

Demary, Markus; Hüther, Michael

**Research Report**

## Global inflation: Low for long or higher for longer?

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# **IW-Report 12/2021**

## **Global Inflation: Low for Long or Higher for Longer?**

Markus Demary / Michael Hüther

Köln, 08.04.2021

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**JEL-Classification:**

E31 – Price level, inflation, deflation

E52 – Monetary policy

## Summary

Inflation has started to increase, and the return of inflation comes at a time in which economies begin to recover from pandemic-induced and lockdown-induced recessions. This raises questions about how much and how long inflation will go up as well as about whether central banks have to step-up against inflation at the cost of slowing down the economic recovery. Has “low for long” turned into “higher for longer”?

We look at the different possible factors that could drive inflation, like pandemic- and lockdown-induced pent-up demand, price-wage-spirals, fiscal policy and other relevant factors. We conclude from our analysis that inflation could possibly rise in the short-term, but that inflation will return to low rates in the medium-term. While pent-up demand will result in higher prices, the inflation effect will only be transitory and moreover concentrated on services related to tourism and accommodation and be absent in other sectors where digital alternatives leading to more competition are available.

Even in the case in which the combination of accommodative monetary policy and expansionary fiscal policy would close the output gap and drive the economy towards a state of overheating, we expect a low inflationary effect because of the flat Phillips-curve.

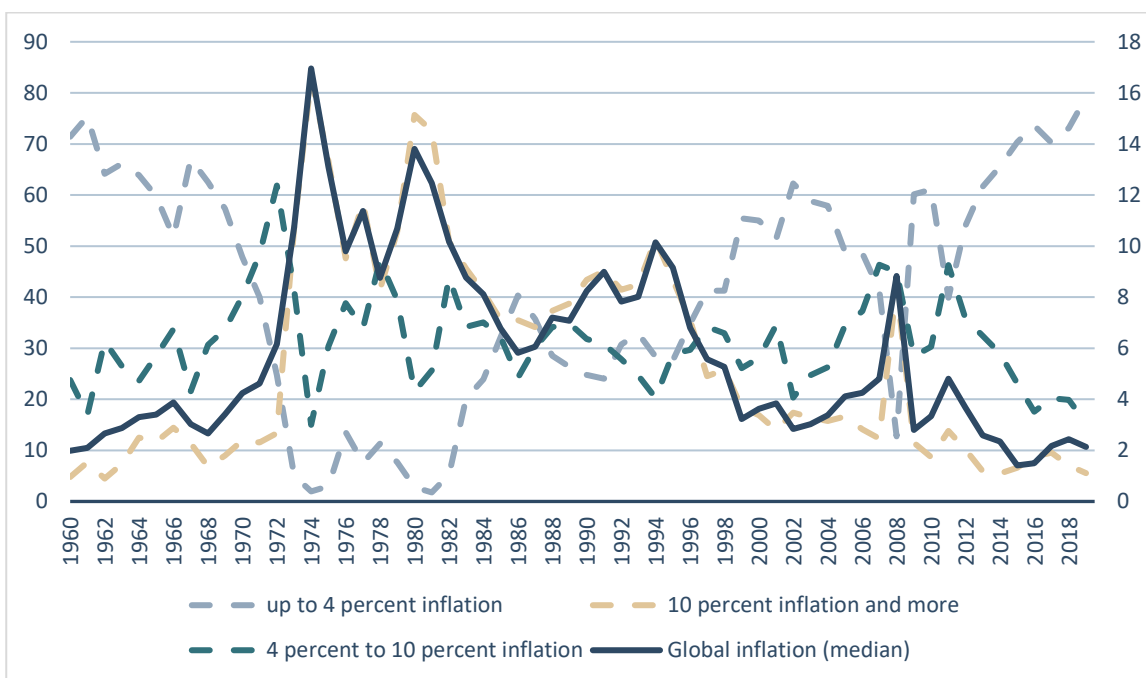
Thus, we do not expect any trade-offs for central banks between fighting inflation and supporting the economies to grow and to deleverage. Instead, we see a welcomed return of inflation towards its target value accompanied by an economic recovery that enables central banks to end their asset purchasing programmes and their negative interest rate policies in a natural way, that means we expect higher interest rates without risks to the economic recovery.

# 1 Low for long or higher for longer?

Inflation was high and volatile in the past. Global inflation, measured by the median over 215 countries, increased first gradually and then accelerated from 2.0 percent in 1960 to 13.8 percent in 1980 and declined to 3.2 percent in 1999. Global inflation hiked during the Global Financial Crisis, but it now stays at around 2 percent globally. Not only the inflation targeting countries, but also former high inflation countries contributed to the decline in inflation, which can be inferred from the high correlation of global inflation with the share of countries with an inflation rate of 10 percent and more and the negative correlation of global inflation with the share of countries with an inflation rate below 4 percent. The correlation coefficients are 0.98 and -0.95, while there is only a modest correlation of 0.16 with the share of countries with an inflation rate between 4 percent and below 10 percent. Close to 80 percent of the 215 countries have currently an inflation rate below 4 percent, while close to 50 percent have an inflation rate below 2 percent. Low inflation has been the new phenomenon since many years, but the Covid-19 pandemic has raised concerns whether inflation might spike again.

**Figure 1-1: Inflation has stabilized globally**

Consumer price inflation, in percent per year, median over 215 countries (right scale), percentage share of countries with an inflation rate of below 4 percent, between 4 and below 10 percent and 10 percent and above (left scale).



Source: World Bank, own calculations

On the one hand, central banks have gained reputation in preventing inflation. After the two oil price hikes in the 1970ies the consensus shifted to the inflation targeting framework, which intends to stabilize inflation and inflation expectations near a target value of two percent over the medium term. Paul Volcker began toughening the monetary policy of the Federal Reserve, which induced a recession, but afterwards a stabilization of inflation. Other central banks

followed this example and brought inflation successfully down. The successful disinflation during the 1980ies has turned into a fairly robust low inflation phase, especially in the industrialized countries. There was no return to the periods of high and volatile inflation rates. The phenomenon of surprise inflation disappeared. Since the Global Financial Crisis 2008/09 central banks have been challenged by below target inflation and deflation seems to be harder to fight compared to high inflation. On the other hand, central banks have injected lots of liquidity into financial markets leading to low interest rates and high excess reserves on banks' balance sheets. The favourable financing conditions have, however, not led to an inflationary boom yet.

Recently, Lawrence Summers started to argue that the US-stimulus packages which intend to buffer the fallout of the Covid-19 pandemic onto the economy were too ambitious leading to an overheating of the economy and thereby to a return of inflation (Summers, 2021). The question is: Is he right?

When inflation is going to rise economists first look at the underlying factors and whether these lead to a transitory increase in inflation or a persistent one. The inflation effect will be transitory, if the price level shifts upwards and prices will be permanently higher. Such a transitory effect can be caused by an increase in value-added taxes, for example. A persistent inflation effect will arise, however, only if the growth rate of the price level increases permanently. Such a persistent effect can be caused by a price-wage spiral, in which higher prices lead to wage renegotiations and higher wages lead to higher prices and so on. While transitory factors usually do not demand central bank responses, persistent factors do indicate that monetary policy must lean against rising price pressures – regardless of whether the pressure is up or down.

