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with Michael Hasenstab, Ph.D.

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THE INFLATION DEBATE: WILL PRICE
PRESSURES PERSIST OR START TO RECEDE?

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Global Macro Shifts

The inflation debate: Will price pressures persist or start to recede?

Global Macro Shifts is a research-based briefing on global economies featuring the analysis and views of Dr. Michael Hasenstab and senior members of Templeton Global Macro (TGM). Dr. Hasenstab and his team manage Templeton's global bond strategies, including unconstrained fixed income, currency and global macro. This economic team, trained in some of the leading universities in the world, integrates global macroeconomic analysis with in-depth country research to help identify long-term imbalances that translate to investment opportunities.



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Overview

High inflation figures in many parts of the world have generated concerns over whether elevated price pressures will persist and drive longer-run inflation expectations higher, or whether they will prove transitory and normalize back to longer-term averages. Conditions in the US have garnered most of the attention to date, though other areas of Europe and Latin America are also contending with above-target inflation, such as Germany, Poland, Russia, Brazil and Mexico. At the same time, inflation has remained relatively contained in areas of Asia, such as China, Indonesia and Singapore.

There are varying forces at play in different countries, meaning the inflation paths ahead will not be broadly the same for each country, nor will the monetary policy responses. Certain emerging market central banks are already tightening policy to contend with rising inflationary pressures, while several developed market central banks, like the US Federal Reserve (Fed) and the European Central Bank, appear to be in position to remain accommodative for longer on the assumption that price pressures will prove temporary.

In this research paper, we focus our attention on inflation in the US, comparing the case for temporary inflationary pressures against the argument that high inflation will become more persistent and entrenched. There is merit to both sides of the argument, in our view, as well as room for conditions to shift and evolve in the months ahead. To explore the arguments, we identify key economic variables that need to be monitored to assess whether inflationary pressures are building in the channels of transmission. Broadly, inflation is driven by five key categories, which are intertwined and play common roles:

- 1) Rising inflation expectations:** Temporary shocks do not necessarily drive inflation higher unless they become embedded in the price-setting mechanism.
- 2) Wage/price spirals:** Historical experience suggests that inflationary episodes are generally accompanied by periods of accelerating nominal wages.
- 3) Accelerating demand outpacing supply on a sustained basis:** Inflation can surface from fiscal policy that is overly expansionary without a concomitant supply response, or terms-of-trade dynamics that expand demand quickly without domestic supply keeping up.

4) Highly accommodative monetary policy: Both emerging markets and developed markets can greatly expand monetary policy, as shown during the global financial crisis (GFC) and COVID-19 pandemic. However, there is a risk that economic agents will lose faith in the credibility of central banks to tighten policy if inflation rises excessively.

5) Highly expansive fiscal policy: Both emerging markets and developed markets ran sharply higher deficits during the pandemic, driving debt levels higher. Fiscal policy has remained expansive in many countries even as economic activity recovered to pre-COVID-19 levels. This ongoing stimulus policy supports risks, boosting aggregate demand and excessively fueling inflation. Moreover, as the increasing debt levels become harder to finance, central banks will face growing pressures to keep monetary policy lower to reduce public borrowing costs, and may even be tempted to provide direct financing to the government.

This report is structured to explore each of these factors and channels of transmission, starting in Section 1 with a review of the current drivers of high inflation in the US. We take a close look at specific components that are having an outsized impact on the recent figures, as well as the broad impacts of base effects, resurgent economic activity and supply chain disruptions. We also compare current conditions with prior periods in US history, as well as the differing drivers of inflation in the US against the inflation drivers in Europe. In Section 2, we explore the risk factors that could enable high inflation to persist and/or drive inflation higher in the future, specifically reviewing price formation, wage/price spirals, structural changes to the labor market, rising housing costs and the potential for inflation expectations to become unanchored by expansive fiscal policy.

Overall, we see merits to both sides of the inflation debate. While outsized narrow drivers are boosting US inflation currently, we recognize that those factors may be more than temporary in nature and may be broadening across the consumption basket. Moreover, several of the factors that we identify may end up pushing the US into a higher inflationary regime. It is relevant to note that the Fed moved toward an average inflation target monetary framework to boost inflation after underachieving on its 2% inflation goal for most of the post-GFC period. So, by design, inflation should be higher post-COVID-19 than pre-COVID-19. We remain vigilant and intend to closely monitor the five broad channels that could cause inflation to become unmoored.

1. US inflation during the recovery

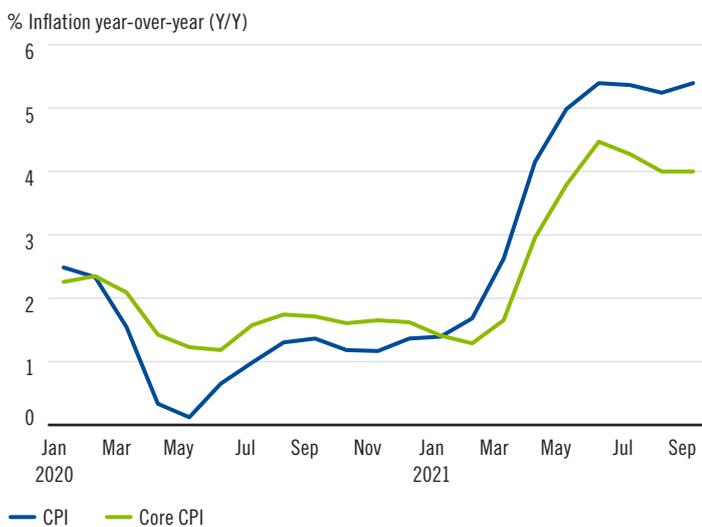
US inflation has trended sharply higher since the spring of 2021, with headline CPI (Consumer Price Index) reaching 5.4% year-over-year (Y/Y) in September and core CPI (ex food and energy) levelling at 4.0%. A combination of factors are responsible for the elevated figures, notably the sharp decline in prices in March, April and May a year ago due to the onset of the pandemic (base effects), as well as resurgent economic activity during the reopening of the economy. Supply chain disruptions in certain sectors have also led to price pressures. The resurgent activity, supply chain issues and higher commodity prices have boosted monthly price gains above recent historical ranges. Whether elevated US inflation persists for longer depends on a combination of each of these factors, with some having longer staying power than others. The true test will be whether these factors become persistent enough to feed into longer-term inflation expectations, which would create self-sustaining inflationary dynamics.

Base effects

Abnormally low prices in a prior year can boost annual inflation in a subsequent year, as prices move higher from a low base. This effect can occur even if the monthly increases in inflation in the current months are not abnormally high. The same effect works in reverse—annual inflation can appear significantly depressed if prices were abnormally high in a prior year.

US INFLATION HAS RISEN SHARPLY IN 2021

Exhibit 1: US Consumer Price Index
As of September 2021



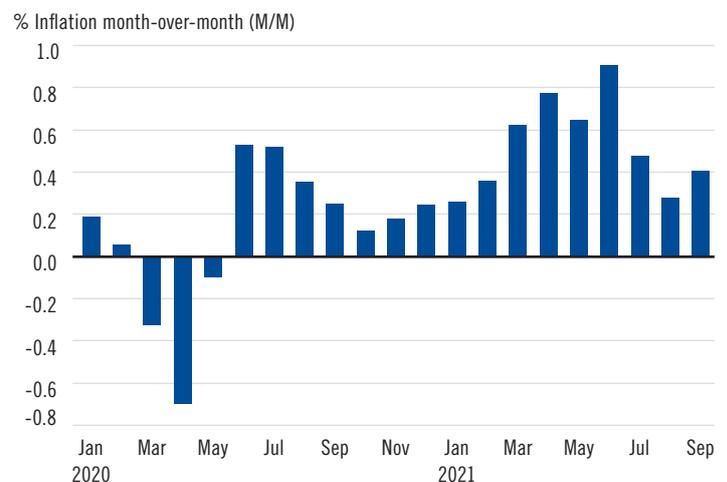
Source: Bureau of Labor Statistics (BLS).

During 2020 there were significant variations in the price effects for various sectors. Most notably, energy prices dropped sharply in March and April and remained significantly below their average of the past decade (through the end of 2020). By contrast, food prices rose during the pandemic shocks as people stocked up based on concerns regarding shortages and ongoing uncertainties. Thus the base effects of energy prices and food prices are having different effects on annualized inflation figures in 2021. Energy inflation is a notable contributor to overall higher inflation, due in part to the substantial base effect.

Resurgent economic activity

Base effects have been further amplified by an above-average surge in economic activity that occurred as several sectors reopened in the second quarter of 2021. Pent-up demand has also outpaced supply recoveries in certain sectors, adding to price pressures. One of the more notable areas of surging activity during the spring and summer months was the hospitality and travel-related sectors, as hotel prices, airfares and rental car prices boomed after declining sharply a year ago. Specifically, the surge in demand for rental cars collided with diminished supply, as car rental companies sold significant shares of their fleets during the onset of the pandemic in 2020, leaving them under-equipped for the

Exhibit 2: Monthly US inflation (CPI)
As of September 2021



Source: BLS.

ENERGY AND FOOD INFLATION REMAIN ELEVATED IN THE US

Exhibit 3: Energy inflation in the US (component of CPI)

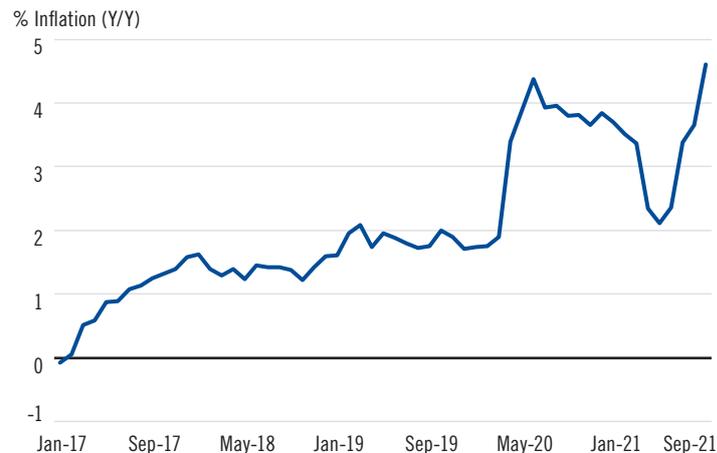
As of September 2021



Source: BLS.

