21 June 2021, 6:48PM UTC
Chief Investment Office GWM
Investment Research

Inflation dynamics and asset allocation

Investment strategy insights

Authors: Jason Draho, Head Asset Allocation Americas, UBS Financial Services Inc. (UBS FS); Brian Rose, Senior Economist Americas, UBS Financial Services Inc. (UBS FS)

- US inflation should peak in 2Q and be transitory, supported by secular disinflation forces. But it's possible that the economy has entered an inflationary regime due to normal cyclical overheating and rising inflation expectations.
- The Fed's tolerance for inflation much above 2% appears lower than what investors expected prior to the June FOMC meeting. But uncertain inflation dynamics and Fed policy reaction function mean that inflation risks are positively skewed versus negative last decade.
- Inflation is challenging for asset allocation, leading to lower returns, a positive stock-bond correlation, and high volatility. Some inflation-hedging assets (commodities, volatility-linked products) can help, others (gold, TIPS) are likely to suffer from higher real rates, while others (real estate, natural resource stocks) take time to pay-off.
- Investors must be in tactical to navigate the uncertain inflation and policy environment and can benefit by holding a variety of positions that will likely pay off in different scenarios.

Source: Unsplash/Logan Weaver

There's a good chance that the 5% (YoY) CPI print for May will be the high-water mark for US inflation in this cycle. Just the sizable base effect implied in this number will make it hard to surpass. But declining from this peak doesn't automatically mean that inflation will be transitory, reverting to pre-pandemic levels and then staying there. Underlying pressures could keep it elevated and eventually push inflation back up. All of this means that the path for inflation over the next couple of years is still a matter of debate, with reasonable arguments on both sides.

In contrast to the uncertainty about inflation dynamics, it's almost assured that investors will be navigating the market implications of inflation for the foreseeable future. We base this on three observations about inflation.

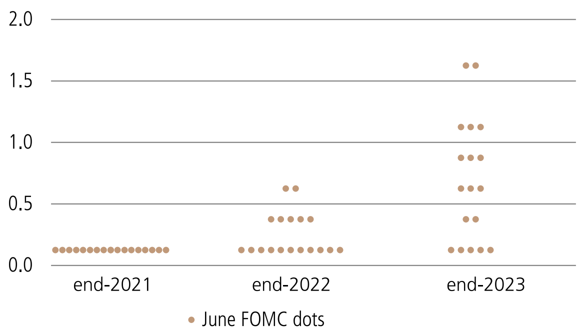
First, the weight of evidence suggests that inflation is likely to be transitory, as pandemic-related effects ease or even reverse over the next 12 months. But inflation should remain in the 2.0-2.5% range rather than revert to the pre-pandemic 1.5-2.0% level, so some inflation increase isn't transitory.

Second, risks to inflation are likely to be more evenly balanced than they were over the last decade when deflation was the fear, while the skew now leans toward the upside. Once pandemic effects abate, inflation could start to rise late in 2022 due to normal cyclical overheating. Working against that are long-term structural disinflationary forces that appear to be largely still in place.

Third, the Fed's tolerance for inflation much above 2% beyond 2022 is less than what investors were assuming before the June FOMC meeting, which produced a hawkish surprise on future rate hikes. Specifically, the Fed's "dot plot" changed from projecting no rate hikes in 2023 to now two hikes that year (Fig. 1). Yet there's still uncertainty about exactly how the Fed will operationalize its average inflation targeting (AIT) framework in terms of the start and pace of rate hikes. A Fed that is data-dependent with an unclear policy reaction function means that markets will be sensitive to any inflation and jobs news.

Fig. 1: Median dot shows two hikes in 2023

FOMC member estimates for appropriate level of Fed policy rate at year-end, in %



Source: Federal Reserve, UBS, as of 16 June 2021

After the last decade investors know the playbook for a disinflationary growth regime, but the one for inflationary growth—or worse, stagflation—needs a refresh. For starters, it's not sufficient to only buy a few inflation-hedging assets to protect the portfolio. Instead, asset allocation must consider how this regime impacts all aspects of the portfolio. This depends on multiple factors, including the inflation level and trend (e.g. high but falling), the level and trend of growth, the Fed's reaction function to these macro dynamics, and the inflation assumptions priced into different assets, as well as their valuations. Thus, initial conditions and the macro dynamics matter for asset allocation in response to inflation risks.

Right now, neither rates nor equities appear to be pricing in a sustained inflationary regime, so any inflation surprises relative to transitory expectations will create short-term challenges for both. And since the stock and bond return correlation is usually positive during inflationary regimes, as it's been thus far in 2021, standard 60-40 type of portfolios will be challenged if the regime persists. Commodities have historically performed well during inflation regimes and are appealing tactically, making them an attractive diversifier. Over time the "real" aspect of natural resource stocks and real estate makes them relatively effective inflation-hedgers. Contrary to their reputations, gold and TIPS are underwhelming inflation hedgers, at least in the short term, because they are negatively impacted by higher real rates, which is a good possibility for the rest of the year. Instead, products benefiting from higher volatility and keeping some cash on hand as dry powder could be more effective options.

The bottom line is that investors need a different asset allocation approach in an inflationary growth regime. Asset classes that lagged for the last 10 years could outperform for the next five. Inflation is likely to remain a US-only problem, which favors diversifying equity allocations into regions with lower expected inflation and are cheaper after a decade of underperforming. The uncertainty of the inflation and Fed outlook warrants a diversity of positions that vary in how well they perform across inflation scenarios. Finally, investors will need to be nimble in managing their portfolios because coming out of a pandemic macro conditions and policy can change quickly.

A higher inflation regime also matters for individual financial planning and spending needs in retirement. The personal inflation rate that people experience is different from the official inflation measures that estimate price increases in a "representative basket" of goods and services. To better understand how inflation can impact your spending and planning, please see Modern retirement monthly: Inflation rates and planning: The "retirement smile."

Interpreting inflation dynamics

Wherever you stand on the transitory inflation debate, it's hard to dispute that there's heightened uncertainty about the future path of inflation. The unprecedented combination of large parts of the economy effectively shutting down and now restarting and the extraordinary policy response leaves many inflation scenarios still on the table. To assess the likelihood of short-, medium-, and long-term scenarios it helps to decompose inflation into pandemic-related effects, normal cyclical drivers, and secular deflationary forces. Fiscal and monetary policy play a central role in the cyclical story and the Fed has the starring role for how it will respond to high inflation and act to bring it down.

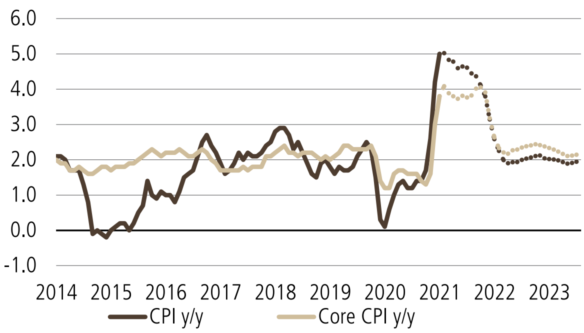
The transitory case for inflation begins with the temporary nature of the pandemic-related effects, which should resolve within a few quarters. Potentially offsetting cyclical effects could materialize in 2022 and beyond, stemming from the economy running at full capacity, supported by loose monetary policy and rising inflation expectations. Long-term structural disinflationary forces are still present, although their potency could be diminished or possibly reversed in some cases. Finally, Fed actions will heavily influence how inflation evolves and those actions remain highly uncertain at this point in time.