Supply-side factors, like a rise in production costs, often have persistent effects on inflation. Charles Goodhart and Manoj Pradhan argue that the low birth rates of the last cohorts will tighten the labour market permanently leading to higher wage growth and higher inflation in the future (Goodhart/Pradhan, 2020). The same results from a structural change in wage setting because the parties to the collective bargaining agreement are losing influence or immigration increases. In fact, the Phillips curve in Germany has been completely flat for the past decade (Bundesbank, 2016).

But supply-side factors can also lead to transitory increases in inflation, like the pandemic-induced lockdown measures which have forced companies either to close their businesses or to operate under restrictions which have lowered their productivity. For a given demand, these supply-side restrictions lead to higher prices, while prices are expected to normalize once lockdown measures have been absent.

Temporary demand-side effects can lead to a transitory increase in demand and thereby to a short-term increase in inflation. The temporary decrease in the value-added tax in Germany during the pandemic has led to transitory decreases and will lead to increases in the inflation rate as the tax rate is adjusted back to its initial value. Persistent demand-side effects, like a

persistent accommodative monetary policy can lead to higher inflation rates as observed in the 1970ies before central banks switched to inflation targeting.

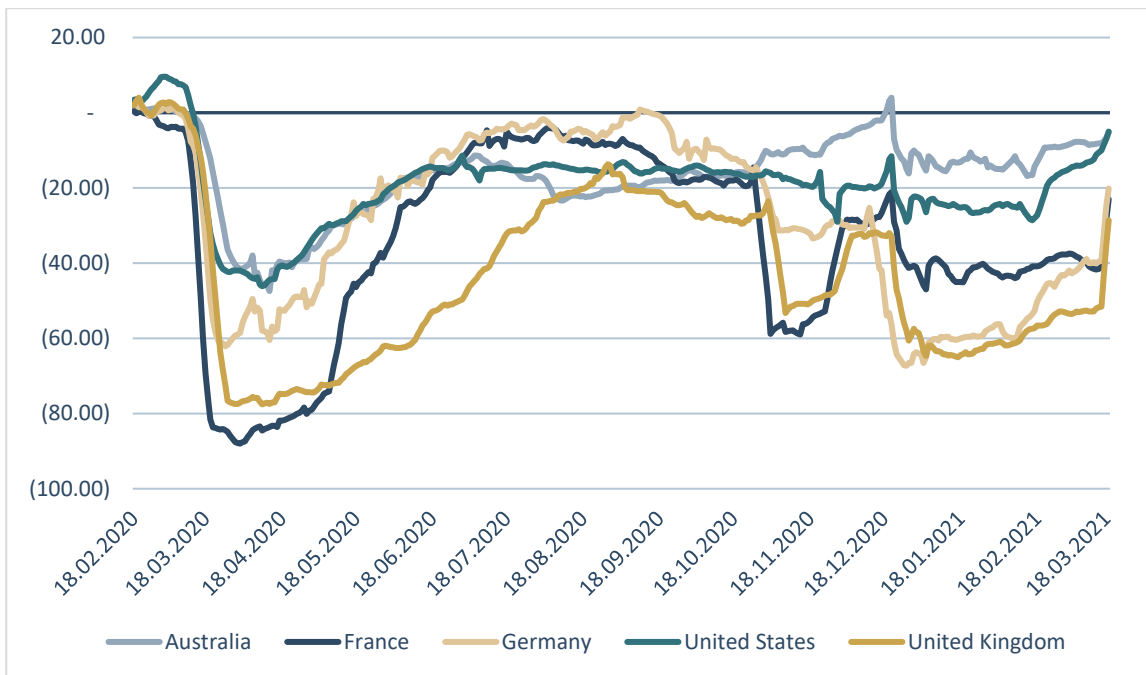
The question is whether the inflation rate in the coming months and years will be driven by transitory factors or by persistent ones. In order to arrive at a conclusion, we will analyze several factors, which could affect the inflation rate in a transitory or a persistent way.

## 2 Pent-up household saving during the lockdowns

The saving rates of the household sector increased sharply in many countries as the pandemic broke out and households either refused to consume goods and services in public or were hindered to consume because of lockdown measures (figure 2-1 and figure 2-2). The higher saving rates could be seen in the data already in the first quarter of 2020, even more pronounced in the second quarter.

**Figure 2-1: Lockdowns reduced retail shopping**

Google mobility, length of stay, moving average



Source: Macrobond, own calculations

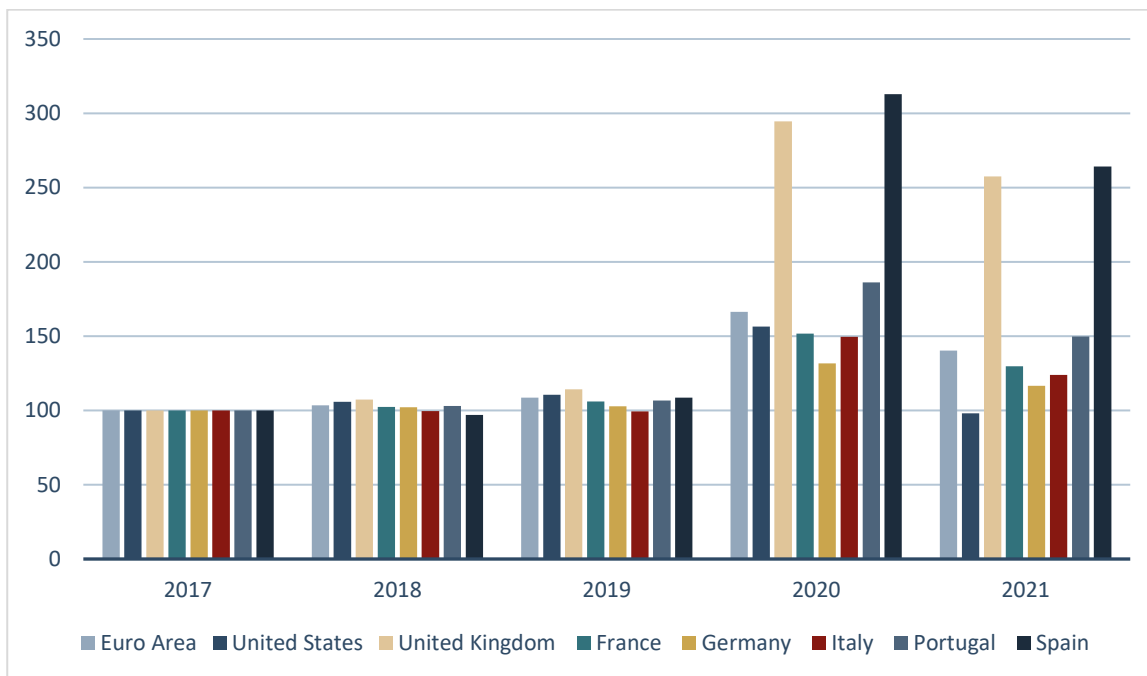
The life-cycle income hypothesis proposed by Franco Modigliani could explain how this forced saving could lead to higher future consumption. Modigliani’s hypothesis states that permanent income is used by households for permanent consumption, while transitory income will be saved (Modigliani, 1975). In the current case, the pandemic and the lockdowns have decreased the permanent consumption of households, like expenditures for holiday travel, restaurant visits and concerts, leading to transitory savings which have strengthened the balance sheets of



many households. While indebted households could also use the additional savings for reducing their debt levels, other households will try to maintain their permanent consumption level, which will result in a higher willingness to pay. As soon as the willingness to pay for travel, restaurant visits, and concerts has increased, companies affected by the lockdown measures can raise prices after the lockdown measures have been loosened. However, this effect on the inflation rate will be only transitory, since it implies a shift in the price level and not a higher growth rate of the price level. In addition to that, this effect only applies to some goods and services, so its effect on the overall inflation rate will be limited.