Exhibit 4: Food & beverage inflation in the US (component of CPI)

As of September 2021



Source: BLS.

SPECIFIC SECTORS HAVE SEEN NOTABLE PRICE SPIKES

Exhibit 5: Car and truck rental inflation in the US (component of CPI)

As of September 2021



Source: BLS.

Exhibit 6: Lodging and airline fare inflation in the US (component of CPI)

As of September 2021



Source: BLS.

resurgent demand in 2021. Airfares also increased sharply on an annualized basis in the second quarter of 2021, though overall price levels remained below pre-pandemic levels as the volume of travel has not fully recovered. Hotel prices sit somewhere in between; they dropped during the beginning of the pandemic, but prices then rebounded, recovering to pre-COVID-19 levels in the spring of 2021. However, labor shortages and higher operations costs (to accommodate for social distancing and other health measures) have boosted prices above pre-pandemic levels, even as the volume of travel has not fully recovered.

Supply chain disruptions

Supply bottlenecks have intermittently surfaced in several industries due to accelerated demand, as well as logistical disruptions and ongoing uncertainties (economic, health and policy) that make it difficult to accurately schedule production. Suppliers have faced problems reestablishing supply lines to boost production. Delivery times have lengthened as a result. International and domestic shipping rates have also boomed.

In some instances, such as the car industry, inventories have dropped substantially in the face of returning demand and

SUPPLY DELIVERY TIMES HAVE LENGTHENED AND SHIPPING COSTS HAVE SURGED

Exhibit 7: ISM supplier deliveries time

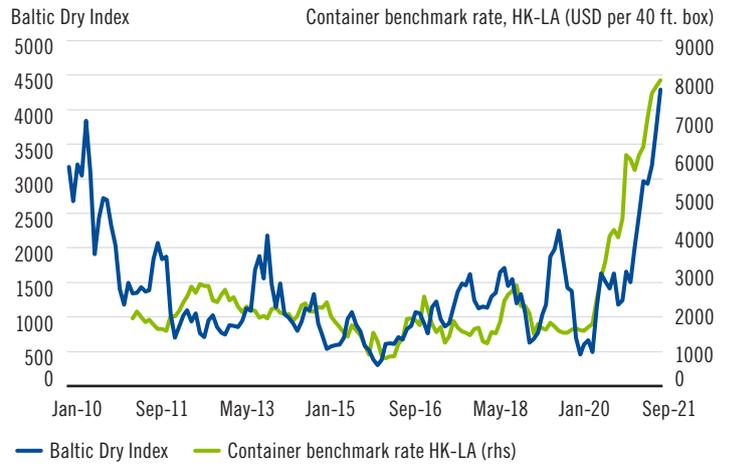
As of September 2021



Source: Institute for Supply Management.

Exhibit 8: Shipping rates (Baltic Dry Index and container benchmark rate, Hong Kong [HK] to Los Angeles [LA])

As of September 2021

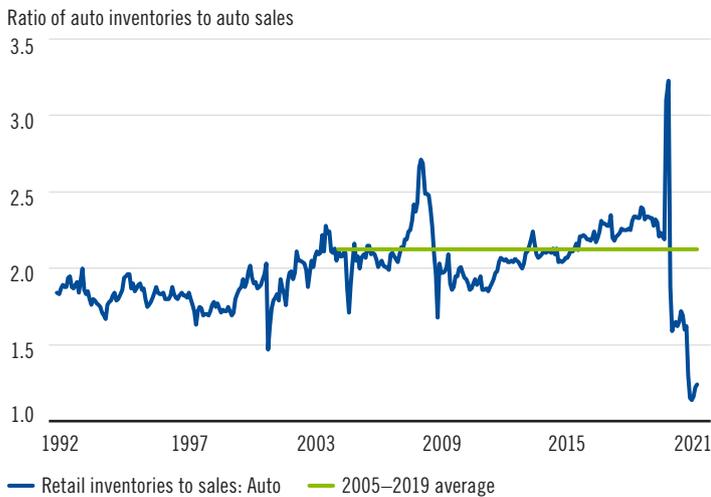


Sources: Bloomberg, Baltic Dry Index, Drewry Shipping Consultants, derived from Hong Kong non-vessel-operating common carriers. Drewry Hong Kong-Los Angeles Container Rate in US\$ per full 40ft container load, excluding terminal handling charge at origin port. Indexes are unmanaged, and one cannot invest directly in an index. They do not include fees, expenses or sales charges. Important data provider notices and terms available at www.franklintempletondatasources.com.

AUTOMOBILE INVENTORIES HAVE FALLEN AND PRICES HAVE SPIKED

Exhibit 9: Ratio of auto inventories to auto sales

As of August 2021

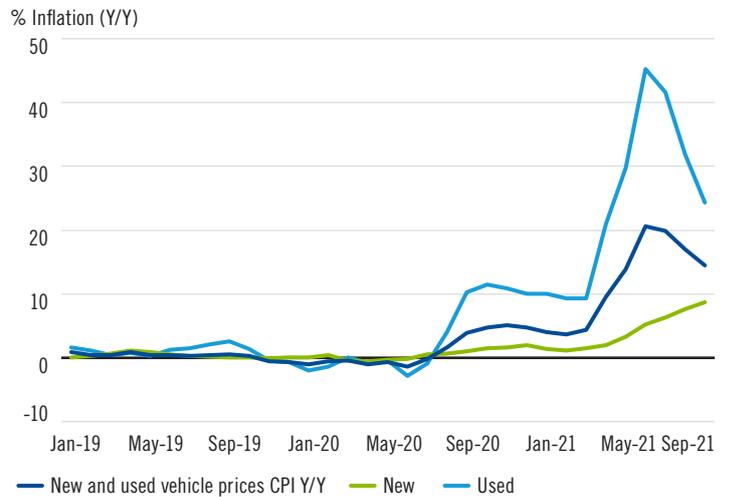


Source: U.S. Census Bureau.

supply disruptions, causing shortages. Used car prices have notably outpaced new car prices. In some industries, rising prices have induced supply to catch up, bringing prices more in line with fundamentals. Lumber prices went through such an episode in the spring, initially surging before reverting back to trend levels.

Exhibit 10: New and used vehicle prices

As of September 2021



Source: BLS.

A comparison of today's inflation to past episodes in the US

In terms of US economic history over the last 100 years, the current inflation situation is most similar to the 1946-1948 post-World War II (WWII) recovery period, according to White House research.¹ The initial years of the post-war recovery saw both a supply shortage and accelerated demand. Supply was low because resources had been reallocated

LUMBER PRICES JUMPED IN THE SPRING ON LABOR SHORTAGES, BUT HAVE SINCE REVERTED

Exhibit 11: Lumber prices
As of October 2021



Sources: Bloomberg, Chicago Mercantile Exchange. Important data provider notices and terms available at www.franklintempletondatasources.com.

to the production of military goods for several years. Nonetheless, the general conclusion from the 1940s was that high inflation was largely transitory, due to supply and demand imbalances, and that inflation can quickly decline once supply chains recovery and demand normalizes.

While there are parallels between the conditions in 2021 and those in 1946, there are nonetheless significant differences as well. In 2021, supply has been hampered by both disruptions to production, as well as an underestimation of the demand recovery. Supply constraints in 2021 are also not as widespread as they were in the post-WWII period. During the war, resources

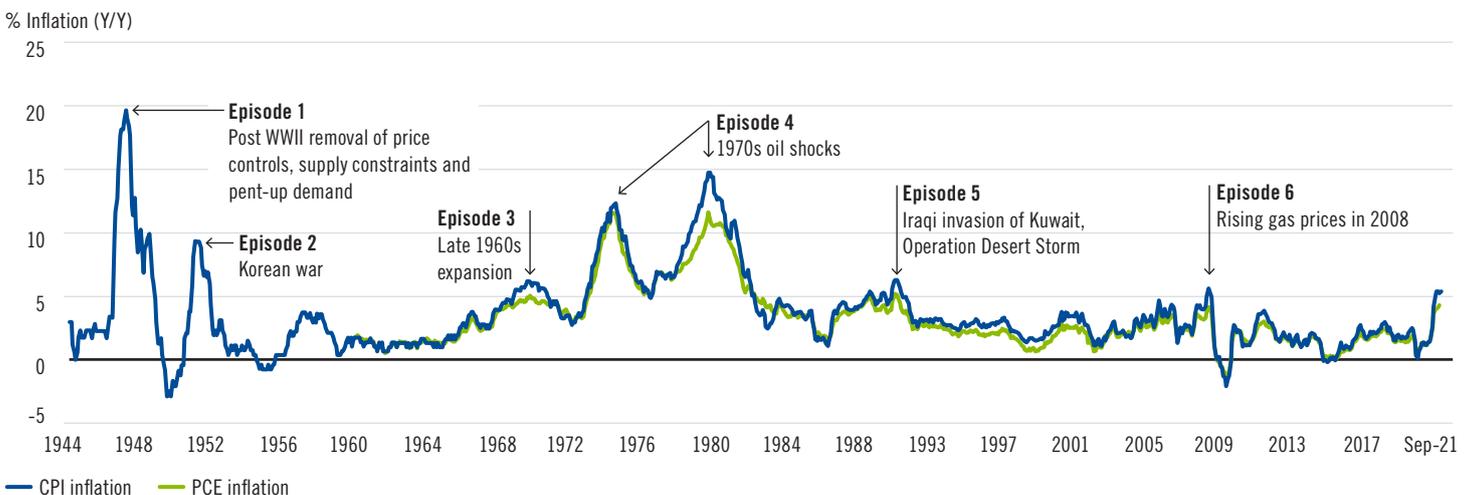
were extensively reallocated to arms production, which proved difficult to quickly repurpose for the needs of the post-war peace economy. By contrast, during the 2020 pandemic, resources were idled but not repurposed or transferred, so it has been much easier to restore usage of them.

