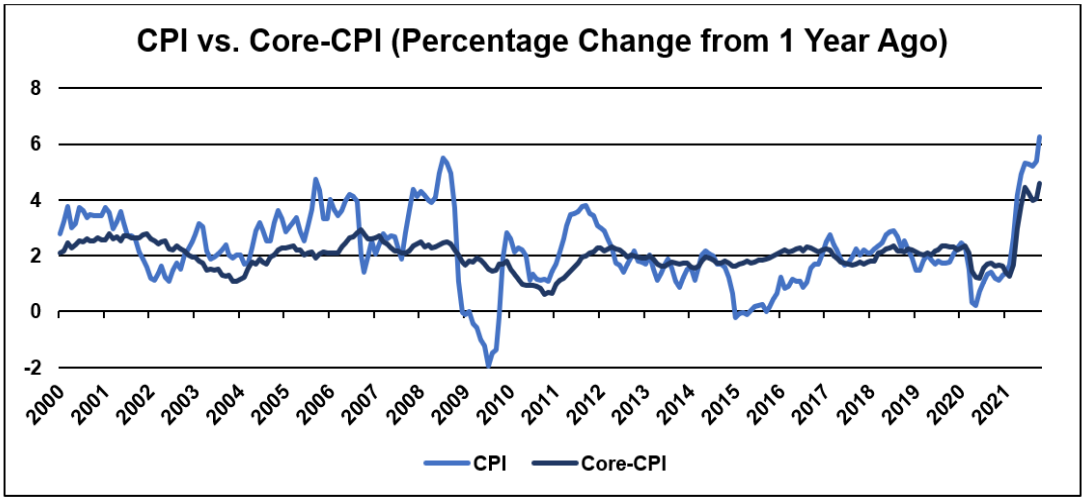
Most people have observed the rising price of gasoline. Over the last year, rising energy costs have contributed significantly to inflation. Thus, gains in gas prices have been one of the main contributors to energy inflation. As measured by West Texas Intermediate Crude, oil prices have more than doubled from 39.40 in October 2020 to 81.48 in October 2021.[1] Overall, the prices in the energy component of CPI rose at a rapid rate of 30% over the last year. The rapid rise in energy prices due to low inventory has been unable to keep up with the level of economic activity. At the current energy prices, the production of energy resources is more profitable, encouraging more production. The rate at which production catches up to the demand will be key to energy inflation trends in the future.

The price of food is another consumer good reflecting the impact of inflation. Most notably, the price of meat increased by more than 14% over the past year. The main culprit of this occurrence is supply chain issues caused by a surge in demand. Due to the sudden drop in demand during the lockdown, farmers scaled back their production. [2] As production scaled back, the lockdown restrictions began to ease, and the demand for meat surged.[3] The production could not keep up with the demand, as many meat plants had low labor capacity.[4] As the supply chain issues resolve, the increase in food prices is expected to moderate.

CPI VS. CORE-CPI

It should be noted that price fluctuations in food and energy are generally volatile. This is reflected by the variation on CPI vs. core-CPI below. Food and energy are also a relatively small weight of CPI at 13.97% and 7.32%[5], respectively. Thus, economists typically measure core inflation that accounts for roughly 80% of household spending. Using core-CPI as a measure of inflation is often criticized since it excludes prices of food and energy (gas)— components most visible to consumers. When food and gas prices rise quickly, it appears counter-intuitive to look at inflation without these components. Using core-CPI as a measure of inflation ignores factors that consumers typically observe more diligently. In an environment where food and energy prices are rising, looking at core CPI appears to measure inflation inaccurately.

These obvious criticisms aside, the difference between CPI and core-CPI allows us to examine the parts of the economy that contribute to our current inflation trends. In turn, this can help us figure out where inflation may be headed. Core-CPI, which represents roughly 80% of spending for a typical consumer, rose less than CPI at 4.6% over the past year. While core-CPI rose less than CPI, it increased faster than it has historically.



Sources: U.S. Bureau of Labor Statistics, Consumer Price Index for All Urban Consumers: All Items in U.S. City Average and Consumer Price Index for All Urban Consumers: All Items Less Food and Energy in U.S. City Average, retrieved from FRED, Federal Reserve Bank of St. Louis.

2 U.S. Energy Information Administration, Crude Oil Prices: West Texas Intermediate - Cushing, Oklahoma, retrieved from FRED, Federal Reserve Bank of St. Louis.