Most pandemic inflation effects are likely transitory

The May CPI inflation rate of 5% was slightly higher than consensus expectations, but it likely represents the peak in this cycle (Fig. 2). While higher than the April CPI print of 4.2%, the month-over-month change did decline. How quickly inflation will moderate is uncertain, but some factors that have contributed to the inflation surge are direct consequences of the pandemic, and they should dissipate over the next 12 months. They fall into three categories.

Fig. 2: Inflation should slow from here

CPI and core CPI, year-over-year change in %

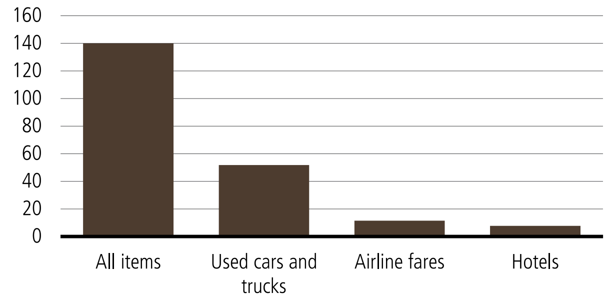


Source: Bloomberg, UBS as of 15 June 2021. Note: Dotted lines indicate UBS forecasts.

Bottleneck effects: Supply chain bottlenecks have lifted prices, but they won't last indefinitely. For instance, used car prices were up 10% m/m in April and 7.3% m/m in May because the supply of new cars is constrained by insufficient semiconductor supplies and car rental agencies are scrambling to acquire cars. These pressures are likely to ease in one to two quarters. In fact, used cars, airfares, and hotels accounted for half of the CPI increase in April and May (Fig. 3).

Fig. 3: A few big price moves pushed up CPI

Contribution to change in CPI for April and May, in basis points

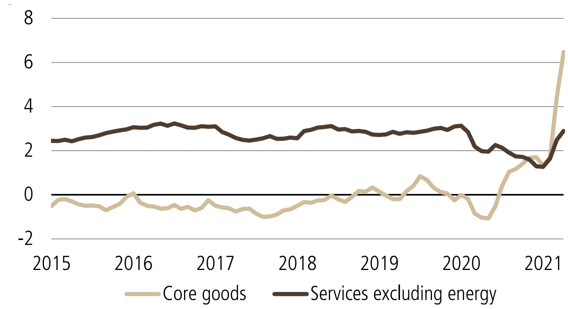


Source: Bureau of Labor Statistics, UBS as of 15 June 2021

In general, demand for some goods is now well above pre-pandemic levels, while supply hasn't been able to catch-up yet. This is revealed in goods inflation, which is more than double that of services inflation (Fig. 4). As supply ramps up and consumer spending shifts from goods to services these bottleneck inflation effects should abate.

Fig. 4: Bottlenecks causing goods prices to spike

Core CPI for goods and services, year-over-year change in %

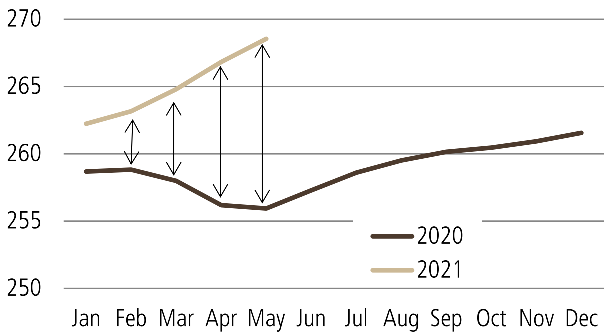


Source: Bloomberg, UBS as of 15 June 2021

Base effects: Even at the start of the year, higher inflation prints were expected in 2Q21 because of base effects. Prices dropped in 2Q20 at the height of the pandemic, including oil tanking in April last year. As those prices recover to pre-COVID levels, as they are now, inflation will be elevated until the year-over-year base effect dissipates later this year and could even reverse in one year (Fig. 5). Hotels and airfares are examples of sectors hit hard by the pandemic, where prices are rising but still below pre-pandemic levels, temporarily boosting inflation month-over-month.

Fig. 5: Base effects will dissipate

CPI level by month in 2020 and 2021

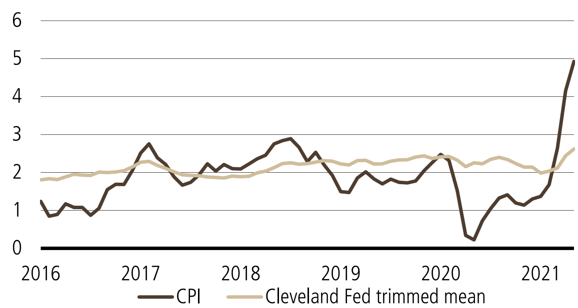


Source: Bloomberg, UBS as of 15 June 2021

Tail effects: Headlines of exorbitant price increases—e.g. lumber prices up 200%—give a distorted picture of the overall inflation dynamic. Many of these extreme examples tend to be very small components of the overall consumption basket and account for only a few percent of the final prices of many goods. Price surges are also often temporary and quickly reverse; e.g. lumber prices are down 30% over the past month. Consequently, rather than headline or even core inflation, trimmed inflation measures that eliminate the extreme price movements have remained far more contained (Fig. 6).

Fig. 6: Trimmed mean shows less dramatic rise in inflation

CPI and Cleveland Fed trimmed mean CPI, year-over-year change in %



Source: Bloomberg, St. Louis Fed, UBS as of 15 June 2021

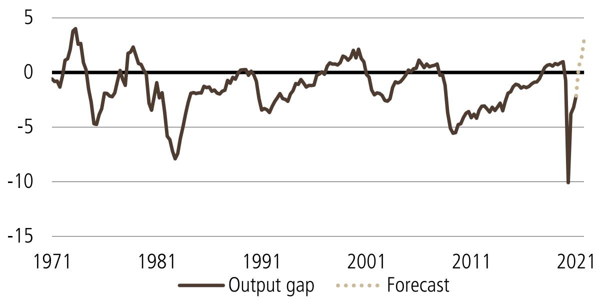
Cyclical inflation pressures could build in 2022

At the most basic level, inflation rises when aggregate demand in the economy exceeds aggregate supply, pushing prices higher. A positive output gap proxies for this demand-supply imbalance, meaning total output is greater than full-capacity output based on the economy's productive capacity. It's an imperfect measure of excess demand, but the gap corresponds with the amount of slack in the economy, from ample coming out of a recession to very limited by the end of an expansion. This evolution is why inflation pressure tends to build over the course of the cycle.

Among the many unique aspects of the current recovery is how quickly the output gap is closing, with projections that it could be positive by late 2021 (Fig. 7). This is far faster than in the prior four expansions and why cyclical inflation pressures could arise sooner. Indeed, the owners-equivalent rent measure is one of the more cyclical components of CPI, and it was up 0.3% m/m in May, higher than in recent months. A positive output gap doesn't guarantee that inflation will accelerate—it didn't prior to the pandemic—but it does increase upside risks.