Additionally, the sector reallocation lasted for several years during WWII, resulting in entire work forces having to be retrained for different post-war needs. By contrast, the impact of the pandemic, while large in magnitude, was felt over a much shorter period, meaning workers largely retained necessary skills that could be quickly put back into productive use. As a result, capacity driven inflationary pressures have not been as broad-based as they were in the 1940s. Also, this time around the impact of supply shortages is much more concentrated in a few sectors, with the exceptions of energy and vehicles.

However, several factors related to the evolution of supply chains have caused disruptions to ripple through the world economy. The transportation of goods and services has seen enormous evolution since WWII, allowing greater interconnectivity. Containerization, introduced in the 1950s, allowed goods to be transported across different modes of transport, enabling faster transfers at reduced costs. This more reliable and interconnected shipping allowed for inventories to transition to just-in-time delivery in the 1970s. In the 1980s, supply chains became truly global. With the increasing complexity of supply chains, shocks in one country that affect one input can ripple through the global economy, creating multiple disruptions up and down the chain.²

SUPPLY AND DEMAND IMBALANCES IN THE 1940S ARE THE CLOSEST COMPARISON TO CURRENT INFLATIONARY DYNAMICS

Exhibit 12: Six episodes of elevated inflation since WWII
As of September 2021

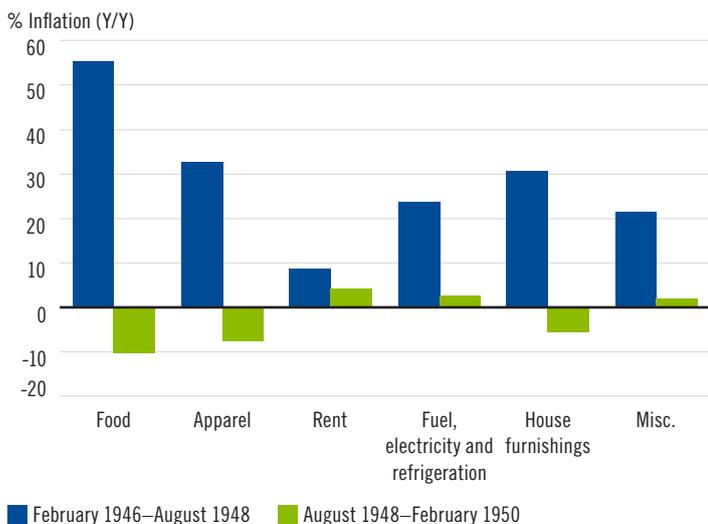


Sources: BLS, Bureau of Economic Analysis (BEA).

INFLATION SURGED AFTER WWII, THEN QUICKLY RETREATED

Exhibit 13: Post-World War II inflation in the US

As of February 1950

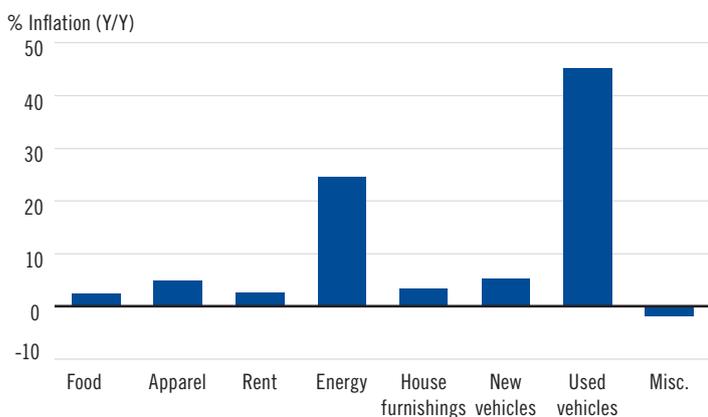


Sources: BLS. One hundred years of price change: the Consumer Price Index and the American inflation experience, April 2014.

CERTAIN SECTORS ARE HAVING AN OUTSIZED IMPACT ON HEADLINE INFLATION FIGURES

Exhibit 14: CPI inflation by component

As of June 2021



Source: BLS.

A comparison of inflationary trends: US inflation driven by reopening vs. European inflation driven by energy

Inflation dynamics have not been homogenous across the globe, despite many countries simultaneously facing rising inflation. In this subsection, we compare the differing drivers of US and euro area inflation by looking into the compositions of their respective CPI baskets. In the US, high inflation has been largely driven by narrow factors associated with the reopening of the economy, as pent-up demand encounters supply chain disruptions. In the euro area, energy prices have largely driven rising inflation, with headline HICP (harmonized index of consumer prices) reaching 3.4% Y/Y in September 2021, its highest level since 2008.

INFLATION TRENDS HAVE TRACKED BETWEEN THE US AND EURO AREA, BUT FOR DIFFERENT REASONS

Exhibit 15: US CPI and Euro area HICP

As of September 2021



Sources: Bloomberg, BLS, Eurostat. Important data provider notices and terms available at www.franklintempletondatasources.com.

Table 1 highlights some of the predominant inflation components of the two economies. In the US, a large part of current inflation is driven by narrow factors. For example, the used cars and trucks sector accounted for only 3.17% of the total CPI basket in June 2021, but contributed 1.43 percentage points to the total headline inflation figure of 5.40% Y/Y. In aggregate,

INFLATION IS BEING DRIVEN BY SPECIFIC COMPONENTS IN THE US AND BY ENERGY IN THE EURO AREA

Table 1: Narrow components in US CPI and Euro area HICP

As of June 2021

United States	Percentage point inflation contribution (Y/Y)	% Share of CPI basket
(A) Overall CPI	5.40	100
Gasoline	1.66	3.69
Used Cars and Trucks	1.43	3.17
Airline Fares	0.18	0.74
Car and Truck Rental	0.15	0.17
(B) Subtotal	3.42	7.77%
Share of contribution % (B/A)	66.33%	7.77%
Euro area	Percentage point inflation contribution (Y/Y)	% Share of HICP basket
(A) Overall HICP	1.90	100
Electricity	0.24	2.88
Gas	0.12	1.91
Liquid fuels	0.13	0.60
Diesel	0.29	1.54
Petrol	0.40	2.00
(B) Subtotal	1.18	8.93%
Share of contribution % (B/A)	62.11%	8.93%

Sources: Bloomberg, BLS, Eurostat. Important data provider notices and terms available at www.franklintempletondatasources.com.

a narrow set of factors identified in the table combine to represent just 7.77% of the CPI basket, but account for two-thirds (66.33%) of the overall CPI print. Optimistically, if these narrow factors prove temporary and fade, inflation rates should quickly revert to more moderate levels. However, the rise in input price pressures may dislodge inflation expectations and contaminate the price-setting process toward higher inflation.

The dynamic in the euro area is different. To date, inflation has been largely driven by energy prices. Table 1 shows that energy-related sectors, such as electricity, gas, liquid fuels, diesel and petrol, have been significant contributors to overall inflation. Notably, these sectors are driven by international pricing. All five components together accounted for just 8.93% of the HICP basket in June 2021, but contributed 62.11% of the overall inflation figure (1.9%).

Exhibits 16 and 17 show the CPI and HICP baskets without these narrow factors, as well as the headline CPI and HICP series. We can see from the relatively stable trend lines in the CPI ex narrow components series that the narrow factors are the primary drivers of the rises in inflation, and that they also have not spread into other CPI components. At this point, the “underlying” inflation dynamics remain essentially stable.

A comparison of historical extremes: Deflation in Japan vs. hyperinflation in Brazil

Inflation has not been an issue in Japan since the 1990s. Instead, the country has remained entrenched in a multi-decade deflationary trap (Exhibit 18). Domestic demand has

persistently lagged the supply output due to structural issues, including demographic drivers and companies stuck in zombie capital structures. The Japanese experience suggests that a lack of demand rather than a lack of supply over the mid-to-long term may become the real risk for many developed market economies.

By contrast, conditions are likely to be more idiosyncratic and varied among emerging markets. While both developed market and emerging market economies have deployed extraordinary stimulus measures, the impacts of such stimulus could be more damaging and longer lasting in emerging markets, unless the fiscal imbalances are addressed promptly. Inflation problems in emerging markets are not likely to be short-lived or automatically solved by stronger demographics and greater opportunities for growth. Expectations for hyperinflation can surface quickly due to limited access to foreign goods, high debt and previously tolerated levels of high inflation. Brazil experienced acute episodes of hyperinflation in the 1980s and 1990s (Exhibit 19 on the next page).

Given these polarized examples, the question remains whether the current risks for the US and much of the world tilt closer to the example of Japan or Brazil. For emerging and frontier markets, the risks of hyperinflation are typically more acute, particularly for countries that lack central bank credibility and that have pursued easy macro policies through excessive fiscal spending, excessive monetary accommodation, or both. A faster and more aggressive monetary policy response may be needed in certain countries to contend with quickly rising inflationary pressures.