**Figure 2-2: Lockdowns increased household saving**

Gross household saving, in percent of disposable income, index: 2017 = 100



Source: Macrobond

The size of the effect also depends on the extent to which producers are able to increase prices, when household demand has increased after the pandemic or after the loosening of lockdown measures. After one (and a half) year of pandemic life with several lockdowns in many countries people will probably do a lot of things that they were not able to do during the pandemic months. When cinemas open, people are going to start watching blockbuster movies in cinemas again. If cinemas raise their prices too much, people may tend to watch movies on one of the streaming platforms which are near substitutes to cinemas. Streaming services have increased competition which limits the possibility of cinemas to increase prices. The same would hold for restaurants where delivery services have increased competition and people got used to using these services during the pandemic.

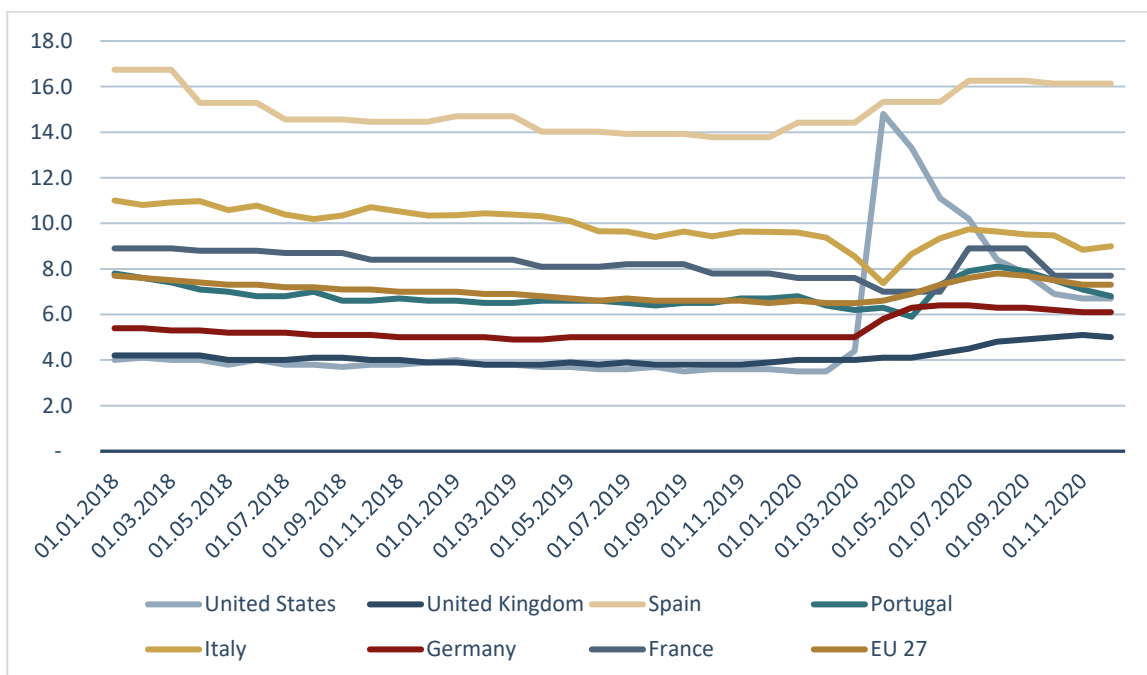
However, there are no substitutes to going on vacation. So, the travel businesses will be in a good position to raise prices when demand increases again but this will be a one-time effect on the price level because demand will normalize in the following years when households have spent their excess savings. Thus, this effect on the inflation rate is expected to be transitory. The temporary restrictions on consumption caused by the Covid-19 containment policies – and thus the increase in savings – will not trigger a permanent inflation effect because the normalization of consumption is followed by an initial post-pandemic overshooting. Thus, we expect the inflation effect to be temporary along the adjustment path in consumption. Taken in and of itself, this does not constitute a new inflation trend or surprise inflation.

### 3 Price-wage spiral during the recovery?

Short-term work was successfully applied by Germany during the Global Financial Crisis and applied on a European level during the Covid-19-crisis. The short-term work lessens the pressures for companies to lay off workers during a recession and it therefore reduces their hiring costs during the recovery phase. Moreover, short-term work prevents the destruction of organizational capital and corporate culture during recessions. The application of short-term work schemes explains the different responses of the labour market between the USA and the European countries. While the unemployment rate skyrocketed in the US, the European counterparts only rose mildly compared to the severity of the crisis (figure 3-1).

**Figure 3-1: Different unemployment responses to pandemic and lockdowns**

Unemployment rate, in percent



Source: Macrobond

Without the short-term work schemes, companies would have to lay off workers during the recession and they would have to compete for new workers in the recovery phase. The competition among employers for new workers could push up wages especially in those segments of the labour market in which skill shortages are common. Companies may increase the prices of their goods and services to compensate for the higher labour costs. Because the higher wage growth gives the workers more financial space to increase their demand, inflation will pick up which leads them to demand higher wages to compensate for higher inflation. This price-wage-spiral can then lead to persistently higher inflation rate. However, the short-term work schemes could have lessened the occurrence of such price-wage-spirals during the recovery phase which makes high permanent inflation less likely.

#### 4 Government spending and the risk of overheating

Lawrence Summers and Olivier Blanchard expect the US government spending programmes in response to Covid-19 to increase the risk of an overheating economy (Summers, 2021; Blanchard, 2021). Governments in all pandemic-hit countries had to increase spending, which, in view of the limited development of production, raises the question of overheating and inflation. Especially Summers expects inflationary pressures from the \$ 1.9 trillion Covid--19 relief plan of the Biden administration by comparing it to the 2009 stimulus package under the Obama administration (Summers, 2021). While the stimulus package under the Obama administration was half the size of the output gap, the Covid-19 relief plan is three times the output gap (Summers, 2021). Moreover, Summers acknowledges that unemployment has already started to fall in contrast to the Great Recession of 2009, monetary conditions are already looser compared to 2009 and that there is a pent-up demand of \$ 1.5 trillion in form of pandemic-related savings.

Sargent (1982) looked at four big inflations and concluded that persistently large deficits lead to inflation, while the inflationary episodes have ended with budgetary reforms. The question is whether Sargent's results also apply to the current situation.