Fig. 7: Output gap will turn positive soon

Output gap as % of real GDP



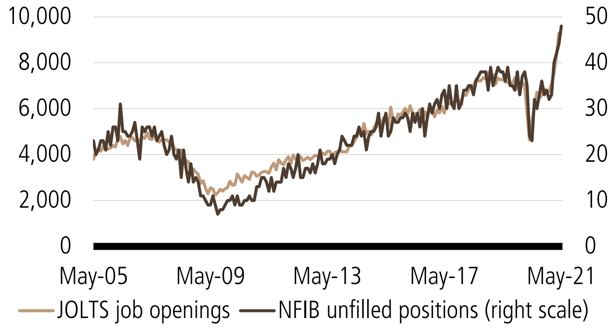
Source: St. Louis Fed, UBS as of 15 June 2021. Note: BEA estimate of output gap, UBS forecast.

Other prominent factors that could contribute to cyclical inflation include rising wages, money supply growth, and higher inflation expectations.

Rising wages: Labor is the largest input cost for most goods and services, so a tight labor market and rapid wage growth, both late cycle characteristics, point to higher inflation. The empirical evidence is murky, at least as a causal relationship from higher wages to inflation. But faster wage growth usually occurs when there is limited productive slack in the economy overall, so it at least signals rising inflation pressures. The current labor market recovery has been rapid, but also constrained by supplemental unemployment benefits, schools not fully reopened, and lingering COVID fears. With a record 9.3m job openings (Fig. 8) wage growth could accelerate, which is already evident in low-paying service sector jobs (Fig. 9).

Fig. 8: Job openings are at a record high

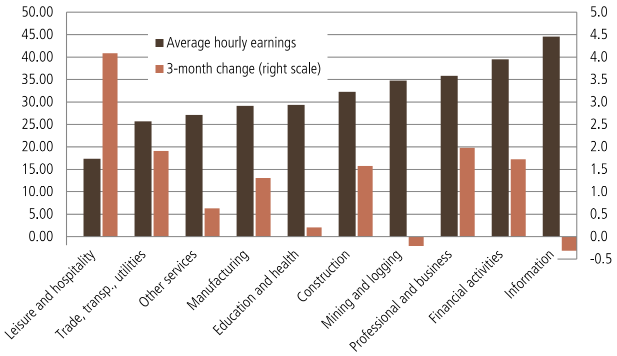
JOLTS job openings in thousands, NFIB % of small businesses reporting unfilled positions



Source: Bloomberg, UBS as of 15 June 2021

Fig. 9: Wages rising rapidly for low-paying jobs

Average hourly earnings in USD and 3-month change in %



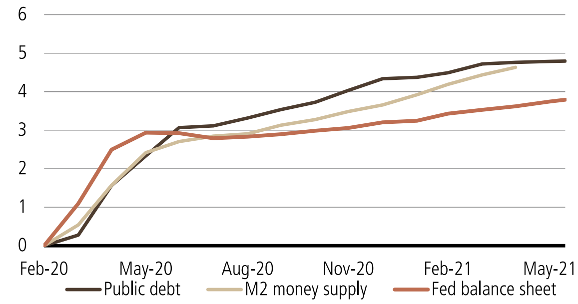
Source: Bureau of Labor Statistics, UBS as of 15 June 2021

Money supply growth: US money supply has grown nearly 30% since February 2020. Monetary theory conjectures that this should result in higher inflation, assuming the money actually circulates in the real economy. But most of it may not be, given the growth in banks' excess reserves at the Fed, investor flows into financial assets, and the decline in the velocity of money. There also hasn't been much of a relationship between money supply growth and inflation in developed economies during the last four decades. Japan is the extreme case, having struggled to generate any inflation despite printing money equal to 100% of GDP.

What makes the current money supply growth potentially more inflationary is that it's a consequence of monetary policy implicitly helping to facilitate expansionary fiscal policy. The federal debt has increased by more than USD 4tr since the pandemic began, while the Fed's balance sheet and M2 money supply are both up by similar amounts (Fig. 10). While it is fiscal spending that is lifting aggregate demand and inflation, monetary policy has played a critical supporting role.

Fig. 10: Fed helping to finance government debt

Public debt, M2 money supply, and Fed balance sheet, increase since Feb. 2020 in USD trillions

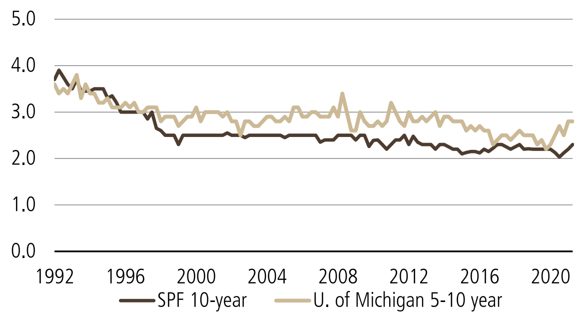


Source: Bloomberg, UBS as of 15 June 2021

Inflation expectations: These are probably the most important determinant of realized inflation through a self-reinforcing feedback loop. When inflation is steady around 2%, inflation expectations are likely to remain anchored around this level, especially when supported by an independent, inflation-targeting central bank that has successfully kept it low. But once inflation starts to rise above 2% and inflationary pressures build, expectations may start to rise in anticipation of sustained higher inflation, fueling additional price increases. One saving grace is that long-term inflation expectations are slow moving and tend not to react much to inflation and deflation shocks that are viewed as temporary (Fig. 11). In the US, this reflects the "inflation capital" that the Fed has earned after decades of low inflation.

Fig. 11: Long-term inflation expectations remain range bound

Survey of Professional Forecasters 10-year CPI forecast, University of Michigan Survey of Consumers 5-10 year inflation expectations, in % per annum



Source: Bloomberg, UBS as of 15 June 2021

Secular disinflationary forces remain, but weakened

The low inflation regime of the past decade had the tailwind of multiple disinflationary secular trends. Some of them are losing steam and could even become slightly inflationary, but on the whole their bias remains towards "lower for longer" inflation dynamics.

Demographics: The implications for global demographics on inflation are mixed, but remain in the disinflationary camp. Integrating China and other emerging markets into global supply chains the past few decades amounted to a massive and positive labor supply shock. It kept wages low and the prices of many goods to actually decline. This labor supply shock is now largely over. Helping to offset the loss of this disinflationary impulse are aging populations in developed markets and even some emerging ones, including China. Consumer spending tends to slow and with it aggregate demand, countering any cyclical pick-up in demand.

Globalization: Sending production to low-cost economies and maximizing supply-chain efficiency has helped to curtail price increases. These forces seem to have reached their satiation point and while de-globalization doesn't appear imminent, since the start of the pandemic more companies are talking about reshoring manufacturing and building resilient supply chains. The disinflationary impulse from trade is therefore likely to be weaker than in the past.

Inequality: Income and wealth inequality has been increasing in recent decades. This divergence has indirectly contributed to low inflation the past decade because it has weighed on aggregate demand. Low wage earners have the highest marginal propensity to consume, so total wage growth that is skewed towards high income workers will likely result in slower consumption growth. The recent rise in wages for low-paying jobs notwithstanding, absent policies to more permanently address income growth gaps, inequalities across income will likely continue to have a disinflationary effect.

Technological disruption: Technological advancements have helped to keep inflation low in recent decades. In particular, rapid improvement in electronics have kept quality-adjusted prices for many consumer products on a downward path, and also boosted productivity growth throughout the economy. Labor-saving technologies, especially AI, have great potential to reduce costs that will put downward pressure on prices in the years ahead. On top of these trends, structural changes promoted by the pandemic, such as more people working from home and shopping online, should be deflationary once the supply side solves the current bottlenecks.