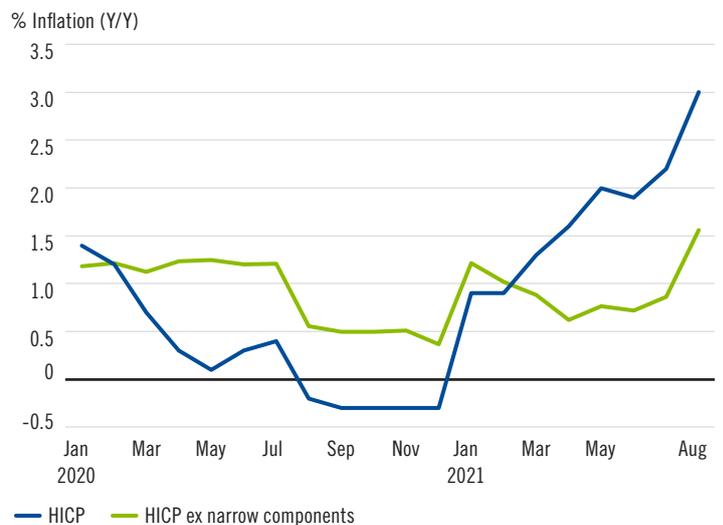
HEADLINE INFLATION FOR THE US AND THE EURO AREA IS SIGNIFICANTLY LOWER IF THE NARROW COMPONENTS ARE STRIPPED OUT

Exhibit 16: US CPI excluding narrow components
As of September 2021



Source: BLS.

Exhibit 17: Euro area inflation excluding narrow components
As of August 2021



Source: Eurostat.

JAPAN HAS STRUGGLED WITH DEFLATION WHILE BRAZIL AIMS TO AVOID A REPEAT OF HYPERINFLATION

Exhibit 18: Japan—National headline inflation since 1960

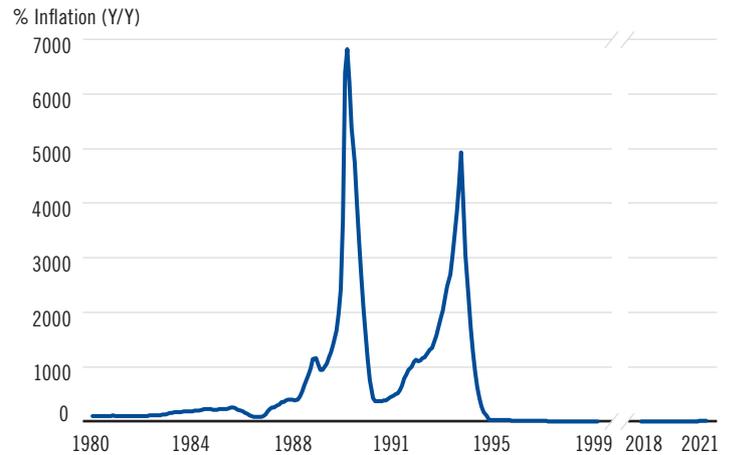
As of September 2021



Sources: Bloomberg, Japan's Ministry of Internal Affairs and Communications. Important data provider notices and terms available at www.franklintempletondatasources.com.

Exhibit 19: Brazil—Headline inflation since 1980

As of September 2021



Sources: Bloomberg, Brazilian Institute of Geography and Statistics (IBGE). Important data provider notices and terms available at www.franklintempletondatasources.com.

By contrast, many developed markets align more toward Japan on the factors of demographics, globalization, advanced technology and recent decades of consistently low inflation expectations. Additionally, stronger monetary policy credibility in advanced economies typically anchors inflation expectations around a moderate, stable trend. However, even as economies are recovering, macro policies have remained highly supportive, fueling aggregate demand growth at a faster pace than supply can catch up, thereby generating price pressures. It remains a question as to how much stimulus an advanced country can tolerate before inflation expectations unanchor.

2. What could go wrong?

In this section, we explore the risk factors that could enable high inflation to persist and/or drive inflation higher in the future. Here we see many of the counterarguments to the transitory inflation view. We specifically investigate how price spikes may affect price formation, how inflation expectations can be shaped by near-term price changes, how wage/price spirals can ensue, whether there are permanent structural changes in the labor market due to COVID-19, how the demand side creates and maintains price pressures, the potential impacts of surging house prices on rental prices, and the risks for inflation expectations becoming unanchored by expansive fiscal policy and loose monetary policy.

While we see currently high inflation driven by narrow factors, many of the aforementioned risks merit ongoing attention as conditions continue to evolve and shift. Each of the measures and channels reviewed in this section bear monitoring as their risks have moderately increased in recent months.

Are the price spikes contaminating price formation?

If price spikes become entrenched, other price setters would take the opportunity to increase their own prices. Thus inflation would no longer be driven by a few sectors, as they currently are, but would instead become more embedded throughout the consumption basket.

One way to measure the breadth of inflationary pressures is to look at median or trimmed-mean inflation measures. These measures eliminate the most volatile components each month (both adding or detracting from inflation) to provide a sense for how the middle of the price distribution is changing. Economic research has shown that these statistical measures are somewhat better at predicting future inflationary trends than traditional core measures that simply exclude products on a categorical basis (like food and energy).

For CPI, the Cleveland Fed produces a trimmed mean and a median measure of inflation (Exhibit 20). For personal consumption expenditures (PCE), the Dallas Fed produces a trimmed mean measure (Exhibit 21). The charts show that statistical measures of underlying inflation have increased, but not as much as the core measures. The trimmed mean CPI inflation figure reached 3.5% in September 2021, its highest level since the GFC era in 2008. However, CPI median and PCE trimmed mean are not well above recent highs.

To evaluate whether inflationary pressures are broadening, we also look at both survey-based measures of inflation (like the Michigan Consumer Survey and the Survey of Professional Forecasters) and market-based measures (like the five-year-forward breakeven inflation rates). While short-term consumer inflation expectations have jumped, medium-term forecasts have increased to a smaller degree and are largely within their

TRIMMED MEAN INFLATION MEASURES SUGGEST A MORE STABLE UNDERLYING INFLATIONARY ENVIRONMENT

Exhibit 20: US Core CPI with trimmed mean and median adjustments

As of September 2021



Sources: BLS, Federal Reserve Bank of Cleveland.

Exhibit 21: US Core PCE with trimmed mean adjustment

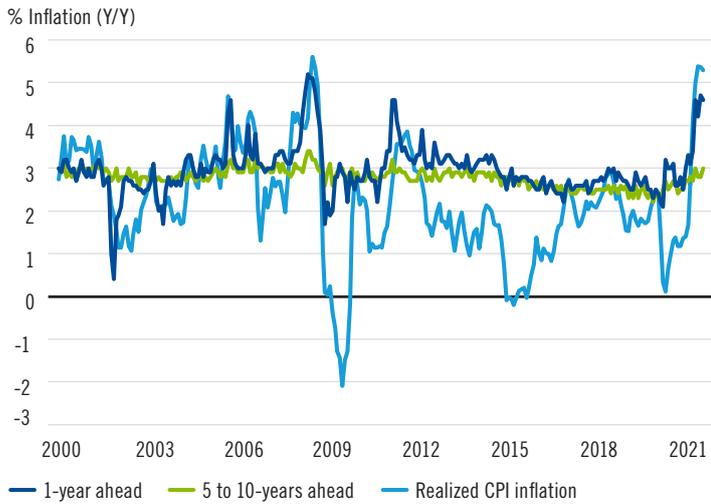
As of August 2021



Sources: BEA, Federal Reserve Bank of Dallas.

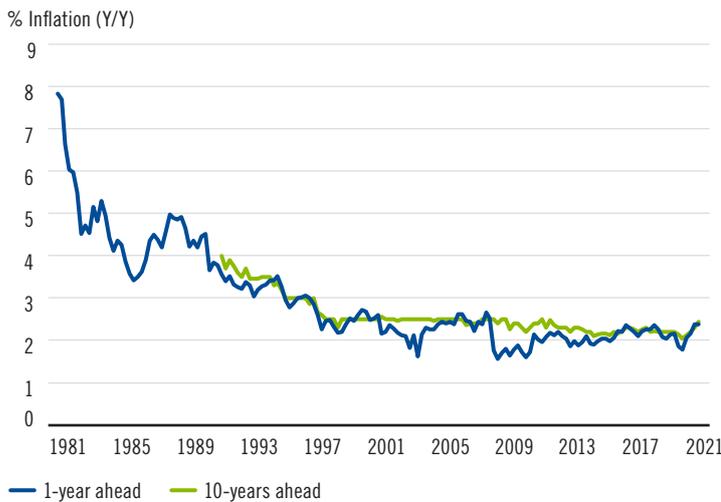
SURVEY-BASED INDICATORS OF NEAR-TERM INFLATION EXPECTATIONS ARE HISTORICALLY HIGH, WHILE MARKET-BASED MEASURES APPEAR MORE CONTAINED

Exhibit 22: University of Michigan survey of inflation expectations
As of August 2021



Sources: University of Michigan, BLS.

Exhibit 24: Philadelphia Fed survey of professional forecasters: inflation expectations
As of August 2021

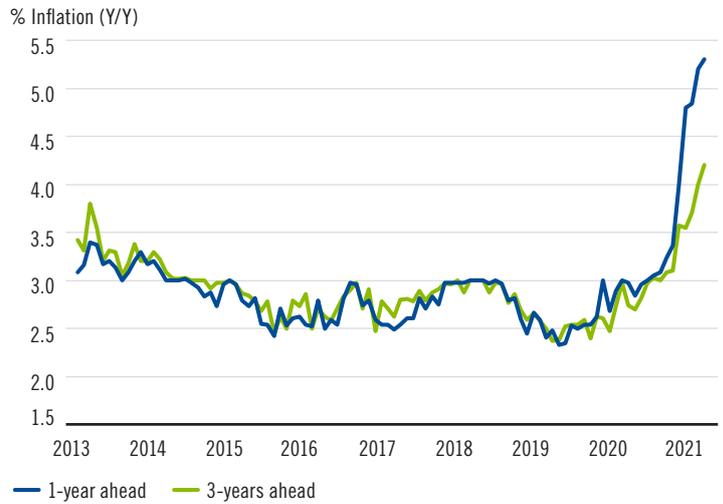


Source: Federal Reserve Bank of Philadelphia.

recent historical trend. Professional forecasters are more sanguine regarding inflation, and a similar characterization applies to market-based measures.