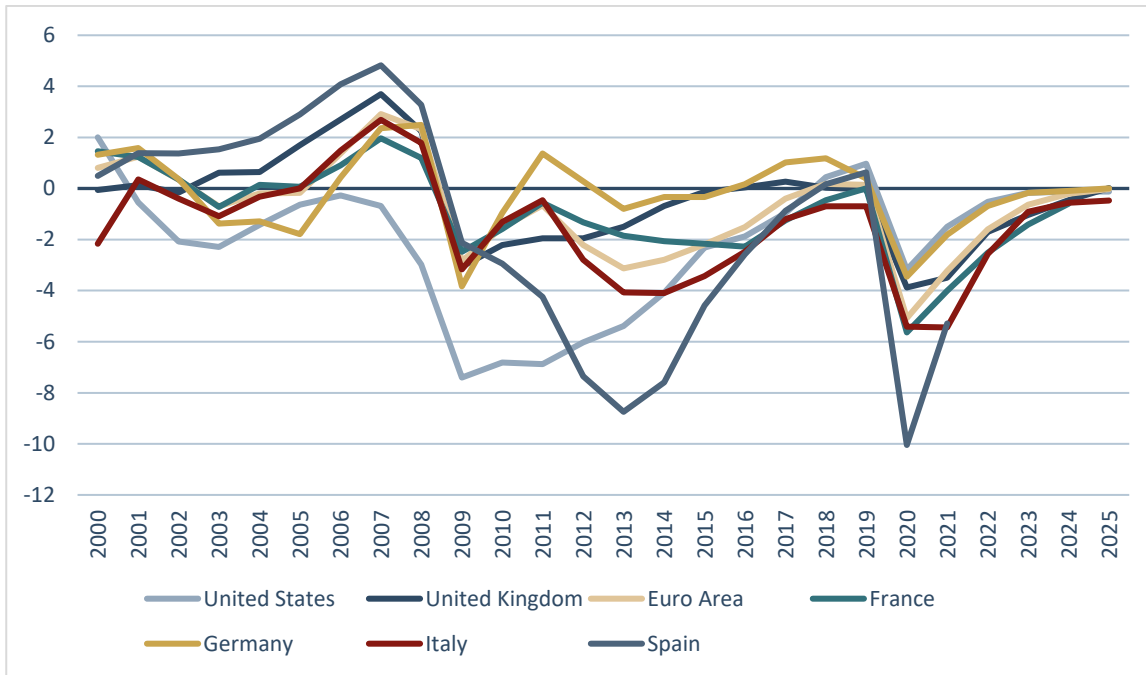
In the current situation, government spending is needed to prevent businesses running into insolvency, to avoid job losses or to support workers who lost their jobs. Thus, by preventing liquidity shortages, e.g. because revenues are smaller than costs or labor income has declined, no additional demand will arise. This is one difference to the scenarios described in Sargent (1982), where expansionary fiscal policy created additional demand. Moreover, it is expected in the current situation that, without government compensation, the high level of uncertainty will trigger investment weakness and widen the demand gap in the short term.

There are also fiscal measures that try to increase demand, like the temporary tax-cuts in Germany (VAT) or the consumption checks in the US. These measures are, however, more concentrated on preserving the pre-crisis status quo – or return to it – and they may not necessarily push output above potential output leading to an overheated economy and thereby leading to inflation. This is due to the fact households are up to now not increasing their debt levels to

increase their permanent consumption and companies are increasing their debt levels only to cover their current costs rather than spending money on investment goods. The investment gap could lead to inflation in the medium term (capacity effect), which we will analyse in the subsequent section.

**Figure 4-1: Output gap estimates**

Output gap in percent of potential gross domestic product



Source: Macrobond

Wilson (2020) notes that evidence from past fiscal stimulus yields three important implications about the effectiveness of fiscal policy:

1. The marginal propensity to consume out of individual transfers is particularly high when unemployment is high and liquidity constraints bind. Thus, in this situation fiscal multipliers could be near or above one. In the US, the unemployment rate is already declining, while unemployment in Europe did not increase much because of the application of short-term work schemes (figure 4-1). Therefore, the multiplier could be less than one in the current situation.
2. The marginal propensities to spend out of transfers are particularly high during times of fiscal strain. This would imply a dollar-for-dollar pass-through to spending. This effect is more due to the Biden administration’s fiscal stimulus package than to the European fiscal programs which are focused on providing liquidity and credit for companies and which are less focused on transfers to households. We will analyze the effects of the Biden administration’s consumption checks therefore in more detail.

3. The fiscal multiplier on government spending when monetary policy is close or at the zero lower bound is around 1.5. Thus, the output boost from the current fiscal response is expected to be comparable to the one during the Global Financial Crisis because of the comparable responses of monetary policy.

The Committee for a Responsible Federal Budget has released estimated fiscal multipliers for the US (table 4-1). The fiscal multipliers of the COVID relief package are comparable in size to the ones during the fiscal stimulus after the Global Financial Crisis as highlighted by Wilson (2020). The fiscal stimulus did at times of the Global Financial Crisis not spur inflation because the output gap could hardly be closed in the USA and remained unclosed for a long time for many European economies. The situation is now comparable, especially since the supply-side restrictions have largely disappeared during the 2<sup>nd</sup> half of 2020. Again, there is a huge output gap which still has not been closed, that prevents the economy from overheating. The special situation in the German automotive industry at the beginning of 2021 as a result of the supply bottlenecks with semiconductors should resolve itself in the course of the coming months. As long as GDP does not overshoot potential GDP, no overheating and thus no inflationary growth is to be expected.

**Table 4-1: Fiscal multipliers for the US**

Effects refer to GDP boost over different periods of time

Policy	Multiplier
COVID relief (2020)	
Paycheck protection program	0.36
Enhanced unemployment insurance	0.67
Recovery rebates for individuals	0.60
Coronavirus relief fund for states	0.88
American recovery and reinvestment act (2015)	
Infrastructure spending	0.4 – 2.2
Payments to state and local governments	0.4 – 1.8
Payments to individuals	0.2 – 2.1
Individual income tax cuts	0.1 – 1.5
Corporate tax cuts	0.0 – 0.4
Effects of policy options (2010)	
Aid to unemployment	0.7 – 1.9
Payroll tax cuts	0.3 – 1.3

One-time social security bonus payments	0.3 – 0.9
Infrastructure spending	0.5 – 1.2
Aid to states	0.4 – 1.1
Tax cuts and refundable tax credits	0.1 – 0.9

Source: Committee for a Responsible Federal Budget (2020)

However, pend-up demand and consumption checks could generate additional demand, which must be analysed in more detail:

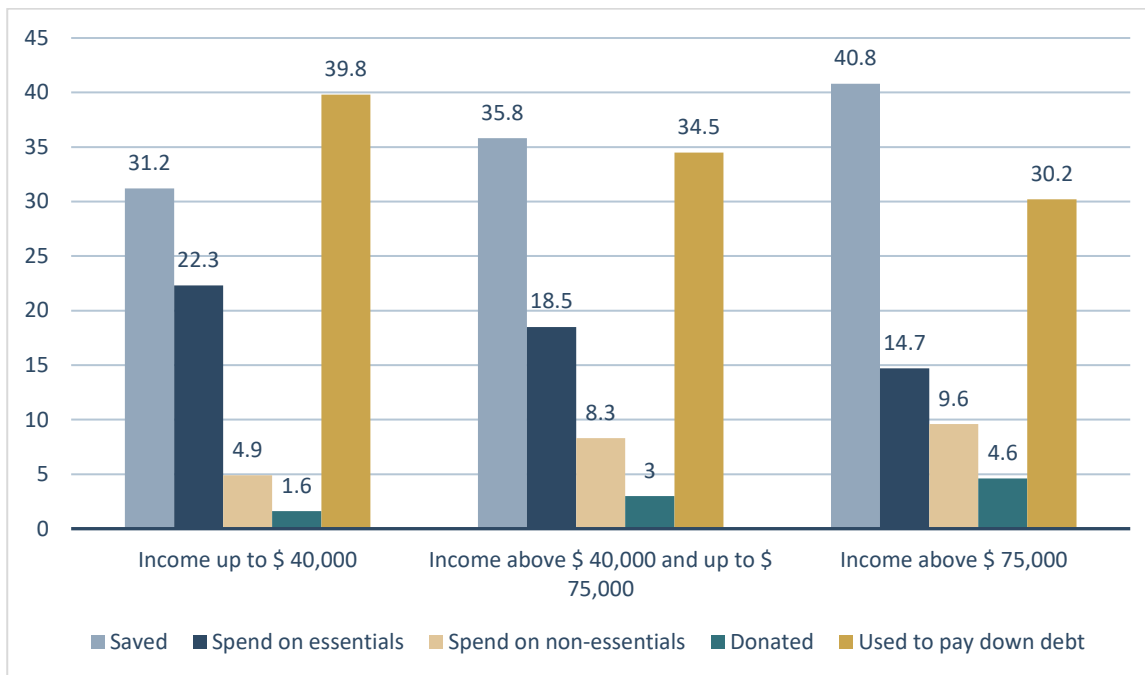
- The size of pend-up demand from pandemic-induced savings will depend on the distribution of households' saving rates. Saving rates are normally higher among the higher-income households and lower or even negative among the lower-income households. Moreover, do higher-income households tend to have more secure jobs during recessions compared to lower-income households. These two prerequisites imply that pandemic-induced savings are concentrated among the higher-income households and are probably absent among the lower-income households. Additional money tends to be spent by lower income households and saved by higher income households due to their different propensities to consume. Although it can be expected that some higher income households will spend more money on travel and accommodation after the pandemic or buy new cars, most of the \$ 1.5 trillion is therefore expected to be allocated on capital markets. Thus, the effects of the stimulus packages on inflation might be smaller than expected.
- The design of the US consumption checks considers the different savings rates of lower-income households and higher-income households. Therefore, the amount of the transfer is declining with the household income so that most of the additional money will be spend. However, this effect might be smaller than expected. One reason for this is that the jobs of the lower-income households tend to be less secure compared to the jobs of the higher-income households. Thus, lower-income households, which lose their jobs tend to accumulate credit card debt and they tend to delay tax payments as well as interest payments and redemptions on their mortgages. Thus, part of the additional money by the stimulus checks will be used for debt reduction rather than for new purchases, which leads to a lower-than-expected effect on inflation.

Armantier et al. (2020) have analyzed the most recent wave of the Survey of Consumer Expectations. One result was that households with an income of up to \$ 40,000 have saved on average 31.2 percent of their stimulus checks, while households with an income of more than \$ 75,000 have saved 40.8 percent of their stimulus check on average. In addition to that have the lower income households used 39.8 percent of the stimulus check to pay down debts, while the richer households have used 30.2 percent of their stimulus check to pay down debt. Even households which have experience a drop in their income have saved 28.5 percent of their stimulus check

and used 44.2 percent to pay down debts. Overall, households used 18.2 percent of the stimulus check for essential consumption and 7.7 percent for non-essential consumption (figure 4-2).

### Figure 4-2: Usage of stimulus checks

Averages over 1,408 respondents from the Survey of Consumer Expectations, in percent of the amount of the stimulus check



Source: Armantier et al. (2020)

Summing up, although fiscal multipliers seem to be high, the effects of the stimulus packages are possibly smaller than expected because credit and transfers compensate for declining income and revenues or transfers tend to be used for debt reduction rather than for additional spending.

## 5 The changing slope of the Phillips-curve

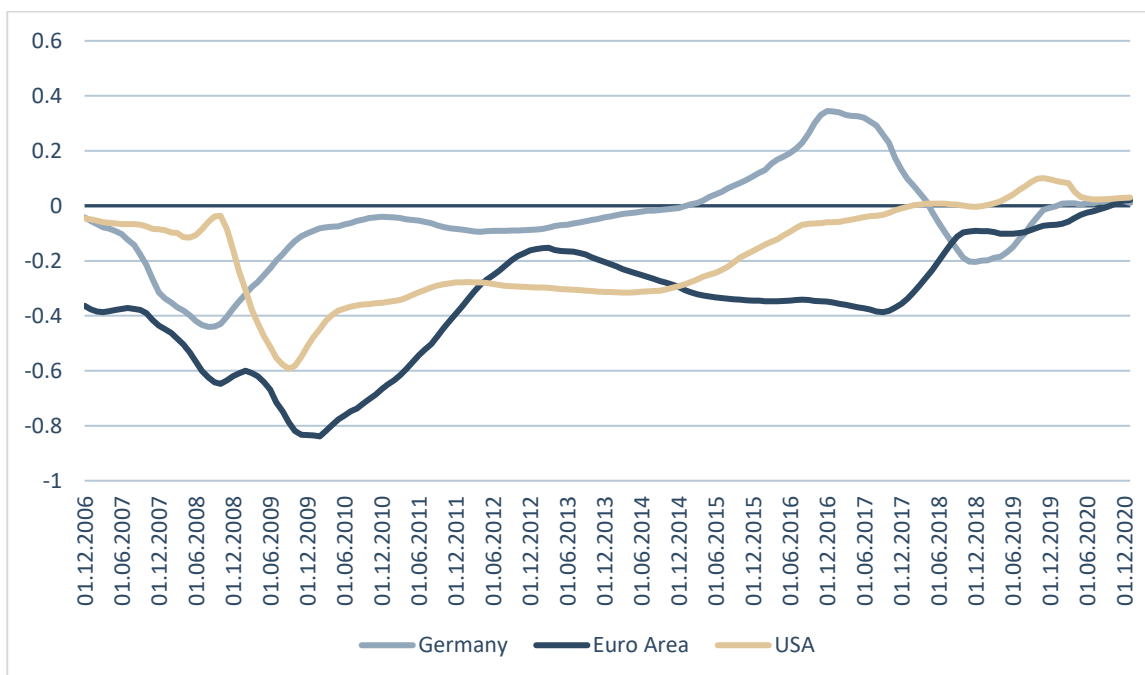
Blanchard (2021) argues that the inflation effect of the stimulus package of the Biden administration would be low because of the decline in the slope of the Phillips curve. His estimates of the slope coefficient have declined to 0.2 (Blanchard, 2016). Blanchard (2021) assumes a positive output gap through the stimulus package of 5 percent. Based on Okun's law he calculates an unemployment rate of -2.5 percentage points below the natural rate of 4 percent. Under anchored inflation expectations inflation would only increase by 0.5 percentage points.

