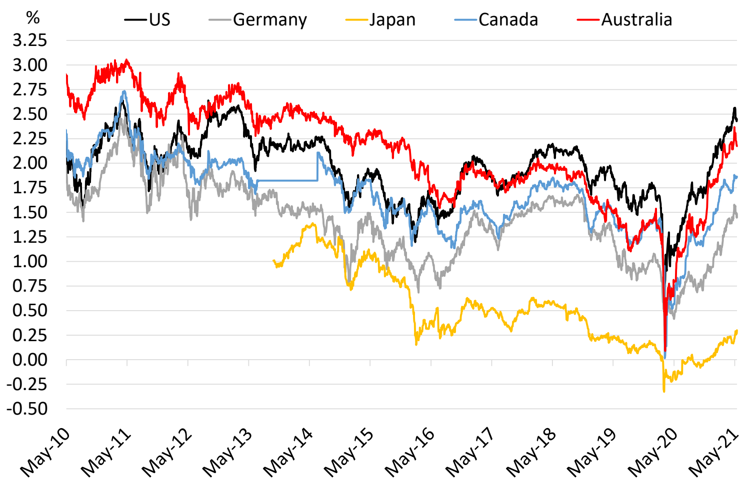
# Are interest rate markets pricing an inflation problem?

- Global rates market pricing for inflation has surged to multi-year highs.
- The market reaction to recent data and survey indicators suggests investors are more worried about inflation risks than many economists.
- Inflation curves, however, reflect expectations for only temporary inflation pressures and show large cross-market differences.
- Longer term forward inflation pricing levels are close to central bank targets and below levels that would typically signal a major concern for multi-asset investors.
- Inflation tail risks – both higher and lower – have grown significantly and could lead to bouts of pressure across markets over the coming months and years.
- Interest rate volatility is low despite the wider than usual distribution of inflation risks.

## Reflation pricing in full swing

The inflation expectations component of long-term bond yields (breakeven inflation rates or BEIs) have surged higher over the last year, after reaching record low levels at the onset of Covid-19 in March 2020 (for a primer on inflation-linked bonds and how expectations are implied see here). The bounce back in inflation expectations initially reflected a recovery from extreme economic disruption and liquidity pressures. The repricing has since gone on to eclipse pre-COVID levels and reach multi-year highs across markets. As Chart 1 shows, 10y BEIs in the US and Australia are at the highest levels in eight and six years, respectively.

Chart 1: 10Y Breakeven Inflation Rates



*Source: Ardea, Bloomberg*

We have previously published a bigger picture note on inflation, which covered some of the distinctions between the shorter and longer run forces at play (see here). In this note, we focus more on the market implications, but briefly summarize a few of the major macro drivers of higher inflation expectations:

- Temporary supply bottlenecks resulting from Covid restrictions
- A large increase in household income from fiscal stimulus
- Pent-up demand for goods and services following lockdowns
- A surge in growth and fall in unemployment as vaccines allow for economies to reopen
- Central banks committed to maintaining highly accommodative policies until well after a rise in inflation (and not pre-emptively, as in previous cycles)
- Rebounding global growth pushing up commodity prices, which feeds through to higher input costs for many industries

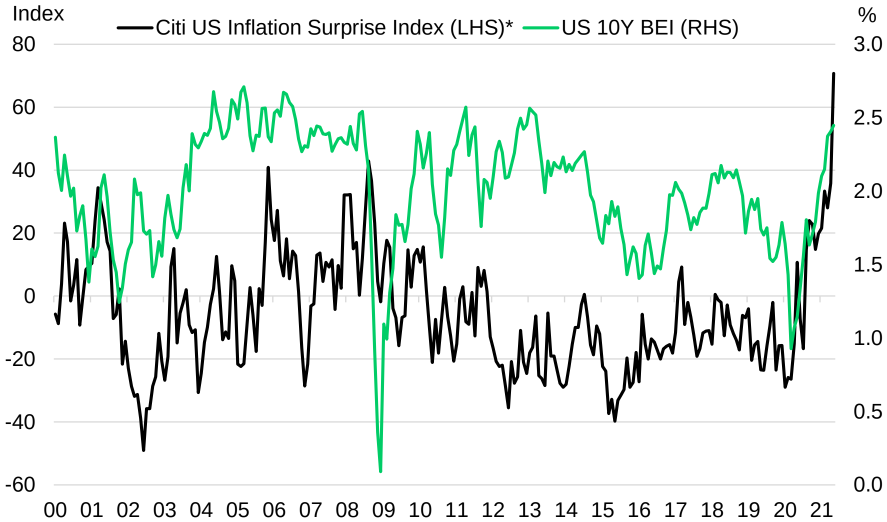
## Investors are more concerned than economists about rising inflation