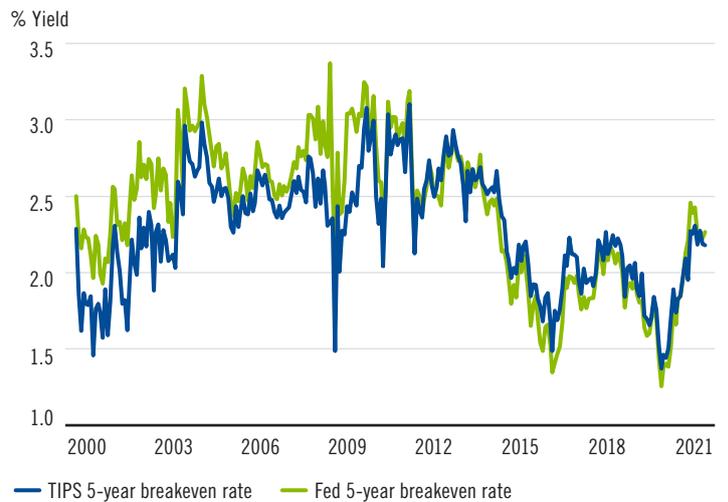
So, inflation expectations are currently anchored. However, there is a risk that as inflationary pressures increase so much, even on a short-term basis, they may have an increased role in the formation of expectations. On the concerning side, a recent Chicago Fed study³ found that inflation expectations have become more sensitive to short-term dynamics, indicating that near-term trends have the potential to alter longer-run inflation expectations, increasing the risk that expectations become unmoored.

Exhibit 23: NY Fed survey of consumer expectations—inflation
As of September 2021



Source: Federal Reserve Bank of New York.

Exhibit 25: Five-year breakeven rate on Treasury Inflation Protected Securities (TIPS)
As of September 2021



Sources: Bloomberg, Federal Reserve. Important data provider notices and terms available at www.franklintempletondatasources.com.

Risk of a wage/price spiral

As we learned from the 1970s, inflation expectations and wage growth can create a spiral dynamic. Workers demand higher wages to compensate for expected losses in purchasing power. The higher their wage demands, the higher the cost of production employers face. Unless higher costs are offset by higher productivity, these conditions put upward pressure on actual inflation. This cycle can become self-sustaining. In other words, expected inflation leads to higher ex-post inflation through the wage-setting mechanism.

Brad De Long (1997)⁴ explains that an economic boom in the 1960s led to a persistent rate of nominal wage growth that, coupled with a productivity slowdown and oil price shocks, fueled inflation in the subsequent decade.

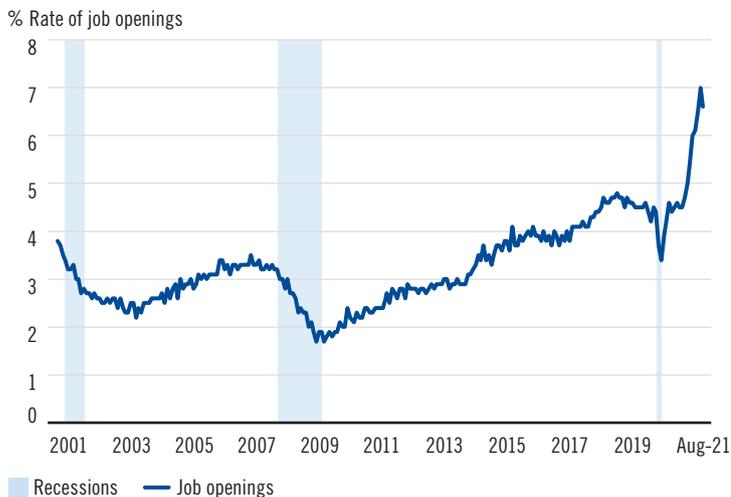
Looking at current conditions, the US unemployment rate remains elevated while firms are also reporting widespread difficulties in hiring qualified employees. The job opening rate is at a historical high (Exhibit 26). Small businesses responding to the National Federation of Independent Business (NFIB) survey report difficulty finding employees (Exhibit 27). Employees also report that job opportunities remain plentiful in The Conference Board's consumer survey (Exhibit 29).

In this environment, firms are increasingly boosting wages to attract qualified employees (Exhibit 30). However, when compared to the 1970s, the current labor market structure has some distinct differences. First, at an aggregate level, average hourly earnings paid to all employees have accelerated in nominal terms, but not enough to keep up with inflation. Moreover, after accounting for the massive composition changes that have hit the labor market, one does not find that wages are accelerating. Second, labor productivity is currently accelerating; it was decelerating heading into the 1970s.

JOB OPENINGS AND HARD TO FILL JOBS ARE HISTORICALLY HIGH

Exhibit 26: Job openings rate

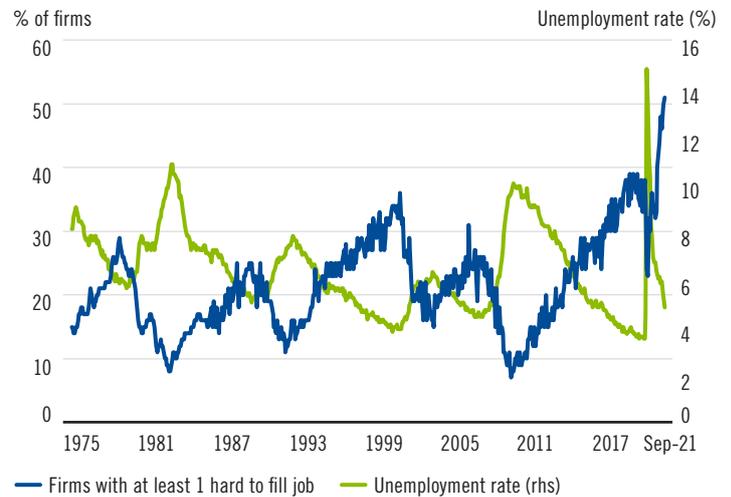
As of August 2021



Sources: BLS, National Bureau of Economic Research.

Exhibit 27: Hard to fill jobs and the unemployment rate

As of September 2021

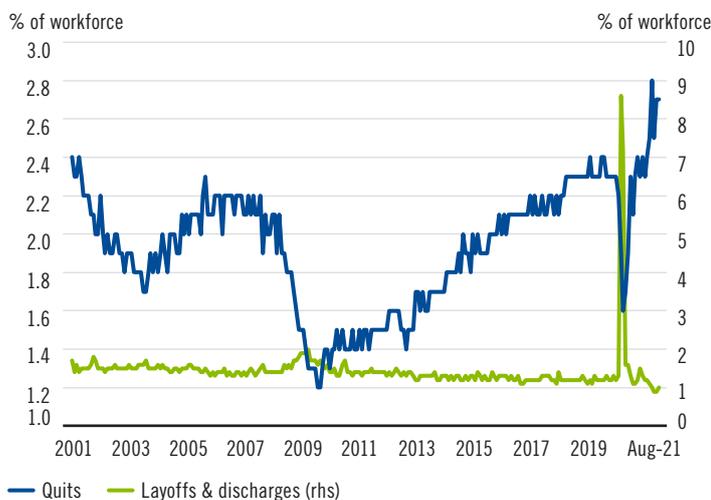


Sources: National Federal of Independent Businesses, BLS.

QUIT RATES ARE ELEVATED AND JOB OPPORTUNITIES ARE PLENTIFUL

Exhibit 28: Percent of quits and percent of layoffs and discharges

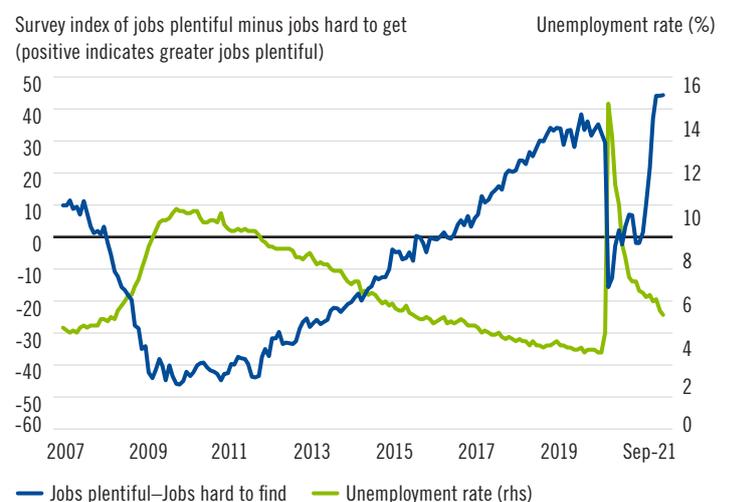
As of August 2021



Source: BLS.

Exhibit 29: The Conference Board consumer confidence survey—Job market prospects

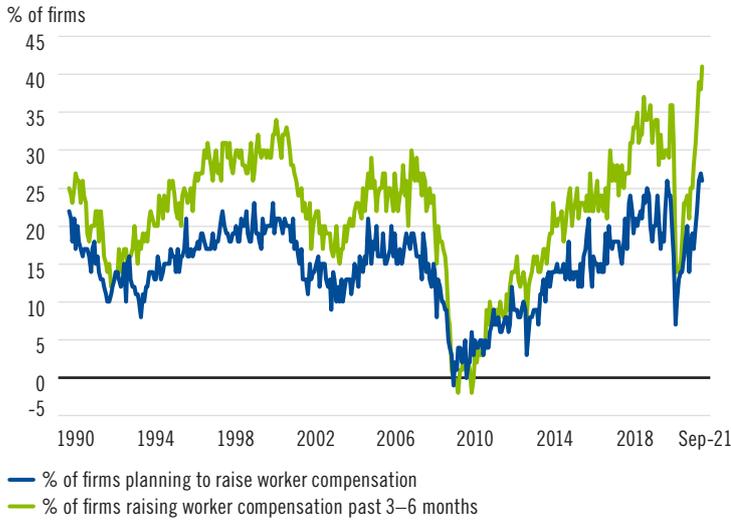
As of September 2021



Sources: The Conference Board, BLS.