The slope of the Philips curve is not structurally stable over time, but it undergoes fluctuations. By means of rolling regressions with a 10-year time window it can be shown how large these fluctuations are (figure 5-1). It can be seen, that in the USA, the Eurozone and in Germany as part of the Eurozone the slope of the Philips curve, modelled as a regression of the

unemployment rate on inflation, has been negative for a long time. In the last two years, however, the slope lies in the vicinity of zero indicating a flat Phillips curve. Other studies also report that the slope of the Phillips curve has declined in the European countries, indicating that the effects of an overshooting output gap on inflation might be small (Bundesbank, 2016).

### Figure 5-1: The changing slope of the Philips Curve

Coefficient of 10-year rolling regression, dependent variable: consumer price inflation, independent variable: unemployment rate



Source: Macrobond, own calculations

Based on the flat Phillips curve we do not expect a significant inflationary effect during the recovery phase.

## 6 The deleveraging of pandemic legacy debt

In such a crisis liquidity matters, but companies often raise debt for covering costs rather than investing. This leads to a deterioration in the balance sheet quality of these companies thereby restricting their future access to finance. Thus, before companies start investing, they have to restore their equity capital buffers and their liquidity buffers by saving (Demary et al., 2021). If too many companies are involved in a debt deleveraging process, the economy might get into a situation of a demand shortage, which will lead to low inflation or mild deflation. But such a development seems rather unlikely since companies in the industrial-service – the dominating sector – are fairly robust in surviving the pandemic.

In addition to demand-side effects, a period of low investment could also lead to supply-side effects and thereby to higher inflation. By the focus on balance sheet repair companies miss to



invest in new technologies which would at first reduce their productivity. This will cause a slowdown of potential growth leading to a closing of the output-gap from the “wrong side” and thereby to an overshooting of GDP.

In the years after the Banking and Sovereign Debt Crisis in the Eurozone, the debt deflation in the former crisis countries has led to deflationary developments rather than to higher inflation, because the demand-side effect was stronger. The question now is whether the same development is expected for the post-pandemic recovery. While after the crisis in the Eurozone the debt deleveraging was accompanied with a restrictive lending by banks which had to increase their equity capital buffers by reducing risk assets, the situation now is that banks could support the balance sheet repair of the business sector by providing them with credit lines during restructuring. The faster the restructuring, the faster investment demand will catch-up. This reduces the chances for a deflationary post-pandemic period but does not necessarily imply high inflation since it reduces the supply-side effects that lead to higher inflation.

Monetary aggregates are no longer a guide to inflation because of technological progress in financial markets. Especially, since the end of the global financial crisis the money multipliers completely broke down (Diermeier/Goecke, 2016). One reason was the deleveraging of banks and non-financial companies which led to a slow credit growth. Such a deleveraging can also be expected when companies start to pay back the Covid legacy loans which will lead to a decline in the monetary aggregates and central banks will face problems in increasing the monetary base.

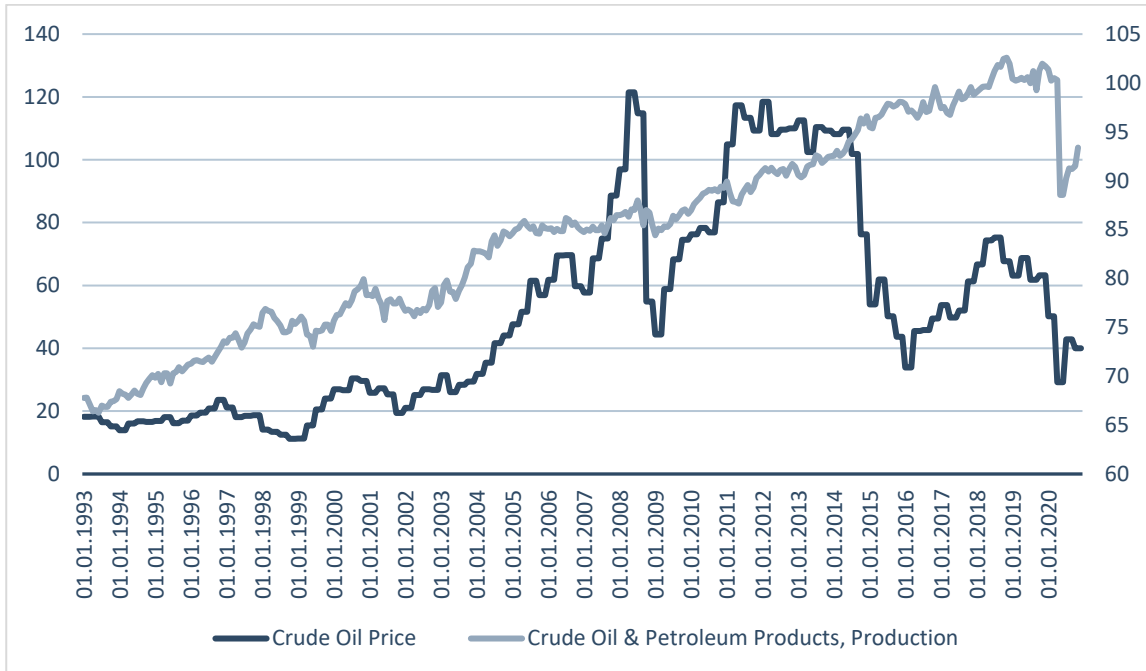
## 7 Oil prices during lockdown and recovery

The oil price has a very important influence on the future path of inflation. First, the oil price determines the price of fuel for cars or for heating. Second, it determines the price of plastics, which are basic to many products. Thereby, rising oil prices could have second round effects on core inflation.

The oil price experienced a pandemic-induced decline as many people either worked from home or used the bicycle instead of public transport. The decline in oil demand seems to be higher than the decline in oil supply (figure 7-1). While mobility declined more during the first lockdown than during the second one, Western Texas Intermediate (WTI) oil prices are recovering from -37 US-Dollar on April 21, 2020 to 39 US-Dollar on November 5, 2020 to 62 US-Dollar currently. There is still a lack of demand for kerosene because of travel restrictions. The lockdowns have reduced international mobility severely (figure 7-2) and also city mobility (figure 7-3). However, demand for kerosene might increase as travel restrictions will be lessened and households start to go on holidays again and employees start to hold meetings again in person. As soon as the oil price increases, also inflation will go up again. The oil price (WTI) has recovered since the lockdown low in mid-April 2020 and reached the long-term level. However, the forward rates show a clear calming down.