Market pricing for inflation is reacting to both expected and realized inflation pressures, which are uneven across markets. Among developed economies, the US is experiencing an especially sharp rebound in growth and inflation, which is already evident in data. The latest US CPI report (for April) showed a 0.8% m/m and 0.9% m/m increase in headline and core CPI, respectively. That core increase is the fastest monthly rebound since 1981. The y/y rise in the headline measure of 4.3% is the highest since 2008 and the 3.0% y/y rise in the core measure is the highest since 1996. The data well exceeded consensus expectations and the headline increase was higher than the forecast of all economists surveyed by Bloomberg.

Of course, investors should never read too much into a single data print, especially while base effects upwardly bias the annual figures and those monthly numbers reflect a lot of temporary factors. Many economists have de-constructed the numbers to show that upward price pressures in many individual components will naturally run out of steam as supply catches up and/or pent-up demand is exhausted. Fed Governors have reiterated their view that inflation pressures will likely prove temporary.

Notwithstanding the cold water thrown on the data by economists, the sheer size of the monthly increase and the extent to which consensus under-estimated the jump weighed heavily on nominal bonds and helped BEIs and inflation swap rates reach new highs in May. This market reaction, while ultimately contained later in the month, highlights the difference in perspective between those that forecast inflation and those that manage the risk of higher inflation in portfolios. Investors and traders are more concerned than forecasters, which is why the price of protection has risen so much. This new wall of worry stands in contrast with the trend of the last decade, where inflation had persistently undershot expectations and markets are adjusting accordingly (Chart 2).

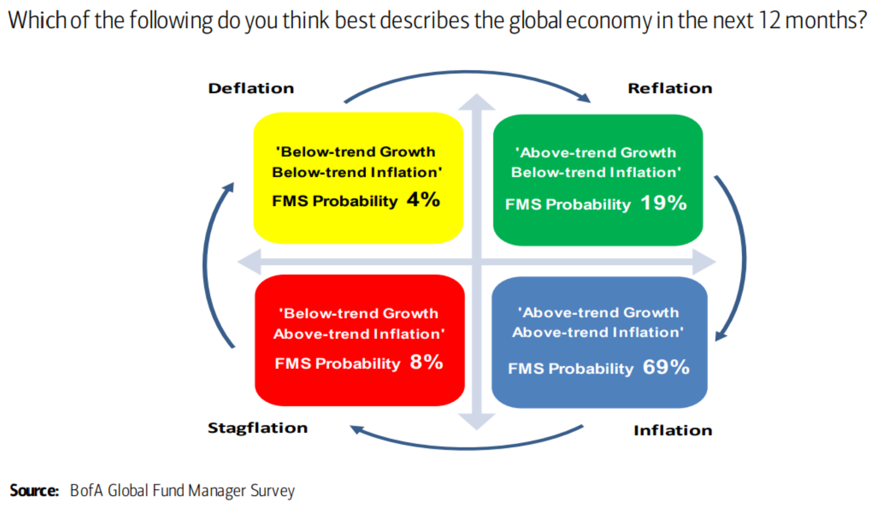
Chart 2: US inflation surprises vs 10y BEI




Source: Ardea, Bloomberg
*Index below zero is inflation below expectations

Evidence of this investor concern is also reflected in surveys. A monthly Bank of America Survey asks global fund managers to list the biggest tail risks facing markets. Since March the answer has been higher inflation or a "bond tantrum" for the first time in a decade and inflation displaced Covid as the biggest risk for the first time in a year. The same survey showed a record high 69% of participants listed "above-trend growth and above-trend inflation" as the most likely outcome for the global economy over the next 12 months, well above expectations for deflationary and trend inflation outcomes (Chart 3).