WAGES HAVE INCREASED, BUT NOT IN REAL TERMS AND DO NOT APPEAR TO BE ACCELERATING

Exhibit 30: Percent of firms that have or plan to raise worker compensation
as of September 2021



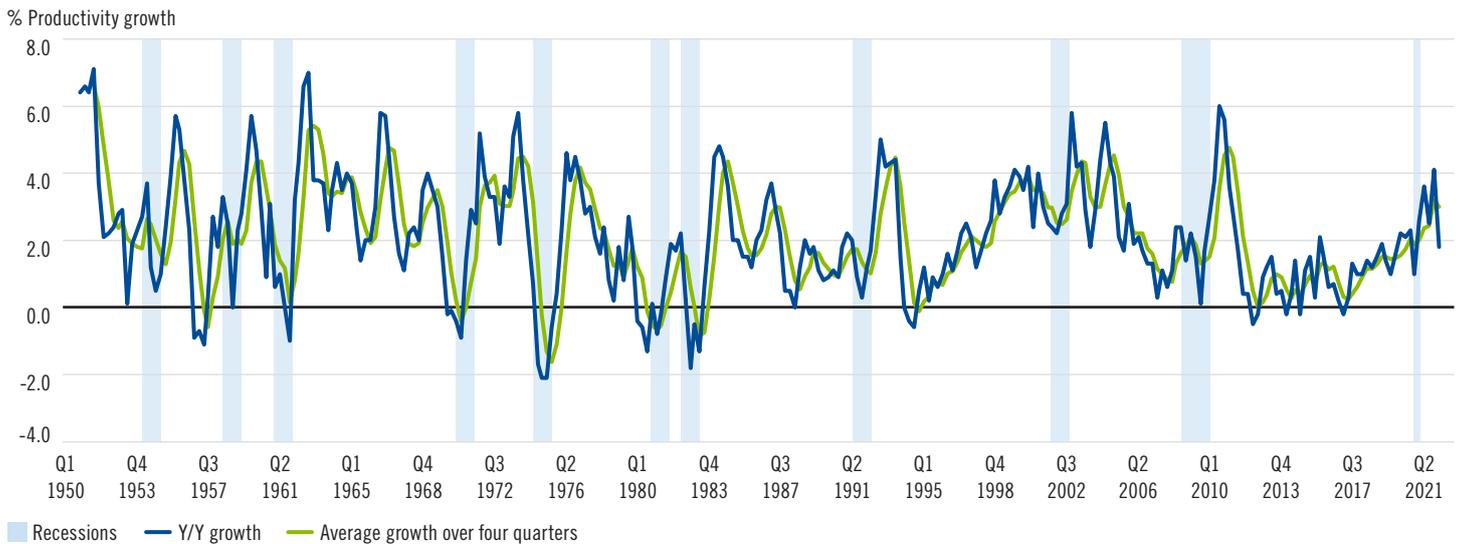
Source: National Federal of Independent Businesses.

Exhibit 31: Atlanta fed wage tracker
As of September 2021



Source: Federal Reserve Bank of Atlanta.

Exhibit 32: Productivity growth in non farm business sector
As of second quarter 2021



Sources: BLS, National Bureau of Economic Research.

Third, there is evidence the labor market has structurally changed due to the pandemic. Beyond people staying out of the labor market because of temporary unemployment benefit extensions and increases in benefits, it appears that a sizable number of people may have retired early. Others may have abandoned old careers.⁵

A recent Fed paper titled “Economic Well-Being of U.S. Households in 2020”⁶ finds that “A sizeable share of recent retirees indicated that COVID-19 was a factor in their retirement decision. Twenty-nine percent of adults who retired in the past year said factors related to COVID-19 contributed to when

they retired. Compared to other retirees, recent retirees whose retirement decision was related to COVID-19 were more likely to say they retired because they were forced to do so or work was not available, or they did not like their work, or they needed to care for family members. They were less likely to say they retired because they reached a normal retirement age.”

If a sizable share of the older population remains out of the labor market because of COVID-19, there would be a reduction in the pool of available employees who can be drawn back into the labor market without raising wages significantly. The participation rate of those 55 and over has dropped by about 1.5

percentage points since the beginning of the pandemic, while the participation rate during the GFC and prior recessions was previously unaffected (Exhibit 33).

Of course, one reason could be that COVID-19 is particularly impactful on older populations and that once the pandemic ends, those workers may return to work. However, we know that once workers leave the work force for an extended period they have a harder time rejoining the work force. Moreover, it is also very possible that COVID-19 may become endemic and thus permanently lower the participation rate for older adults.

Fourth, immigration, both documented and undocumented, remains at historical lows. This is due to health care restrictions at the border and changes in policy implemented over the past five years. In 2019, the number of persons obtaining lawful permanent resident status declined to its lowest level since 2014.⁷ In 2019, increased interdiction boosted the number of persons apprehended for immigration violations to their highest level since 2008.⁸

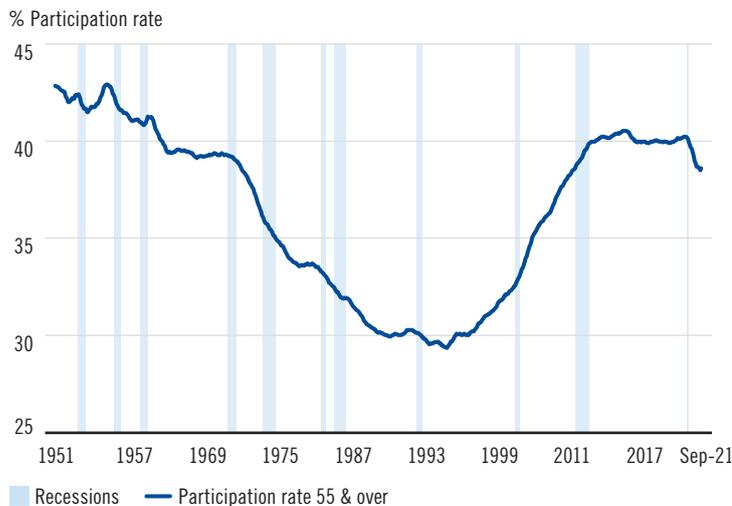
The role of demand side pressures on inflation

The divergence in the recent recovery paths between Europe and the United States illustrates the role that resurging demand plays in inflationary pressures. Goods demand has recovered much more quickly in the US compared to other countries, perhaps because of the more sizable support from direct cash transfers to households. This effect has pushed inflation higher in the US than in other advanced economies.

THE JOB PARTICIPATION RATE FOR WORKERS AGED 55 AND OVER IS DECLINING

Exhibit 33: Labor participation rate for workers 55 years of age and over

As of September 2021



Sources: BLS, National Bureau of Economic Research.

Exhibit 35 (on the next page) shows the relationship between vehicle prices and vehicle sales, with the US in the upper right quadrant, reflecting high levels of both. US demand recovered fast early in 2021, supported by significant government policy supports and easing restrictions. By June 2021, the strong domestic demand boosted auto sales and prices more than other countries experiencing weaker demand recoveries.⁹ General retail volume is seeing a similar dynamic, with the US recovering at a stronger pace than Europe (Exhibit 36 on the next page). All else held constant, this effect is likely to produce higher price pressures in the US than in Europe.

Additional risks can be seen in the housing market, where housing prices continue to accelerate, and rents are beginning to pick up. As we know, housing prices are not part of the CPI basket, as economists treat housing as an investment. However, the cost of obtaining housing services each month, namely rent of primary residences and the owners' equivalent rents, is included in the CPI basket. The rent components represent a large share of the consumption basket (32.6%). Accelerating rents would manifest in the inflation figures.

To illustrate this point, Exhibit 38 (on the next page) shows the current price-to-rent ratio is close to the ratio in 2005 and 23.4% above its 2000–2020 average. We all remember that the eventual adjustment to the price-rent ratio after the housing boom of 2004–2007 occurred through a downward correction to housing prices during the GFC. If the adjustment this time is entirely through an increase in rent prices rising to narrow the

TIGHT IMMIGRATION POLICIES HAVE REDUCED AVAILABLE LABOR

Exhibit 34: US green cards issued

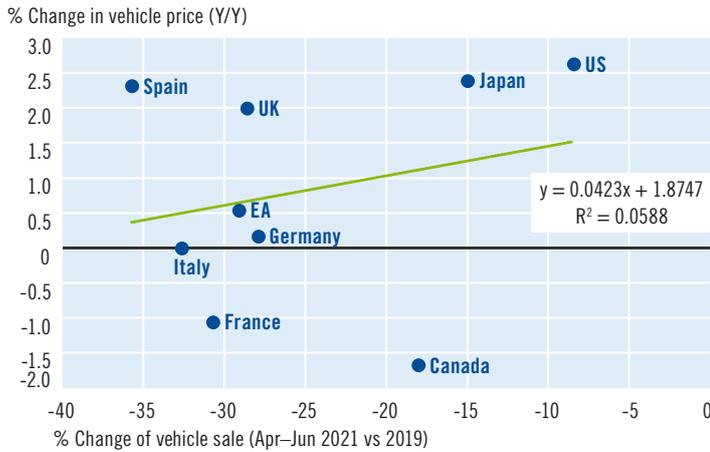
Fiscal year 2016–fiscal year 2020



Sources: Department of Homeland Security. Fiscal year ends September 30.