3 Jeffery, Adam, and Emma Newburger. "Wasted Milk, Euthanized Livestock: Photos Show How Coronavirus Has Devastated US Agriculture." CNBC, 2 May 2020.

4 Vega, Nicolas. "Beef Prices Are up 20% since Last Year-Here's Why." CNBC, 18 Nov. 2021.

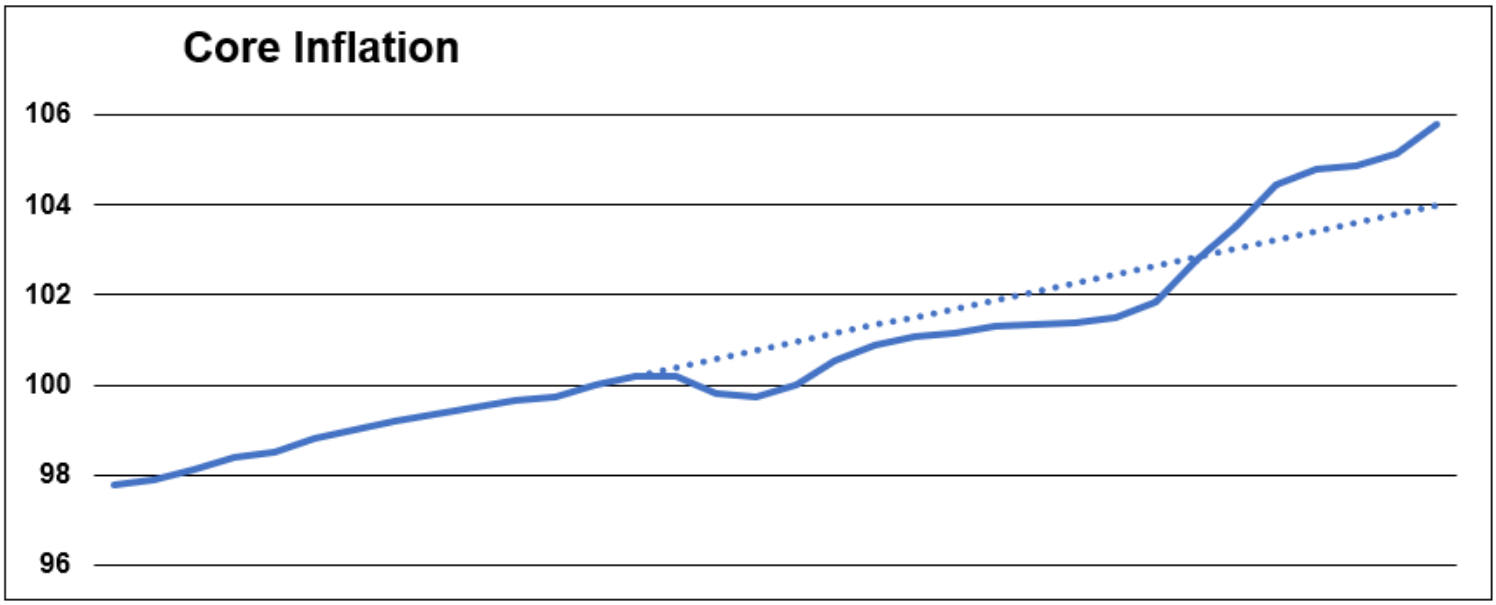
5 Ibid.