**Figure 7-1: Oil consumption was hit by the lockdown**

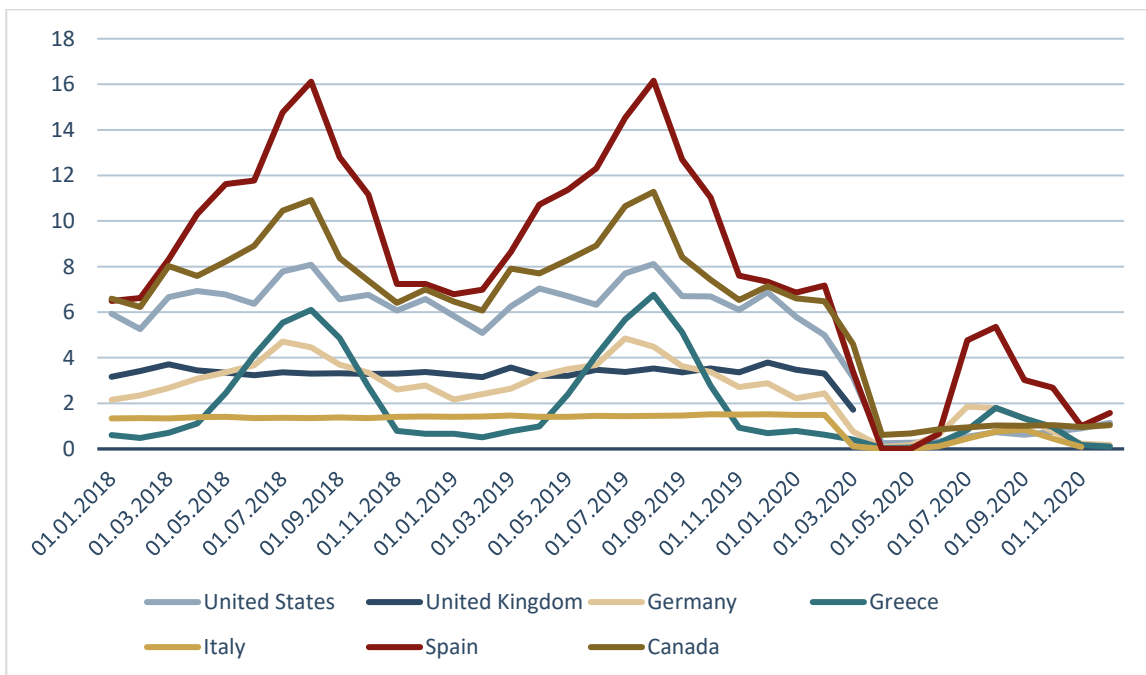
Crude Oil & Petroleum Products, Petroleum & Other Liquids, Production, Total, million barrel per day (right scale)  
 Crude Oil Price, FOB, USD per Barrel, Spot Brent, OECD Economic Outlook, Estimate, Calendar Adjusted, SA (left scale)



Source: Macrobond

**Figure 7-2: Lockdowns reduced international mobility**

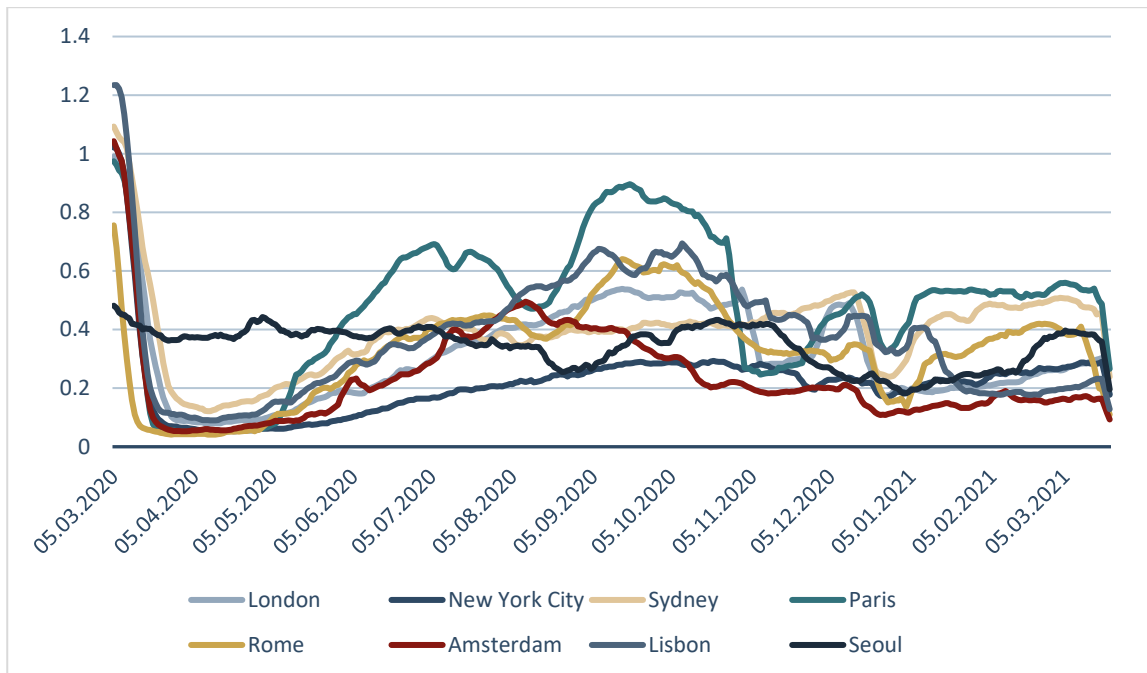
International arrivals, million



Source: Macrobond

### Figure 7-3: Lockdowns reduced national mobility

Citymapper mobility index, weekly moving average



Source: Macrobond

## 8 Unanchored inflation expectations

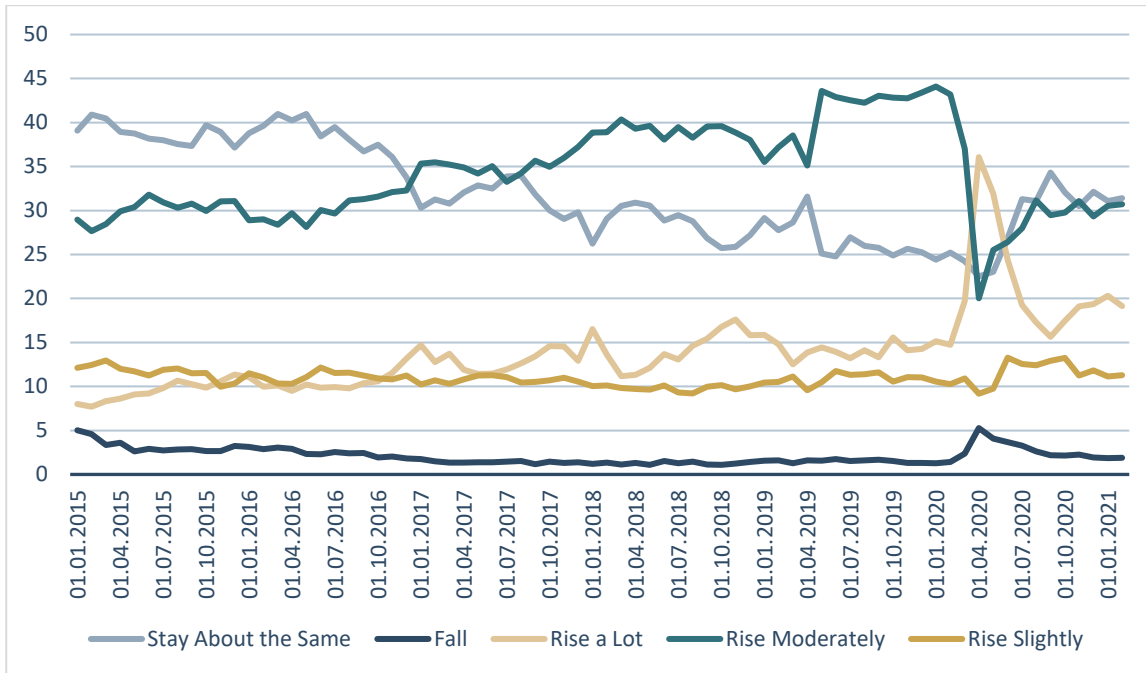
Unanchored inflation expectations were of major concerns after the Global Financial Crisis and the Banking and Sovereign Debt Crisis in the Eurozone. Inflation expectations do not seem to be unanchored currently (figure 8-1). The number of respondents who expect a high inflation have spiked in the last year but normalized thereafter. However, the number of respondents who expect a moderate price increase have risen. But that does not imply that high inflation is on the rise. After many years of depressed inflation expectations, a rise in inflation expectations could also be seen as a sign of an improving economy.