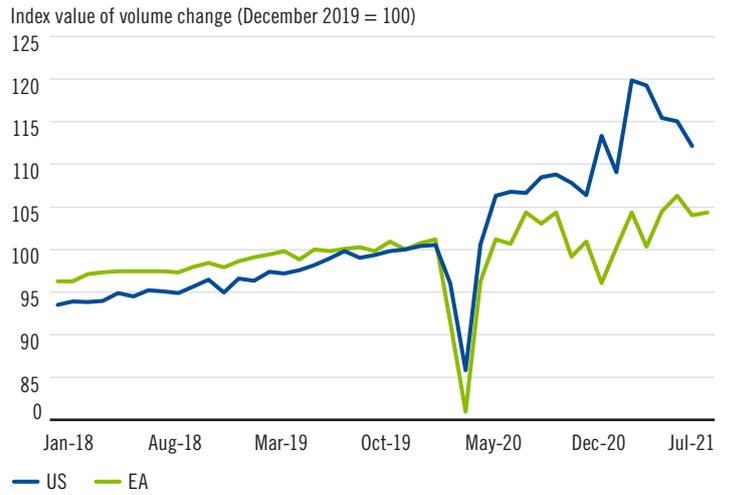
THE US HAS SEEN HIGHER LEVELS OF DEMAND THAN THE EURO AREA IN THE AUTO AND RETAIL SECTORS

Exhibit 35: Change in vehicle sales against change in vehicle price, by country
As of June 2021



Source: Bloomberg. Important data provider notices and terms available at www.franklintempletondatasources.com.

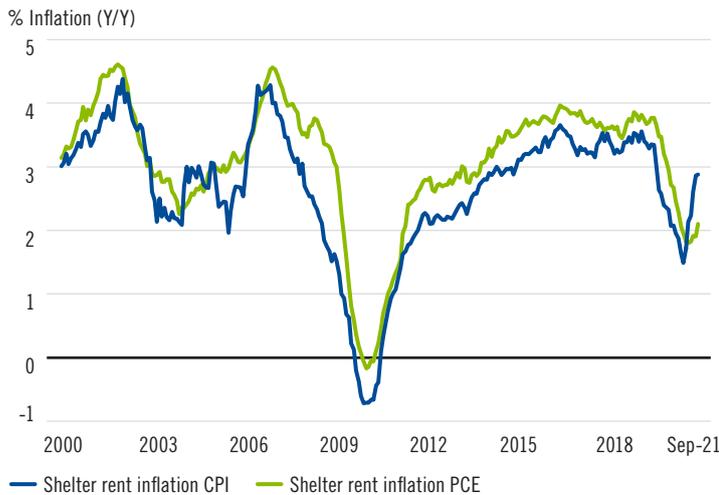
Exhibit 36: Comparison of US and Euro area retail volume
As of August 2021



Sources: US Census Bureau, Eurostat.

RENT HAS NOT RISEN IN STEP WITH SURGING HOUSE PRICES, BUT HAS BEGUN TO TREND HIGHER

Exhibit 37: Shelter rent inflation (CPI & PCE)
As of September 2021

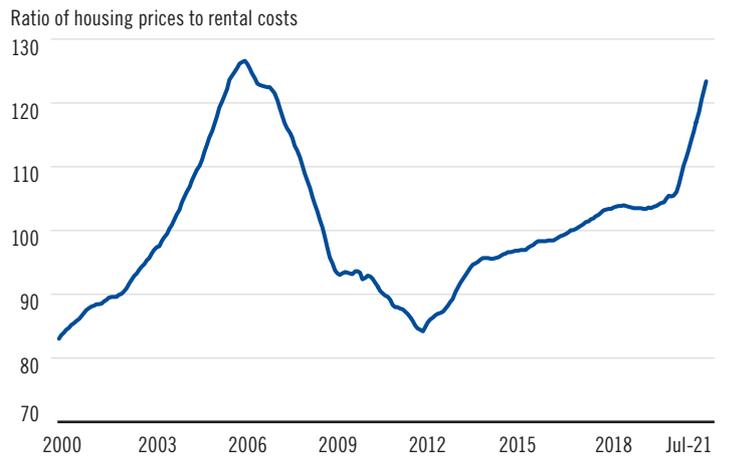


Sources: BLS, BEA.

gap with house prices, all else held constant, then the CPI would increase by 7.5 percentage points (pp). The faster housing prices continue to outpace rental rates, the larger the adjustment would have to be made to bring the price/rental relationship back in line with its historical average.

However, there continues to be ongoing debate as to whether housing markets are in a bubble. While it remains a risk that house prices could moderate, household leverage has not been rising as we saw during the housing boom before the GFC in 2008. Healthier household finances combined with a robust economic recovery should bolster current pricing.

Exhibit 38: Ratio of housing prices to rental costs
As of July 2021



Sources: TGM, Standard & Poor's Case-Shiller House Price Index, BLS. Indexes are unmanaged, and one cannot invest directly in an index. They do not include fees, expenses or sales charges.

The greater risk, in our assessment, is that rents will narrow the gap with house prices as rents rise, rather than by house prices declining. The demand for rentals is likely to be further amplified by workers returning to offices.

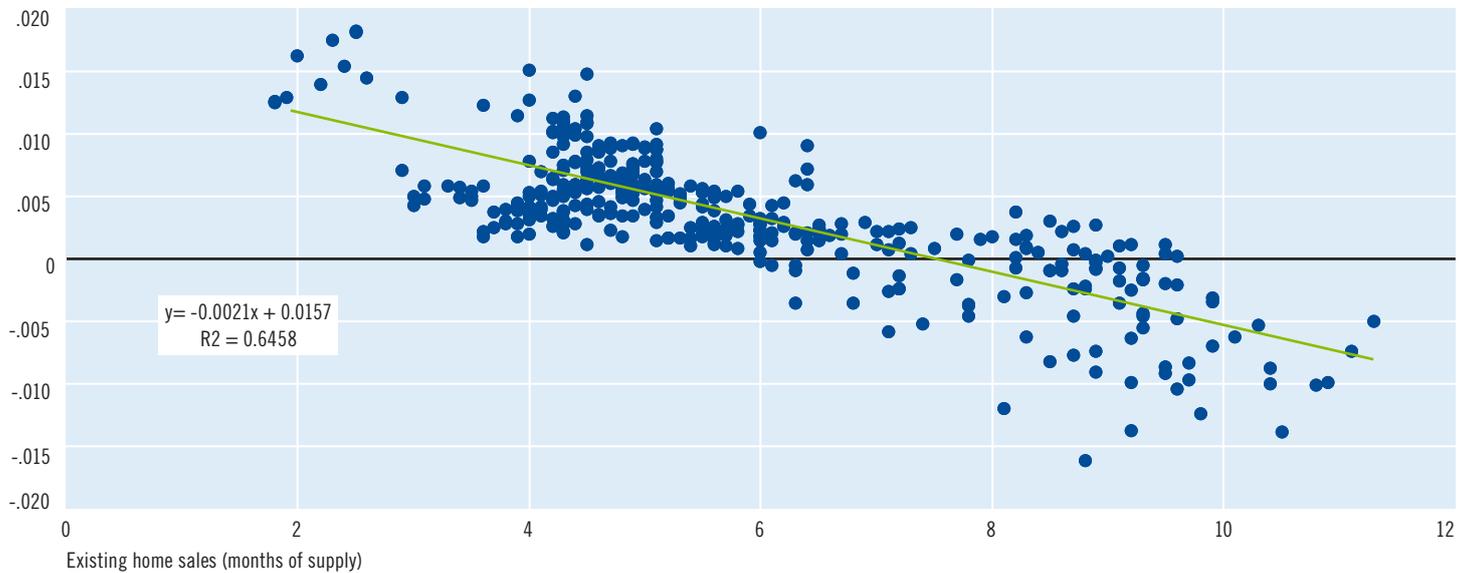
Part of the supply and demand imbalance that has been fueling rising house prices in the US is driven by millennials seeking entry level housing amid low inventories for those types of homes. House construction has been focused on larger houses in recent years, not entry level homes.¹⁰

HOUSING INVENTORIES ARE HISTORICALLY LOW AMID STRONG DEMAND, DRIVING PRICES HIGHER

Exhibit 39: House prices vs. housing inventory

As of 1990–2021

S&P Case Schiller National House Price Index (M/M)



Sources: TGM, Standard & Poor's Case-Shiller House Price Index, National Association of Realtors. Indexes are unmanaged, and one cannot invest directly in an index. They do not include fees, expenses or sales charges.

Inflation expectations could become unanchored due to expansive fiscal policy support

Another lesson from the 1970s is that expansionary fiscal and monetary policies can have a significant influence on inflation expectations. Massive fiscal stimulus during the Johnson administration's Great Society spending, combined with Vietnam War spending, created demand-pull inflation pressures. The arrival of oil shocks in the 1970s further compounded the problem through cost-push inflation pressures.

Conditions in 2021 are notably different than they were in the 1970s on several fronts. However, there are some similar concerns over the potential for demand-pull inflation from massive stimulus programs. Excessive monetary accommodation and ongoing fiscal stimulus, compounded with surging growth, present inflationary risks that bear monitoring. The true test will be whether these factors become persistent enough to feed into longer-term inflation expectations.