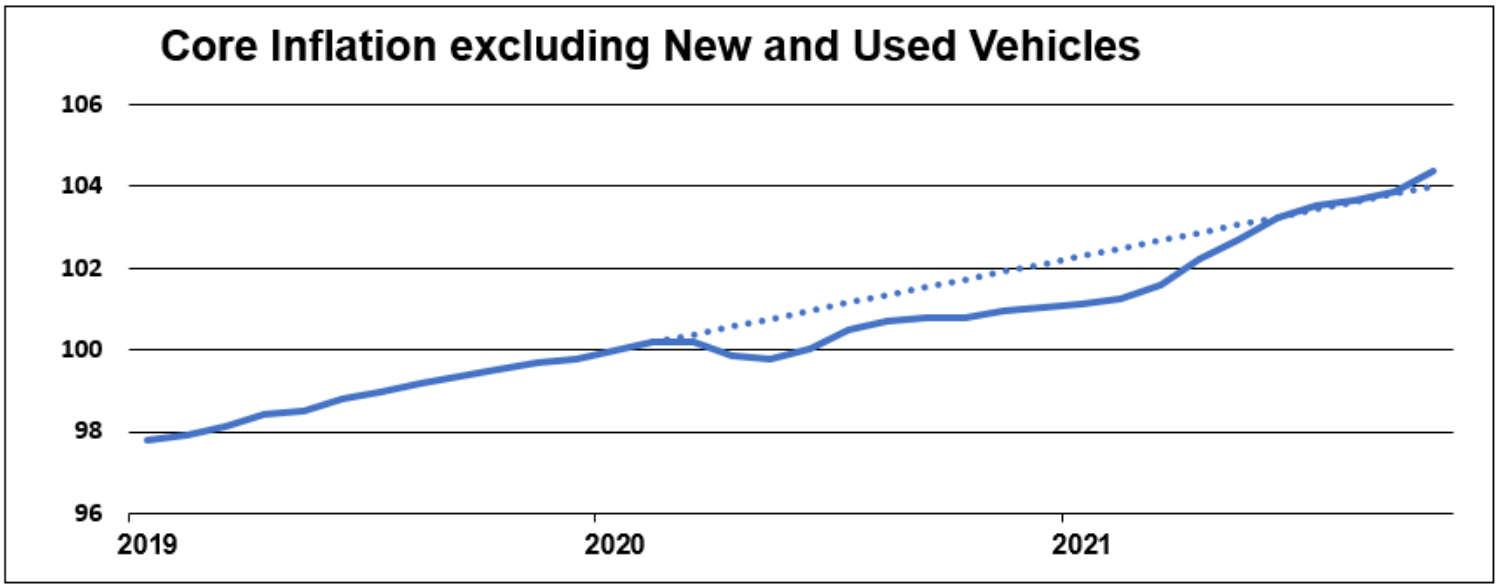
6 Bureau of Labor Statistics, October 2021

AUTOS

The largest contributor for core-CPI has been the price increase in both used and new cars over the last year. Inventory deficits drove price increases for both new and used vehicles. Covid-19 resulted in the shutdown of many chip manufacturing factories, and the demand for electronics increased for home office items, such as laptops. This issue resulted in a backlog of chip orders. Given the technological advancements of cars, all new cars contain computer chips. Car manufacturers typically order the computer chips based on expected demand. The lack of chips for new cars resulted in fewer new cars available for sale and an increased demand for used cars. In some instances, the sudden increase in demand for used cars resulted in their prices exceeding that of new cars.

The two graphs below help illustrate the impact of the car price increase on core-CPI. Core-CPI has recently increased faster than trend. This is mainly due to the price increase in new and used cars. While new and used motor vehicles make up only about 8% of CPI, they increased by more than 16% over the past year. Automakers are expected to increase their production over time despite production challenges over the past year. If they meet the demand, the auto prices should rise at a slower pace in the future. The pace in which automakers increase their production has been one of the biggest contributors of inflation over the past year. This factor will play a part in determining inflation trends going forward.