After the high inflation period in the 1970ies central banks have successfully proven to stabilize inflation around a predefined target value and central banks have built-up reputation for being able to fight inflation. While central banks are restricted in their ability to fight deflation in the vicinity of a lower bound on interest rates, there is no reason to expect why central banks should run into difficulties in raising interest rates to prevent the economy from overheating.

Household inflation expectations did not increase significantly. The Survey on Consumer Expectations for the US reports a median inflation expectation for next year of 3.1 percent and a median inflation expectation for the next three years of 3.0 percent. These values are only 0.27 percentage points and 0.13 percentage points above their average values over the time span June 2013 to February 2021.

### Figure 8-1: Euro Area inflation expectations seem to be anchored

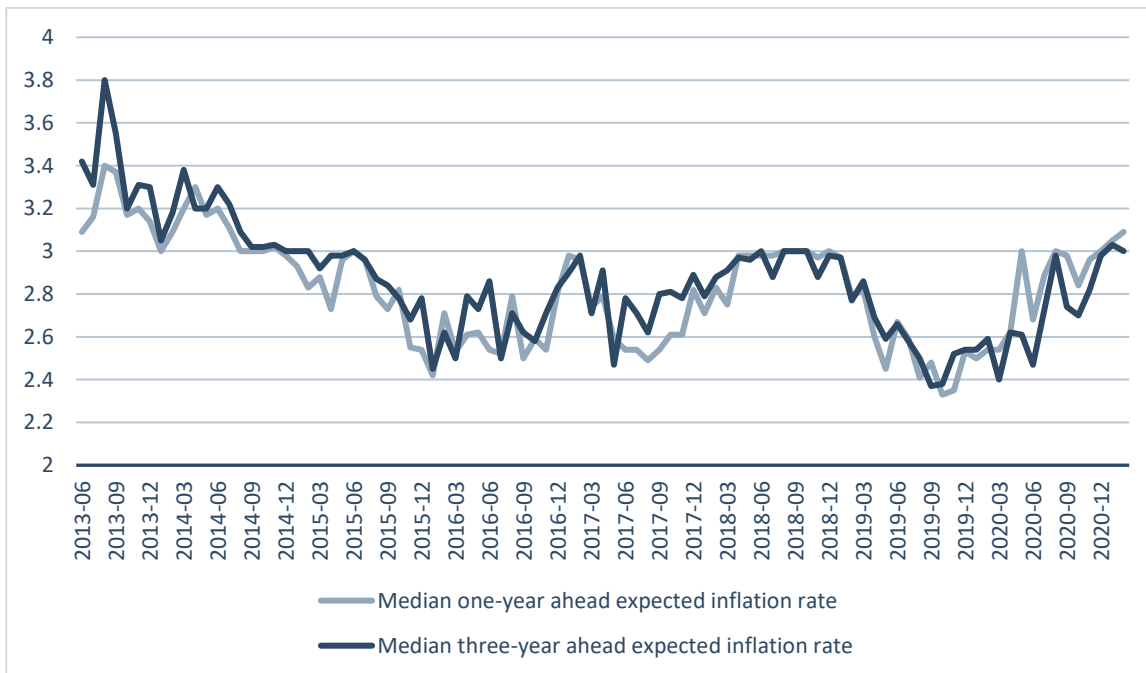
Euro Area, development of consumer prices in the next 12 months, survey



Source: Macrobond

### Figure 8-2: US household inflation expectations seem to be anchored

USA, median forecast



Source: Federal Reserve Bank of New York

US households seem to overestimate inflation systematically. Other studies that analyze inflation expectations come to the result that the ECB staff forecasts tend to overestimate inflation systematically (Darvas, 2018). Thus, based on inflation expectations we do not see any evidence that inflation expectations are too high or tend to be unanchored.

## 9 A dilemma for central banks?

Although the factors discussed above do not indicate a persistent rise in inflation, higher inflation cannot completely be ruled out. But: While structural factors for persistent inflation are absent, the expected hike of inflation seems to be of a transitory nature. We see no plausible reasons for a new phase of permanently high and rising inflation. Nonetheless, this gives rise to questions for the central banks:

- Inflation targets are defined over the medium term in order to prevent central banks for reacting on every transitory change in the inflation rate which would translate into very volatile central bank interest rates and thereby would trigger a higher volatility in financial markets. In fact, central bank interest rates are characterized by inertia and medium-run effects on inflation are stressed in central bank communication, while short-term changes in inflation rates are mostly neglected by policy makers.
- Short-term changes in inflation rates often result from volatile energy cost. However, higher energy costs could lead through second-round effects to higher prices of other goods which are produced by energy-intensive sectors. When mobility increases again, oil prices will increase leading to higher headline inflation. If this increase leads to a trend increase in core inflation, central banks will have to respond. From today's perspective, however, these risks to inflation have not materialized, yet.
- Post-pandemic pend-up demand will most likely translate into higher prices for touristic services, since the willingness to pay for travel services have increased and since there are no substitutes for holidays other than staying at home. If the price level shifts upwards leading to permanent higher prices, the effect on the inflation rate will still be only transitory, which is not a signal for central banks to respond by adjusting their monetary policies. The other reason is that travel and accommodation is only part of the consumption basket and central banks only must react to increases if the overall cost of living increases.
- While fiscal policies in the US and other developed countries will support demand, they will also provide incentives for greater investment in the medium term. Especially the in Europe already existing, now also in the USA increased focus on climate change and thus the decarbonization of production and mobility lead us to expect increased investments worldwide. Sustained price pressure due to increasing occupancy is not to be expected. In addition, the production capacities are currently not being used to full capacity.

- There might be good reasons why inflation expectations may stay anchored. This has to do with central banks' reputation in fighting inflation. While most central banks were less successful in increasing a low inflation rate back to the target value, they were very successful in holding inflation near the inflation target since the beginning of the 1990ies. The reason for that is that monetary policy is like "pushing a string", i.e., that the effects of a restrictive monetary policy are more powerful compared to the effects of an accommodative monetary policy near the lower bound on interest rates. This effect seems to be incorporated in inflation expectations which prevents them from being unanchored. With anchored inflation expectations, there is no immediate need to central banks to change the course of their monetary policies.

Since today's inflation spike is more or less due to transitory factors, there might be no pressure on central banks to slow down inflation. However, it will be politically more controversial because central banks have to keep interest rates low in times of inflation exceeding their inflation targets. We expect that "higher for a short time" will return to "low for longer".

Thus, we do not expect any trade-offs for central banks between fighting inflation and supporting the economies to grow and to deleverage. Instead, we see a welcomed return of inflation towards its target value accompanied with an economic recovery that enables central banks to end their asset purchasing programmes and their negative interest rate policies in a natural way, e.g., higher interest rates without risking the economic recovery.

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