A policy regime change contributes to higher inflation

Monetary and fiscal policies are helping to create a potential inflationary regime for both what they've done since the pandemic began and because of what they could do in the future. COVID-relief fiscal support in 2020 and 2021 has totaled roughly USD 4tr, or about 20% of GDP, while the Fed's balance sheet has increased by USD 4tr to 8tr over that period. Thus, monetary policy has effectively but indirectly financed the fiscal expansion. And these large fiscal transfers have boosted aggregate demand, thereby contributing to the current inflation.

Why these inflation pressures could persist stems from a potential paradigm change in the conduct of monetary and fiscal policy. The neoliberal policy orthodoxy of the past 40 years is waning, and many of its tenets—deficit reduction, market-based solutions, free trade—are being openly challenged after a decade of weak growth, rising inequalities, and shrinking opportunities for many marginalized people. A rising chorus of voices, not all on the left end of the political spectrum, is calling for economic policies to be broad and inclusive, with less concern about inflation and rising debt levels. The Fed's prioritization of maximum employment is consistent with this thinking, while the Biden Administration's recent budget proposal projects elevated deficits for the rest of this decade, before implementing any of its proposed infrastructure spending programs and tax increases.

A policy regime with higher risk of inflation as a by-product does not mean that persistently high inflation is inevitable. In fact, the long-term inflation outlook is intimately tied to the Fed and its mandate to keep inflation moderate. As long as the Fed is independent and wants to maintain its inflation-fighting credibility the risk of high inflation in the long-run is low since it has the tools to keep inflation under control. The question is whether it will be willing to pay the potentially high economic cost of achieving that objective, while its independence shouldn't be taken for granted in a climate of populist sentiment.

Transitory? Yes. A different inflation regime? Also yes

There's a good chance that CPI inflation for May 2022 will be around half of the 5% experienced this year. The ending of the temporary pandemic inflation effects is likely to be sufficient to bring inflation down to those levels. In that sense, we expect the current inflation surge to be transitory.

Yet trying to forecast the path of inflation over the next few years is complicated. Inflation could trough one year from now as the base effects become deflationary. But simultaneously cyclical forces could be building that gradually lift inflation during the rest of 2022 and into 2023. There are many reasons why this could happen. Household balance sheets are extremely strong, offering the possibility that consumer demand will keep surprising to the upside. Businesses are struggling to find workers, even though there are 7.6 million fewer employed people than prior to the pandemic. The pandemic may have structurally changed the willingness of some people to work, resulting in a tighter labor market than we're assuming. Commodity prices have increased, while small businesses have started to pass along higher costs to their customers. Even if structural disinflationary forces are still present, they could be overwhelmed by these cyclical factors.

This leads us to three conclusions about the inflation outlook. First, once the transitory effects dissipate inflation looks likely to settle in the 2.0-2.5% range, depending on the metric, which is higher than the 1.5-2.0% range that applied for most of the prior decade. Various inflation expectations measures are all consistent with this long-term view and would bring back inflation views to at least where they were in 2013, before secular stagnation became the dominant macro paradigm. If this outcome materializes, the Fed will have successfully achieved its goals.

Second, once this 2.0-2.5% range is achieved risks to inflation will be more evenly balanced than they were over the past decade, during which they were skewed to the downside and the main fear was deflation not inflation. If anything, the risks will have a clear upside skew in a way that hasn't been consistently true in well over two decades.

Third, the long-term inflation outlook depends heavily on the Fed and its policy reaction function in the new Average Inflation Targeting (AIT) framework is still uncertain. Based on the Fed's own projections they won't have to start raising rates until 2023. An excessive rise in long-term inflation expectations towards 3.25% could cause them to bring the hikes forward, since this would suggest the Fed is losing credibility. Core inflation measures staying above 2.5% even as "transitory" factors start to fade would also concern the Fed. Thus, it's unlikely that inflation will continue to be around 3% beyond 2023 because the Fed would likely take aggressive steps to bring it back to target. But the wide range of possible inflation outcomes means that there is a wide range of possible start dates for rate hikes. The exact path is contingent on how exactly inflation evolves and how hot the Fed will allow the economy to get before policy is tightened. These possibilities matter a great deal for asset allocation.

Asset allocation implications

Inflation prospects that look more benign than investors feared just a month ago are a welcome development, given the challenges that an inflationary regime creates for asset allocation. Aside from being an implicit tax on all asset class returns, high inflation usually triggers monetary policy tightening and eventually slower economic growth and possibly a recession, all of which are negative for most assets. While there's a good chance that inflation peaked in May, upside risks are likely to persist for the rest of the cycle, keeping markets sensitive to inflation surprises.

When faced with this environment, many investors immediate response is to seek out assets thought to be good inflation hedges. While a necessary step in the asset allocation process, context and starting conditions matter when assessing the impact of inflation on different assets and portfolios. Whether inflation is rising or falling is as important as its level, while the level and trend of growth also affects the inflation-performance relationship. So to do the inflation assumptions that the markets are already pricing in, as well as the expected policy changes by the Fed.

Consequently, asset allocation should be focused on managing the entire portfolio during a potential inflationary regime rather than simply adding assets that perform relatively well when inflation is high. Since stocks and bonds are the foundation of many portfolios, evaluating how they respond individually and jointly to inflation, and what they're currently pricing, is the starting point in this process.

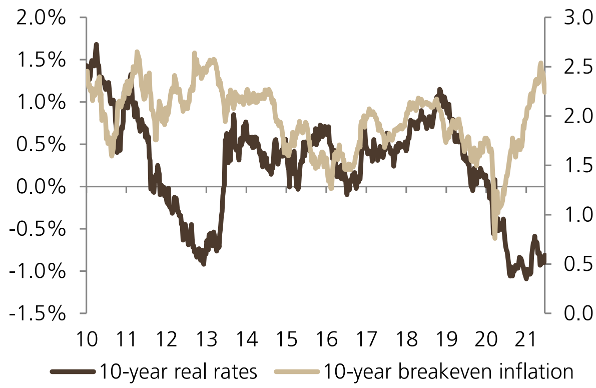
Rate and bond consequences of higher inflation

High inflation generally weighs on bond returns, though how investors experience the impact can vary. For buy-and-hold investors with fixed nominal coupons higher inflation reduces their future real cash flows. Price returns will decline as prices presumably fall due to higher rates, but this is only a short-term effect on total returns as the income will more than offset this loss over time.

While straightforward, why and how interest rates rise in response to inflation matters for investing in bonds, and perhaps even more so for other asset classes. Three considerations are whether the rise in rates is due to growth or policy, how much the inflation risk premium increases, and the range and volatility of rates in response to Fed policy.

Higher nominal rates due primarily to higher inflation expectations are usually an indication of stronger growth leading to reflation across the economy. This is the case over the last year, as market-implied inflation expectations are over 100bps higher, while real rates are largely unchanged (Fig. 12). Rising real rates could reflect better growth, but also a hawkish shift in Fed policy.