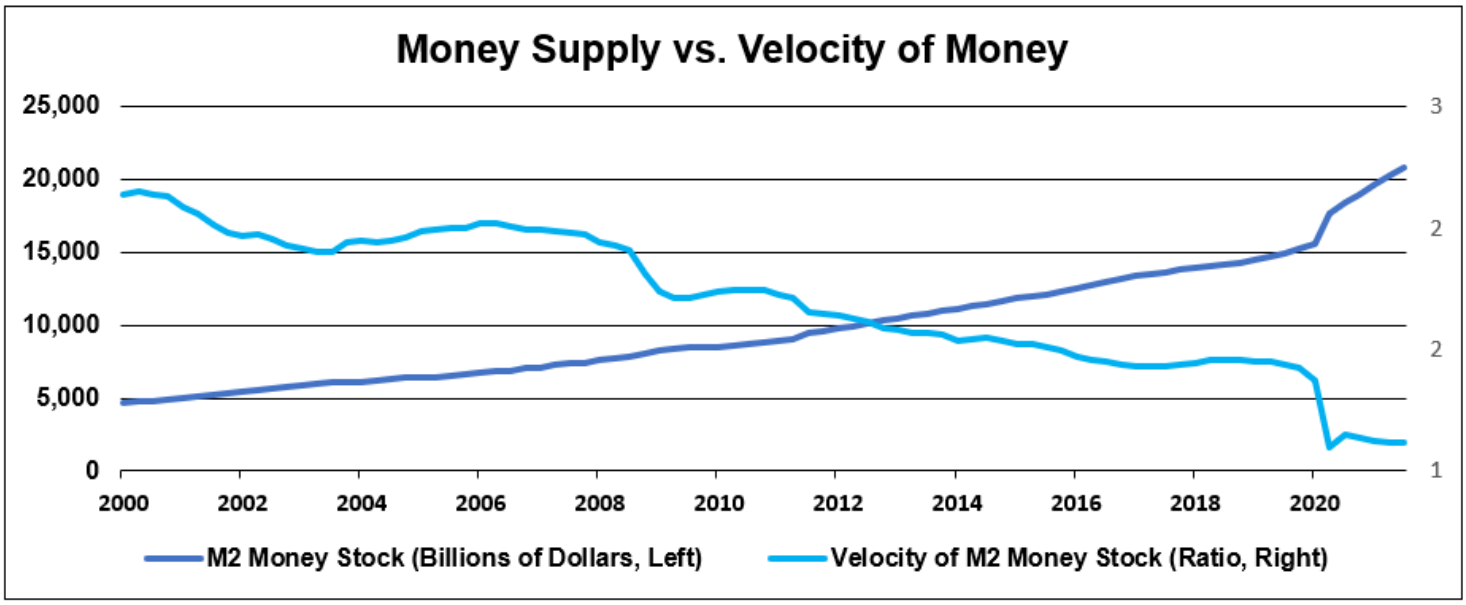
Author's calculation using Jan 2020 = 100

Source: U.S. Bureau of Labor Statistics, Consumer Price Index for All Urban Consumers: All Items Less Food and Energy in U.S. City Average and Consumer Price Index for All Urban Consumers: New and Used Motor Vehicles in U.S. City Average, retrieved from FRED, Federal Reserve Bank of St. Louis.

MONEY SUPPLY AND VELOCITY OF MONEY

The contributing factors to inflation discussed above were the cost-push inflation and demand-pull inflation. These qualitative factors impact inflation over the short and medium terms. Over the long term, inflation is driven quantitatively by the growth of the money supply in the economy. Consider this example to help illustrate the relationship between price and money supply: Imagine a country that has a finite amount of money in circulation and finite products. For simplicity, let us assume it has $2 in circulation, and it has only one product available for sale – one loaf of bread that costs $2. If the country's central bank were to double the amount of money available in the economy to $4 by printing two additional dollars, the cost of a loaf of bread now would be $4.[7] There is still one product available for sale in this simple scenario, but there is now twice as much money circulating in the economy, raising the price from $2 to $4.

The rapid rise in the money supply over the past two years gained much attention. While there is a long-term relationship between money supply and inflation, one other variable plays a key role in the money supply's impact on inflation. This variable is known as the velocity of money — the rate at which money circulates in the economy. In the example above, we noted that the price of a loaf of bread would increase from $2 to $4 if the central bank decided to print two additional dollars. This would be true if the velocity of money does not change and remains constant. The simple one-to-one relationship would not hold if consumers in this economy decided to save the additional money instead of spending it. Over the past year, the money supply rose about 12%, but inflation only increased by 6.2%. This is due to the velocity of money decreasing during the same time, as shown in the graph below. Given the recent increase in money supply, the velocity of money will be the key variable in determining inflation trends over the long term.



Source: Board of Governors of the Federal Reserve System (U.S.), M2, retrieved from FRED, Federal Reserve Bank of St. Louis; and, Federal Reserve Bank of St. Louis, Velocity of M2 Money Stock, retrieved from FRED, Federal Reserve Bank of St. Louis.