Chart 3: BofA Global Fund Manager Survey (May 2021)




## Inflation curves highlight temporary pressure and cross-market divergence

A simple gauge for whether the market is pricing an inflation problem is to compare inflation swap rates with central bank targets (Table 1). The market is clearly pricing above the target level in the US in the short term. However, the Fed's revised approach to policy – formally agreed last year – explicitly allows for a temporary overshot of the inflation target. The longer-term measure of inflation pricing – the 5y forward, 5y inflation swap rate – is around 40bp above the 2% target. There are, however, some technical nuances with the US pricing. The swap rate is based on CPI, while the Fed is arguably more interested in the core PCE inflation measure, which has averaged around 30bp lower than CPI over the last 20 years. After accounting for this measurement difference, the market is expecting inflation to roughly average around the Fed's target in the long run (and there are also normal tolerances for so-called inflation risk premia, which are affected by the insurance value of inflation securities, liquidity and other factors).

Table 1: Central bank target and inflation pricing in the US, Europe and Australia*

| | Central Bank Target | 2y Inflation Swap | 5y5y Inflation Swap |
|---|---|---|---|
| US | 2.00 | 3.05 | 2.42 |
| EUR | 1.90 | 1.72 | 1.55 |
| AUS | 2.50 | 2.28 | 2.53 |

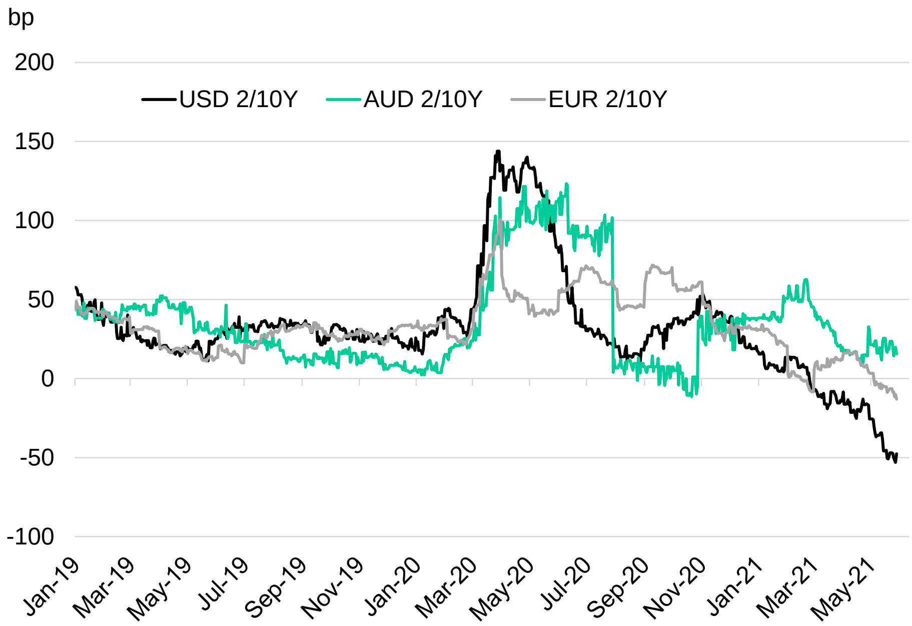
*Source: Ardea, Bloomberg (28-May-21)*

** The ECB targets "close to, but below 2.0%"*

*The RBA targets a 2.0-3.0% range*

The EUR and AUD markets are not pointing to either a major temporary or a longer run inflation problem relative to respective ECB and RBA targets, even as both markets have seen inflation swap levels climb considerably in recent months and some indicators point to rising input costs. Consistent with rising short-term, but not long-term inflation pressures, Chart 4 shows significant recent flattening of US and EUR inflation curves.