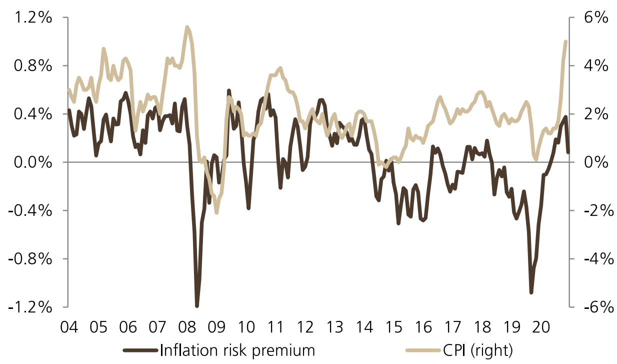
Fig. 12: Inflation expectations and real rates have diverged the past year



Source: Bloomberg, UBS, as of 17 June 2021

Rates can also rise because of a higher inflation risk premium. The estimated risk premium declined over the past decade, from mostly positive in the first half to mostly negative in the second half, highlighting the lack of perceived inflation risk (Fig. 13). But the premium has risen back into positive territory in 2021 as inflation increased, though it pulled back after the June FOMC meeting. This suggests that investors are starting to get compensated for the inflation risk that they're bearing with longer maturity bonds. Greater inflation volatility and magnitude of inflation surprises, both of which are positively correlated with the level of inflation, could continue to push the premium higher.

Fig. 13: The inflation risk premium tends to rise and fall with inflation



Source: Bloomberg, UBS, as of 17 June 2021

Another way inflation uncertainty can manifest in rates is through a higher terminal Fed funds rate and higher interest rate volatility. The market is currently pricing for the funds rates to reach a terminal level of about 1.85% in 10 years, down from 2.5% at the end of March, while the Fed's long-term projection for the terminal rate remains unchanged at 2.5%. If inflation continues to run above expectations and the Fed remains slow to react, then it may be forced to raise rates faster and higher than currently expected. The possibility of a wide range of terminal outcomes for the Fed can lead to higher interest rate volatility as the market shifts from pricing different scenarios. Higher rate volatility usually leads to higher volatility in other asset classes, including equities and FX.

Inflation impact on equities is highly conditional

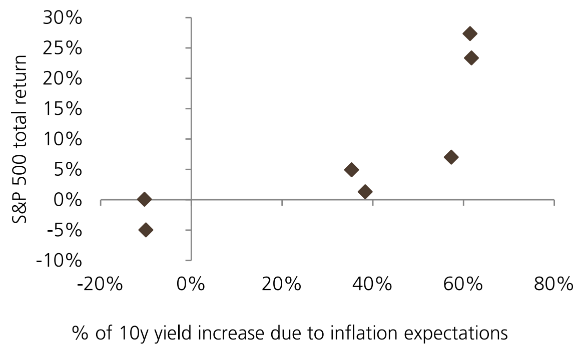
The impact of inflation on equities is complex because it depends on the level, direction, and rate of change of inflation, the growth backdrop, and the time horizon over which returns are evaluated. However, there are consistent patterns in the historical data:

- US equities have performed best when inflation is between 1% and 3%. Very low levels of inflation usually correspond with economic distress, which also weighs on equity returns. High inflation can squeeze profit margins, push rates higher that weigh on stock valuations, and create a general sense of macro uncertainty.
- Equities have still done well when inflation is high but falling, though not as good as when inflation is in the 1-3% range. The best returns have occurred during low but rising inflation periods as they typically correspond with the initial stages of a recovery.
- Equity returns over the subsequent year have been lower when producer price inflation (PPI) is greater than consumer price inflation (CPI) versus when PPI is less than CPI. In effect, if companies can't pass on higher input costs to consumers, profit margins compress and earnings are squeezed.
- Large absolute inflation surprises tend to be associated with lower equity returns. This is consistent with larger surprises happening when the level and volatility of inflation is high, which leads to higher bond and equity risk premiums.
- Strong growth helps to offset the headwinds of high and rising inflation, but only for so long because eventually growth slows due to higher rates and the risk of stagflation leads to poor returns.
- Over a multi-year horizon equities start to behave more like a "real asset" than a "financial asset" in that the inflation shocks pass through from input costs to prices, as inflation becomes positively correlated with nominal revenue growth.

The immediate inflation concern for equities is how it will affect interest rates and for that there are a few things to consider. Theoretically, higher bond yields hurt equity valuations, all else equal, especially long duration growth stocks. But higher rates don't occur in isolation and if they're rising because of better growth the outlook for equities is usually still positive, because of higher expected earnings or a compression in the equity risk premium. Since 2010 there have been seven episodes in which the 10-year Treasury yield increased at least 40bps over two to eight months, with the largest increase being 126bps during the 2013 taper tantrum. The yield increase can be decomposed into the percentages due to higher real rates and higher breakeven inflation expectations. The higher the percentage due to inflation expectations, generally the higher the S&P 500 return during the nominal rate rise (Fig. 14).

Fig. 14: Why rates rise matters for equity returns

S&P 500 returns conditional on the percent of the 10-year Treasury rate rise due to breakeven inflation



Source: Bloomberg, UBS, as of 17 June 2021

Note: Sample based on 6 episodes post-GFC in which the 10-year Treasury yield rose at least 40bps (Aug 2010 - Feb 2011; May - August 2013; Feb - June 2015; Jul - Dec 2016; Dec 2017 - Feb 2018; Aug - Dec 2018; Aug 2020 - March 2021).

These were periods of improving growth outlook, which lifted inflation expectations and equities. But real rates also increased on average 65bps during these episodes, demonstrating that equities can hold up and perform when real rates are rising, provided it's due to better growth news. In contrast, real rates accounted for the entire nominal rate increase, with inflation expectations down slightly, in 2013 and 2018, when rates were rising due to perceived and actual Fed tightening. The S&P 500 returns were 0% and -5%, respectively, in those periods.

This is an important distinction to keep in mind following the hawkish June FOMC meeting. High inflation in conjunction with strong growth should lead to higher rates, but this is likely to be due to rising real rates for the rest of 2021 because of the good growth environment. But the prospect of the Fed hiking rates in two years to cool the economy could lead to higher real rates at that time that are more difficult for equities to absorb, at least temporarily.

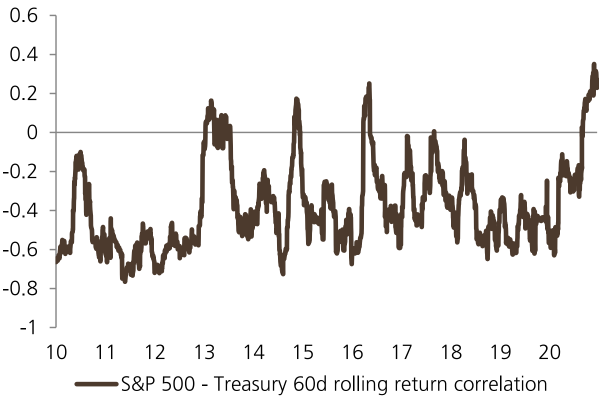
Inflation can flip cross-asset correlations

Another complication that an inflation regime creates for asset allocation is that the correlation between stock and bond returns is usually positive. The correlation has been negative for over two decades when inflation has been very low and inflation expectations have been well anchored. As a result, investors became more sensitive to growth surprises than inflation news. Strong growth that benefits equities also usually leads to higher rates, and therefore lower or negative bond returns, hence a negative correlation.

But when inflation is the dominant macro factor, as it was from the late 1960s to the late 1990s, the markets react more to inflation surprises. Higher than expected inflation cause rates to rise and equities to sell off on the prospect of policy tightening, and the reverse happens when inflation surprises to the downside. The result is a positive correlation. There isn't a clear threshold for inflation that tips the correlation from negative to positive, but inflation above 2% has usually been the transition level. This is apparent this year with inflation well above 2% and the 60-day rolling correlation between the S&P 500 and Treasury turned positive and is the highest it's been in over a decade (Fig. 15).