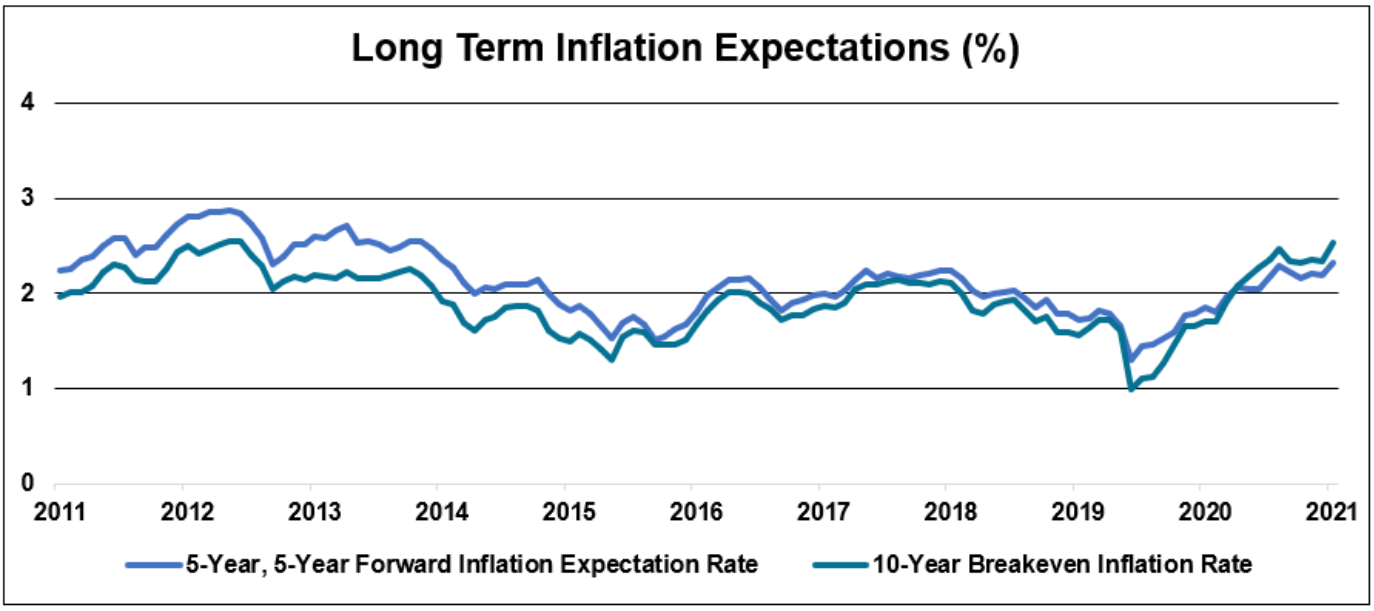
INFLATION FORECAST

Data suggests that underlying reasons for inflation relate to the supply not keeping up with the elevated demand for goods. As the production increases, the prices of the key inflation contributors over the past year (food, energy, and automobiles) are expected to stabilize. Thus, we expect inflation to moderate over time. The precise timing of these trends, however, remains difficult to forecast. While we expect inflation to moderate over time, it is possible it remains elevated or becomes worse during the first part of next year prior to stabilizing.

7 Assuming velocity of money and real output (real GDP) does not change. For more on this relationship, please see the Quantity Theory of Money.

The trends on the service side of the economy are not as clear, as inflation for services has not risen as fast. This is mainly due to a lower demand for services relative to goods and increased productivity of the businesses. In order for above-trend inflation to not become the norm, businesses will need to find ways to keep up with increased demand for services going forward. Thus, labor market conditions will be the key in determining inflation trends.

While inflation has lingered longer than expected by many economists, examining the data from the underlying components of CPI suggests that it should moderate over time. The current stock and bond markets also appear to be aligned with this view. Furthermore, as reflected in the graph below, market-implied inflation expectations are not significantly elevated above historical trends.



Source: Federal Reserve Bank of St. Louis, 5-Year, 5-Year Forward Inflation Expectation Rate and -Year Breakeven Inflation Rate, retrieved from FRED, Federal Reserve Bank of St. Louis.

Inflation is one risk investors need to consider for achieving their long-term goals. Even at moderate levels, inflation significantly impacts the cost of living over time. For example, assuming inflation of 2% per year, a 29-year-old individual who spends $50,000 per year would need $100,000 to maintain their lifestyle at age 65.

While investing carries risk, it is also risky not to invest. You need to save enough to match the inflation rate to maintain your lifestyle — which is hard to do without investing. To properly pursue your long-term financial goals, such as saving for retirement, you need investments that can generate returns to cover the inflation-driven loss in purchasing power. Contact your financial advisor to help you develop a plan based on your specific needs.

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