All in all, the federal government has provided more than US\$5.2 trillion in fiscal support in response to the pandemic.¹¹ Together with the drop in nominal GDP, this fiscal support drove the federal deficit to rise by over 10 percentage points (pps) to 14.9% of GDP in fiscal-year 2020. The deficit is expected to remain quite wide in 2021, decreasing to only 13.4% of GDP. During the GFC, the deficit did not surpass 10% of GDP. The Congressional Budget Office estimates that fiscal spending pushed federal debt held by the public to over

100% of GDP in 2020 and has forecasted it to rise to 102.7% of GDP in 2021, almost 20 pp higher than it forecasted in August 2019. The Biden administration has proposed more than US\$5 trillion in additional spending over the next decade in its fiscal-year 2022 budget proposal.¹²

Is expansive monetary policy driving prices through money or credit channels?

The Fed continues to provide extremely supportive stimulus to the economy even as inflation has overshot the 2% inflation target and the unemployment rate continues to trend toward its pre-pandemic lows. The Fed both reduced the policy rate to its lower bound and expanded the money base through its latest quantitative easing program. However, there is little evidence that banks are expanding their balance sheets and using this easy money. Indeed, while credit jumped initially after the COVID-19 lockdowns, credit has subsequently contracted. The overall rise was driven by an increase in commercial and industrial loans, and not for other sectors. This likely reflects precautionary credit lines taken out by firms at the beginning of the pandemic in anticipation of possible disruptions to financial markets. As those financial disruptions did not materialize, firms closed the credit lines.

We are also seeing banks increasingly hold US Treasury assets on their balance sheets (note the rise in total bank credit includes holdings of securities, while the level of loans and leases has been much more stable). The risk would be that

banks change the composition of their balance sheet toward loans, which would boost excessive credit and money growth, stimulating inflation.

Currently, monetary velocity, meaning the relationship between the stock of money and nominal economic activity, remains on a downward trend. So, even as the monetary base and broad money supply (M2) have accelerated, price growth has remained muted. If velocity were to rebound unexpectedly, broad money growth could rapidly fuel inflation.

Economists are split over the risks of inflation from current monetary and fiscal policy stances

A recent survey of 38 academic economists asked whether they agreed or disagreed with the statement: “The current combination of US fiscal and monetary policy poses a serious risk of prolonged higher inflation.” There were strikingly even splits among the responses, with 33% agreeing with the statement, 26% disagreeing, 4% strongly disagreeing and 36% saying they were uncertain.¹³

Many economists are not overly concerned about inflation at the moment, but believe that easy monetary and fiscal policies could lead to inflation expectations becoming unanchored. Moreover, some studies have found that the most important driver of inflation (long-run inflation expectations) has recently become more sensitive to current inflation dynamics. Given the rise in price pressures, this response effect would increase the risks for a faster increase in long-run inflation expectations that may, in turn, drive price formation toward a higher inflationary environment.

An important part of determining whether certain forces will in fact alter inflation expectations is identifying what specifically drives inflation expectations. A recent University of Chicago paper¹⁴ explores the relationship between fiscal policy and inflation expectations using a randomized control trial. The researchers found that the debt trend, not the current levels of deficits and debt, affects household inflation expectations. In short, a persistently worsening fiscal outlook, with rising debt levels into the future, tends to align with rising inflation expectations. This may be due to households anticipating some monetization of future debt as part of the solution to the growing costs of additional debt.

EVEN AS THE MONETARY BASE EXPANDS, MONEY VELOCITY HAS REMAINED ON A DOWNWARD TREND

Exhibit 40: Monetary aggregates
As of second quarter 2021

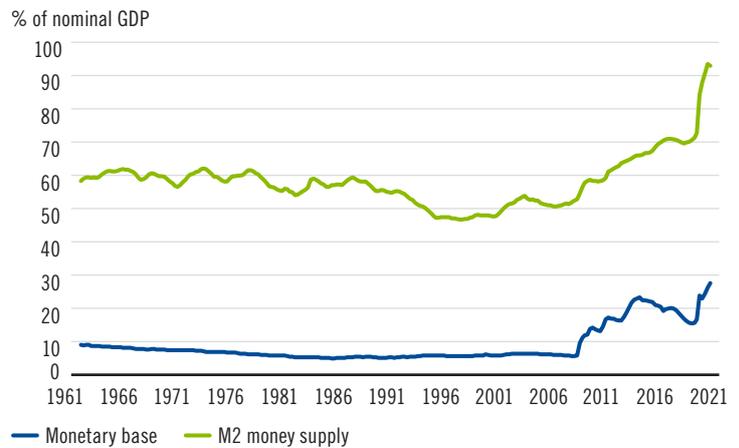


Exhibit 41: Bank credit growth
As of second quarter 2021

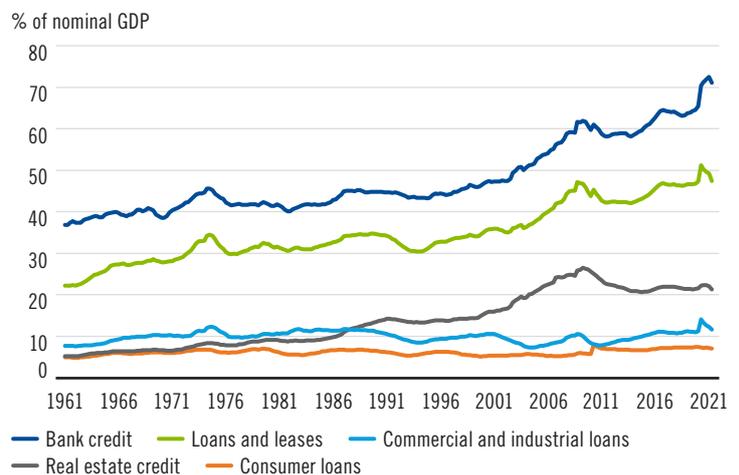
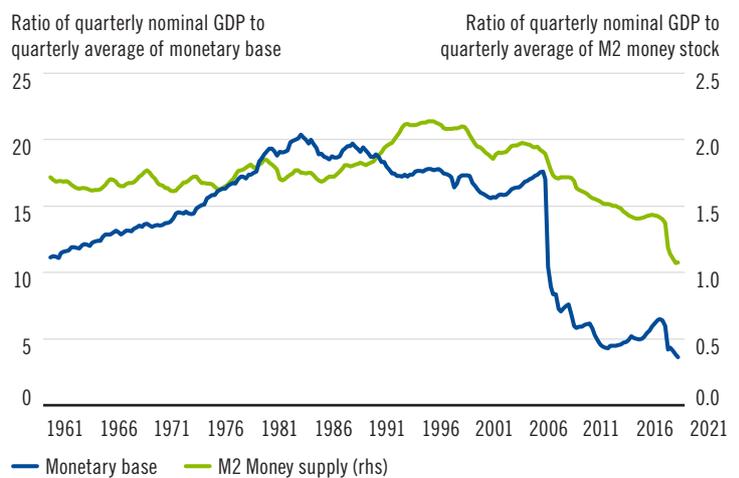


Exhibit 42: Monetary velocity
As of second quarter 2021



Sources: Federal Reserve, BEA.

Conclusion

The question remains whether inflation risks for the US tilt toward a low and stable inflation rate, as the Fed seeks to achieve, or whether there are risks that inflationary dynamics become contaminated, pushing trend inflation to a significantly higher level for an extended period. Many may indicate that the post-GFC period was characterized by inflation significantly below target. However, current conditions are quite different, and the Fed will need to pay increasing attention to the possibility that inflation may become entrenched at a higher level. We don't yet know what path inflation will follow, but we have identified several of the factors that bear monitoring that will help us determine whether the current inflationary

spike is temporary or permanent. Certainly, central banks around the world have become increasingly concerned about increasing inflation pressures and have begun to hike policy rates, some quite aggressively. We are embarking on what may become the most highly synchronized global monetary tightening cycle on record, quickly following the extraordinary, highly correlated global easing cycle in 2020. There will be significant implications for financial assets as central banks seek to normalize policy and/or address inflationary pressures. It remains to be seen whether inflation ultimately moderates amid the tightening cycles, or whether inflation expectations become unmoored.

SEVERAL COUNTRIES HAVE PIVOTED TO RATE HIKES IN 2021

Exhibit 43: Change in monetary policy rate since beginning of 2021 as of October 2021



Source: Bloomberg. Important data provider notices and terms available at www.franklintempletondatasources.com.

Endnotes

1. Source: The White House blog. Historical Parallels to Today's Inflationary Episode, July 6, 2021.
2. Source: Blume Global. The History and Evolution of the Global Supply Chain.
3. Source: Federal Reserve Bank of Chicago. Are Long-run Inflation Expectations Well Anchored? July 2021.
4. Source: University of Chicago Press. Reducing Inflation: Motivation and Strategy, January 1997.
5. Sources: *The Washington Post*, "Nearly a third of U.S. workers under 40 considered changing careers during the pandemic," August 16, 2021. McKinsey Global Institute. The future of work after COVID-19, February 18, 2021.
6. Source: The Federal Reserve Board. Report on the Economic Well-Being of U.S. Households in 2020, May 2021.
7. Source: The Department of Homeland Security. Yearbook 2019. Table 1. Persons Obtaining Lawful Permanent Resident Status: Fiscal Years 1820 to 2019.
8. Source: Pew Research Center. Migrant encounters at U.S.-Mexico border are at a 21-year high, August 13, 2021.
9. Beginning in early summer, supply disruptions in the auto sector have become so severe that vehicle sales dropped again well below the pre-pandemic trend.
10. Source: Freddie Mac. Housing Supply: A Growing Deficit, May 7, 2021.
11. Source: Brookings. The fiscal policy response to the pandemic, March 24, 2021.
12. Source: Committee for a Responsible Federal Budget. Breaking Down the Proposals in the President's FY 2022 Budget, June 4, 2021.
13. Source: Chicago Booth. The Initiative on Global Markets: Overheating, June 8, 2021.
14. Source: Becker Friedman Institute, The University of Chicago. Fiscal Policy and Households' Inflation Expectations: Evidence from a Randomized Control Trial, February 2021.

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