Fig. 15: The correlation between stock and bond returns turned positive

90-day rolling correlation between S&P 500 and Treasury bond total return index



Source: Bloomberg, UBS, of as 17 June 2021

Some good news is that during periods of high and rising inflation the correlations of equities and bonds with commodities tends to fall. As bonds and equities deal with the expectations of Fed tightening and slower growth in the future, commodities still benefit from strong growth in the present, as their prices are determined by supply and demand in the spot market. Their different drivers at this stage of the cycle can lead to material divergences in performance and thus lower correlations.

Asset sensitivity to inflation

Trying to identify specific assets that are reasonably good inflation hedges is fraught with estimation challenges. There's limited data over the past 25 years of inflation being a concern, while drawing conclusions from the 1970s inflation comes with the caveat that it was a very different economy and Fed policy back then. An asset's appeal also depends on current valuations, which matter for medium to long-term returns. The investment horizon matters as well because some assets—e.g. natural resource equities, listed real estate—that initially react negatively to inflation surprises are able to adjust over the long term as inflation costs are passed through final prices.

All of this implies that investors should be cautious on the potential effectiveness of any asset as an inflation hedge. Nonetheless, consistent patterns are evident, including underwhelming results for gold and TIPS as short-term hedges, despite their reputations, and the outperformance of real assets (commodities, real estate) versus financial assets (equities, bonds) as inflation goes above 3% (Fig. 16).

Commodities: A consistently good performing asset class when inflation is high and rising. This correlation exists primarily because commodity prices rise when demand exceeds their supply capacity, which tends to occur later in expansions when the output gap for the economy overall has also turned positive, leading to broad-based inflation. The current recovery is barely a year old, but the demand and supply for commodities are more reminiscent of late-cycle, which means commodities should remain an attractive inflation hedge in this cycle.

Real estate: In the short term, real estate prices are not immune to inflation surprises and higher rates, which can temporarily overwhelm the ability to pass on higher input costs to end users. But over time real estate prices usually adjust to higher inflation. One factor is that the most valuable aspect of real estate is land, which is in a permanently fixed supply, unlike capital and labor, and therefore can benefit greatly when demand is high. Another consideration is that real estate that has low replacement needs, thereby minimizing the impact of rising input costs, should be relative winners within the asset class.

Gold: Contrary to its reputation, gold is a lackluster inflation hedge. Inflation surprises can trigger the Fed to hike rates, which usually leads to higher real rates and thus a higher opportunity cost for gold, which is why gold and the real 10y rate are negatively correlated. Negative real rates that are likely to rise as the Fed gradually tightens policy will be a headwind for gold. Gold is also not necessarily a safe haven if inflation and policy tightening trigger a risk off market.

Fig. 16: Asset class inflation-hedging attributes

Asset	Inflation hedging attributes
Commodities	Good in short and long term as prices usually rise for same demand/ supply reasons as overall inflation
Real estate	Gets better over time as land value appreciates and nominal input costs can be passed on
Gold	Mediocre to poor, hurt by negative correlation with real rates
TIPS	Mediocre to poor in the short term due to high sensitivity to real rates; ideals is a TIPS 'ladder' to match future liabilities
Value and natural resource stocks	Better over time as equities behave more like a real asset, especially those levered to higher commodity prices and
Volatility	Volatility usually rises when inflation is high/rising, so "long vol" option trades and structured notes help hedge
Cash (3m T-bills)	Poor if held indefinitely, but useful if held as dry powder to be invested at higher rates, cheaper prices

Source: UBS, as of 17 June 2021

TIPS: Counter to their name, inflation-linked bonds are not necessarily good inflation hedges in the short term because their prices are sensitive to changes in real interest rates. Real rates can be volatile, and they're currently deeply negative and likely to rise. This could happen quickly if job growth is strong and inflation stays elevated, leading to a more aggressive Fed response than the market is expecting. As a result, TIPS are not that attractive tactically as an inflation hedge. TIPS value as an inflation hedge is greater over the long term, especially if a ladder can be constructed to match inflation-adjusted principal payment with future cash flow needs.

Value and natural resource stocks: Equities as an asset class are adversely impacted by high and rising inflation in the short term, but there are relative winners in both the short and long term. These include energy and materials stocks that should benefit from higher commodity prices over time, financials that gain from higher rates and steeper curves, assuming economic growth is still solid, and industrials that are levered to strong global growth. Companies with high nominal debt that's inflated away and those with enough pricing power to pass along price increases also tend to be relative outperformers.

Volatility: High inflation typically leads to higher macro volatility, which translates into higher rate and equity volatility. Consequently, being long volatility in some form is an effective hedge, assuming that the position was put on when volatility was relatively low and therefore cheap. Such exposure can be achieved in multiple ways, whether directly through option strategies (for those who can invest in options) to get downside protection or structured products.

Volatilities across asset classes have been declining as the economy has recovered and the pandemic eased, potentially providing a more attractive entry point for hedging.

Cash (3m T bills): Counter-intuitively, cash has actually been a pretty good hedge in the past, though the reason why is unlikely to apply in this cycle. Money literally sitting in cash will have a negative real return equal to the inflation rate. But money invested in 3m T-bills that are continually rolled over will benefit from reinvesting at higher yields, assuming they've gone up as the Fed responds to higher inflation by raising rates. In effect, the T-bills are perpetually earning inflation plus a small premium, without the duration exposure of Treasury bonds. If Fed rate hikes in this cycle don't start for at least two years, this strategy won't be effective until it does.

Asset allocation considerations in an inflation regime

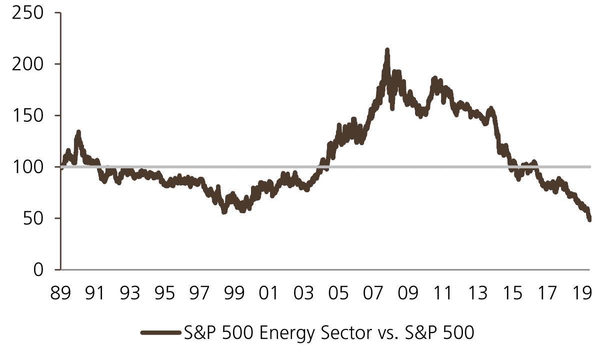
The medium-to-long term inflation outlook remains uncertain, as does the Fed's tolerance for an inflation overshoot and the likelihood that it will fall behind the curve. At a minimum an inflationary regime is an upside tail risk and markets will be highly attuned to any incoming inflation data. Thus, investors need to be prepared for these possibilities, by potentially making changes to their portfolios and their asset allocation strategy. This includes the following considerations.

First, an inflationary regime is likely to result in lower asset class returns because higher interest rates will dampen bond returns and create headwinds for equities and other risk assets as risk premia are re-priced higher. But unless inflation remains elevated, causing the Fed to tighten monetary policy into restrictive territory, the downside should be limited.

Second, adding inflation-hedging assets like commodities and real estate to the portfolio helps to provide protection, but there is a risk to doing so if it comes at the cost of expected returns. The best long-term protection against inflation is high portfolio returns, regardless of asset class. This favors increasing the equity allocation and reducing that to bonds.

Third, valuations matter for long-term returns and the relative appeal of inflation hedging assets. The disinflationary growth regime for the past 20 years has resulted in commodities and natural resource stocks, to name two, being cheap relative to equities overall and growth stocks in particular (Fig. 17). This adds to their appeal as inflation diversifiers.

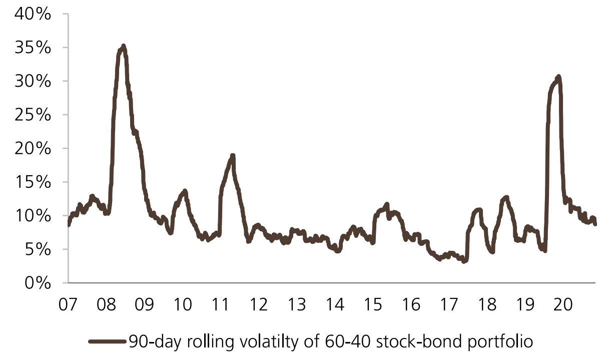
Fig. 17: Energy stocks underperformed the S&P 500 last decade



Source: Bloomberg, UBS, as of 17 June 2021

Fig. 18: Inflation can increase the volatility of 60-40 stock-bond portfolios

Returns based on the Bloomberg 60-40 portfolio benchmark



Source: Bloomberg, UBS, as of 17 June 2021

Fourth, inflation pressures are likely to remain concentrated within the US among developed economies. This favors diversifying the equity allocation into other regions with lower expected inflation, which are also cheaper after a decade of US outperformance, for example Japan. This approach worked during the 1970s. EM equities are more vulnerable because they are adversely impacted by higher US rates.

Fifth, the USD should weaken over the long term if US inflation stays high relative to other regions, which is another tailwind for international equity allocations. A weaker dollar also adds modestly to US inflation pressures, perpetuating its downward trend. But on a shorter time frame, the USD could appreciate if markets price in more rates hikes by the Fed.

Sixth, standard 60-40 stock-bond portfolios are likely to be more volatile in an inflation regime than they have been over the past decade (Fig. 18). That's a direct consequence of higher bond and stock volatility, and a positive stock-bond correlation that diminishes portfolio diversification, leaving them more susceptible to macro and policy shocks.

Seventh, the most relevant cost of inflation is the loss of future purchasing power, not temporary market drawdowns as investors adjust to an inflation regime. Given the uncertainty over whether inflation will even stay high, allocating to long-term inflation hedging assets should take priority, especially those that also have relatively cheap valuations.

The bottom line is that investors need to think differently in how they approach asset allocation in an inflationary growth regime compared the disinflationary growth environment of the past two decades. Bonds won't provide the same returns or diversification benefits. Asset classes that lagged for the last 10 years could be the outperformers for the next five. But pivoting to position the portfolio entirely for inflation is too extreme given the uncertainty in the outlook. Instead, a diversity of positions that are expected to vary in how well they perform across inflation scenarios helps to make portfolios more robust. Investors will also need to be nimble because coming out of a pandemic inflation and growth conditions and the Fed's response can change quickly, as we learned after the June FOMC meeting.

Appendix

Non-Traditional Assets

Non-traditional asset classes are alternative investments that include hedge funds, private equity, real estate, and managed futures (collectively, alternative investments). Interests of alternative investment funds are sold only to qualified investors, and only by means of offering documents that include information about the risks, performance and expenses of alternative investment funds, and which clients are urged to read carefully before subscribing and retain. An investment in an alternative investment fund is speculative and involves significant risks. Specifically, these investments (1) are not mutual funds and are not subject to the same regulatory requirements as mutual funds; (2) may have performance that is volatile, and investors may lose all or a substantial amount of their investment; (3) may engage in leverage and other speculative investment practices that may increase the risk of investment loss; (4) are long-term, illiquid investments, there is generally no secondary market for the interests of a fund, and none is expected to develop; (5) interests of alternative investment funds typically will be illiquid and subject to restrictions on transfer; (6) may not be required to provide periodic pricing or valuation information to investors; (7) generally involve complex tax strategies and there may be delays in distributing tax information to investors; (8) are subject to high fees, including management fees and other fees and expenses, all of which will reduce profits.

Interests in alternative investment funds are not deposits or obligations of, or guaranteed or endorsed by, any bank or other insured depository institution, and are not federally insured by the Federal Deposit Insurance Corporation, the Federal Reserve Board, or any other governmental agency. Prospective investors should understand these risks and have the financial ability and willingness to accept them for an extended period of time before making an investment in an alternative investment fund and should consider an alternative investment fund as a supplement to an overall investment program.

In addition to the risks that apply to alternative investments generally, the following are additional risks related to an investment in these strategies:

- Hedge Fund Risk: There are risks specifically associated with investing in hedge funds, which may include risks associated with investing in short sales, options, small-cap stocks, “junk bonds,” derivatives, distressed securities, non-U.S. securities and illiquid investments.
- Managed Futures: There are risks specifically associated with investing in managed futures programs. For example, not all managers focus on all strategies at all times, and managed futures strategies may have material directional elements.
- Real Estate: There are risks specifically associated with investing in real estate products and real estate investment trusts. They involve risks associated with debt, adverse changes in general economic or local market conditions, changes in governmental, tax, real estate and zoning laws or regulations, risks associated with capital calls and, for some real estate products, the risks associated with the ability to qualify for favorable treatment under the federal tax laws.
- Private Equity: There are risks specifically associated with investing in private equity. Capital calls can be made on short notice, and the failure to meet capital calls can result in significant adverse consequences including, but not limited to, a total loss of investment.
- Foreign Exchange/Currency Risk: Investors in securities of issuers located outside of the United States should be aware that even for securities denominated in U.S. dollars, changes in the exchange rate between the U.S. dollar and the issuer’s “home” currency can have unexpected effects on the market value and liquidity of those securities. Those securities may also be affected by other risks (such as political, economic or regulatory changes) that may not be readily known to a U.S. investor.

Structured Products

Investing in structured investments involves significant risks. For a detailed discussion of the risks involved in investing in any particular structured investment, you must read the relevant offering materials for that investment. Structured investments are unsecured obligations of a particular issuer with returns linked to the performance of an underlying asset. Depending on the terms of the investment, investors could lose all or a substantial portion of their investment based on the performance of the underlying asset. Investors could also lose their entire investment if the issuer becomes insolvent. UBS Financial Services Inc. does not guarantee in any way the obligations or the financial condition of any issuer or the accuracy of any financial information provided by any issuer. Structured investments are not traditional investments and investing in a structured investment is not equivalent to investing directly in the underlying asset. Structured investments may have limited or no liquidity, and investors should be prepared to hold their investment to maturity. The return of structured investments may be limited by a maximum gain, participation rate or other feature. Structured investments may include call features and, if a structured investment is called early, investors would not earn any further return and may not be able to reinvest in similar investments with similar terms. Structured investments include costs and fees which are generally embedded in the price of the investment. The tax treatment of a structured investment may be complex and may differ from a direct investment in the underlying asset. UBS Financial Services Inc. and its employees do not provide tax advice. Investors should consult their own tax advisor about their own tax situation before investing in any securities.

Appendix

UBS Chief Investment Office's ("CIO") investment views are prepared and published by the Global Wealth Management business of UBS Switzerland AG (regulated by FINMA in Switzerland) or its affiliates ("UBS").
The investment views have been prepared in accordance with legal requirements designed to promote the **independence of investment research**.
Generic investment research – Risk information:
This publication is **for your information only** and is not intended as an offer, or a solicitation of an offer, to buy or sell any investment or other specific product. The analysis contained herein does not constitute a personal recommendation or take into account the particular investment objectives, investment strategies, financial situation and needs of any specific recipient. It is based on numerous assumptions. Different assumptions could result in materially different results. Certain services and products are subject to legal restrictions and cannot be offered worldwide on an unrestricted basis and/or may not be eligible for sale to all investors. All information and opinions expressed in this document were obtained from sources believed to be reliable and in good faith, but no representation or warranty, express or implied, is made as to its accuracy or completeness (other than disclosures relating to UBS). All information and opinions as well as any forecasts, estimates and market prices indicated are current as of the date of this report, and are subject to change without notice. Opinions expressed herein may differ or be contrary to those expressed by other business areas or divisions of UBS as a result of using different assumptions and/or criteria.
In no circumstances may this document or any of the information (including any forecast, value, index or other calculated amount ("Values")) be used for any of the following purposes (i) valuation or accounting purposes; (ii) to determine the amounts due or payable, the price or the value of any financial instrument or financial contract; or (iii) to measure the performance of any financial instrument including, without limitation, for the purpose of tracking the return or performance of any Value or of defining the asset allocation of portfolio or of computing performance fees. By receiving this document and the information you will be deemed to represent and warrant to UBS that you will not use this document or otherwise rely on any of the information for any of the above purposes. UBS and any of its directors or employees may be entitled at any time to hold long or short positions in investment instruments referred to herein, carry out transactions involving relevant investment instruments in the capacity of principal or agent, or provide any other services or have officers, who serve as directors, either to/for the issuer, the investment instrument itself or to/for any company commercially or financially affiliated to such issuers. At any time, investment decisions (including whether to buy, sell or hold securities) made by UBS and its employees may differ from or be contrary to the opinions expressed in UBS research publications. Some investments may not be readily realizable since the market in the securities is illiquid and therefore valuing the investment and identifying the risk to which you are exposed may be difficult to quantify. UBS relies on information barriers to control the flow of information contained in one or more areas within UBS, into other areas, units, divisions or affiliates of UBS. Futures and options trading is not suitable for every investor as there is a substantial risk of loss, and losses in excess of an initial investment may occur. Past performance of an investment is no guarantee for its future performance. Additional information will be made available upon request. Some investments may be subject to sudden and large falls in value and on realization you may receive back less than you invested or may be required to pay more. Changes in foreign exchange rates may have an adverse effect on the price, value or income of an investment. The analyst(s) responsible for the preparation of this report may interact with trading desk personnel, sales personnel and other constituencies for the purpose of gathering, synthesizing and interpreting market information.
Tax treatment depends on the individual circumstances and may be subject to change in the future. UBS does not provide legal or tax advice and makes no representations as to the tax treatment of assets or the investment returns thereon both in general or with reference to specific client's circumstances and needs. We are of necessity unable to take into account the particular investment objectives, financial situation and needs of our individual clients and we would recommend that you take financial and/or tax advice as to the implications (including tax) of investing in any of the products mentioned herein.
This material may not be reproduced or copies circulated without prior authority of UBS. Unless otherwise agreed in writing UBS expressly prohibits the distribution and transfer of this material to third parties for any reason. UBS accepts no liability whatsoever for any claims or lawsuits from any third parties arising from the use or distribution of this material. This report is for distribution only under such circumstances as may be permitted by applicable law. For information on the ways in which CIO manages conflicts and maintains independence of its investment views and publication offering, and research and rating methodologies, please visit www.ubs.com/research. Additional information on the relevant authors of this publication and other CIO publication(s) referenced in this report; and copies of any past reports on this topic; are available upon request from your client advisor.
Options and futures are not suitable for all investors, and trading in these instruments is considered risky and may be appropriate only for sophisticated investors. Prior to buying or selling an option, and for the complete risks relating to options, you must receive a copy of "Characteristics and Risks of Standardized Options". You may read the document at https://www.theocc.com/about/publications/character-risks.jsp or ask your financial advisor for a copy.
Investing in structured investments involves significant risks. For a detailed discussion of the risks involved in investing in any particular structured investment, you must read the relevant offering materials for that investment. Structured investments are unsecured obligations of a particular issuer with returns linked to the performance of an underlying asset. Depending on the terms of the investment, investors could lose all or a substantial portion of their investment based on the performance of the underlying asset. Investors could also lose their entire investment if the issuer becomes insolvent. UBS Financial Services Inc. does not guarantee in any way the obligations or the financial condition of any issuer or the accuracy of any financial information provided by any issuer. Structured investments are not traditional investments and investing in a structured investment is not equivalent to investing directly in the underlying asset. Structured investments may have limited or no liquidity, and investors should be prepared to hold their investment to maturity. The return of structured investments may be limited by a maximum gain, participation rate or other feature. Structured investments may include call features and, if a structured investment is called early, investors would not earn any further return and may not be able to reinvest in similar investments with similar terms. Structured investments include costs and fees which are generally embedded in the price of the investment. The tax treatment of a structured investment may be complex and may differ from a direct investment in the underlying asset. UBS Financial Services Inc. and its employees do not provide tax advice. Investors should consult their own tax advisor about their own tax situation before investing in any securities.
Important Information About Sustainable Investing Strategies: Sustainable investing strategies aim to consider and incorporate environmental, social and governance (ESG) factors into investment process and portfolio construction. Strategies across geographies and styles approach ESG analysis and incorporate the findings in a variety of ways. Incorporating ESG factors or Sustainable Investing considerations may inhibit the portfolio manager’s ability to participate in certain investment opportunities that otherwise would be consistent with its investment objective and other principal investment strategies. The returns on a portfolio consisting primarily of sustainable investments may be lower or

higher than portfolios where ESG factors, exclusions, or other sustainability issues are not considered by the portfolio manager, and the investment opportunities available to such portfolios may differ. Companies may not necessarily meet high performance standards on all aspects of ESG or sustainable investing issues; there is also no guarantee that any company will meet expectations in connection with corporate responsibility, sustainability, and/or impact performance.

External Asset Managers / External Financial Consultants: In case this research or publication is provided to an External Asset Manager or an External Financial Consultant, UBS expressly prohibits that it is redistributed by the External Asset Manager or the External Financial Consultant and is made available to their clients and/or third parties.

USA: Distributed to US persons by UBS Financial Services Inc., UBS Securities LLC or UBS Swiss Financial Advisers AG, subsidiaries of UBS AG. UBS Switzerland AG, UBS Europe SE, UBS Bank, S.A., UBS Brasil Administradora de Valores Mobiliarios Ltda, UBS Asesores Mexico, S.A. de C.V., UBS Securities Japan Co., Ltd, UBS Wealth Management Israel Ltd and UBS Menkul Degerler AS are affiliates of UBS AG. UBS Financial Services Incorporated of Puerto Rico is a subsidiary of UBS Financial Services Inc. **UBS Financial Services Inc. accepts responsibility for the content of a report prepared by a non-US affiliate when it distributes reports to US persons. All transactions by a US person in the securities mentioned in this report should be effected through a US-registered broker dealer affiliated with UBS, and not through a non-US affiliate. The contents of this report have not been and will not be approved by any securities or investment authority in the United States or elsewhere. UBS Financial Services Inc. is not acting as a municipal advisor to any municipal entity or obligated person within the meaning of Section 15B of the Securities Exchange Act (the "Municipal Advisor Rule") and the opinions or views contained herein are not intended to be, and do not constitute, advice within the meaning of the Municipal Advisor Rule.**

For country information, please visit ubs.com/cio-country-disclaimer-gr or ask your client advisor for the full disclaimer.

Version C/2020. CIO82652744