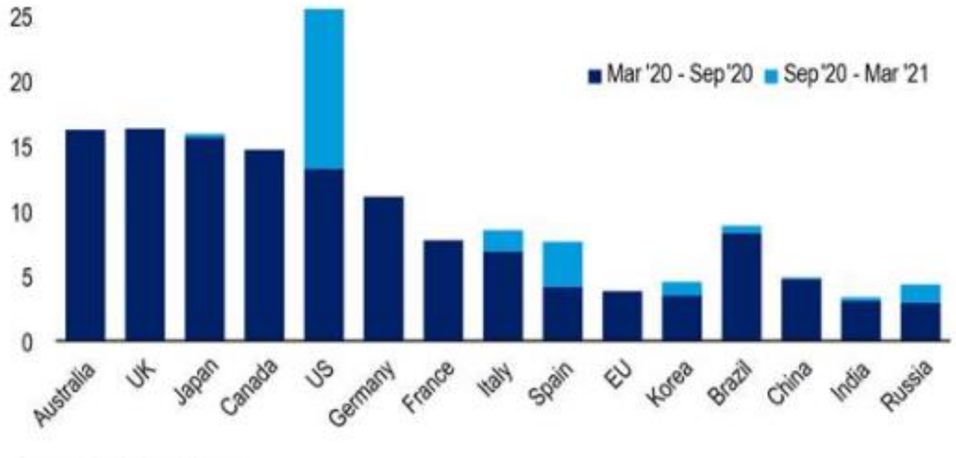
Chart 4: 10y less 2y inflation swap curve spreads




Source: Ardea, Bloomberg

In terms of the cross-market variance in inflation levels, the higher expected US inflation level, especially over the next few years, reflects faster activity and price momentum. This outperformance is being fueled by much larger fiscal stimulus worth around an additional 10% of GDP above peer economies (Chart 5). Structural differences are also relevant. For instance, the EUR economy has faced more persistent excess labour slack and other disinflationary forces over the last decade than the US or Australia.

Chart 5: Fiscal stimulus (% of GDP)




**Source:** IMF, BofA Global Research.

## What level of inflation are multi-asset investors really worried about?

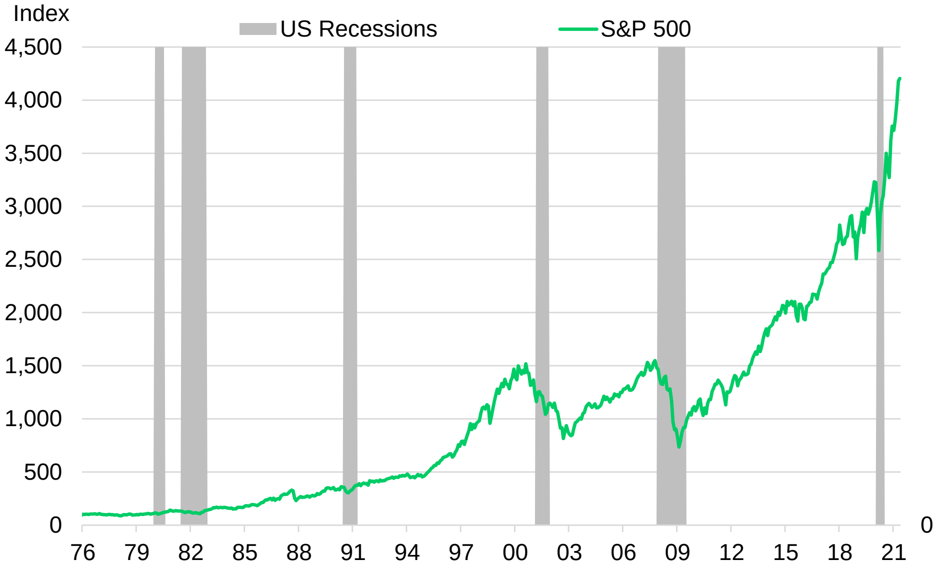
A moderate rise in inflation that temporarily overshoots central bank targets is arguably something of concern for bond investors, but manageable for active strategies and generally not a big deal for multi-asset investors. There is, however, a more worrying risk case, where inflation has much bigger negative implications for broader portfolios. In our last update on inflation, we discussed in broad terms, the idea of "good" vs "bad" inflation:

- **Good inflation:** higher inflation that is seen as a desirable side effect of stronger economic growth; even if inflation modestly overshoots central bank target ranges, the consensus remains confident that it won't get out of control; bond markets may incur losses as yields rise but it happens in an orderly way and risk assets continue performing well.
- **Bad inflation:** the consensus becomes fearful of runaway inflation that will eventually force central banks to raise interest rates aggressively; bond markets get hit with a violent sell-off that eventually spills over into hurting risk assets.

So far, the repricing in interest rate market expectations for inflation is more consistent with the "good" inflation scenario for multi-asset portfolios. This view is self-evident in market trends over recent months, given the broad upswing in equity markets and credit spreads at historically tight levels.

At what point should multi-asset investors be worried? Identifying the tipping point whereby inflationary pressure cascades into materially higher bond yields and weaker risk assets is tricky, since it involves controlling for the range of other forces at play. A basic historical observation is that US equity bull markets tend to end when the business cycle rolls over (Chart 6), rather than at a specific level of actual or market-implied inflation or at a time when growth is accelerating as it is at present. The link with inflation is historically better viewed through Fed policy settings. Significant Fed policy tightening amid rising (or anticipated) inflation have typically preceded downturns, although the timing and magnitude is inconsistent over time. In terms of rough rules-of-thumb, many investors focus on an inverted yield curve as a signal of a recession. This limited framework doesn't currently signal a problem, given genuinely tight monetary policy and an inverted curve appears to be many years away.

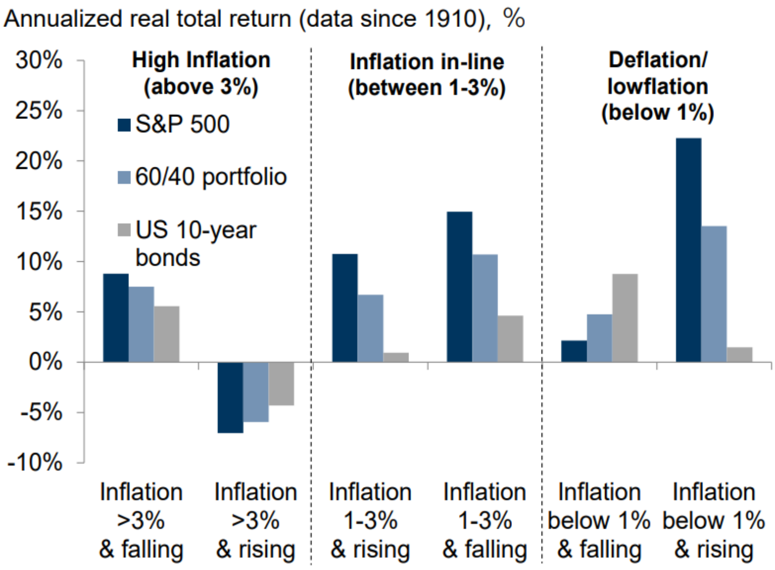
Chart 6: S&P 500 and recessions




*Source: Ardea, Bloomberg, NBER*

The level, speed and drivers of higher inflation and bond yields are important. Low but rising inflation tends to be the best macro backdrop for US equities and a 60/40 portfolio. Over the very long-run, Chart 7 from Goldman Sachs research highlights the danger-zone for equities and 60/40 portfolios tends to be inflation above 3% and rising - a level priced into only the very front end of the US inflation curve. With the Fed and market viewing this rise as temporary, the risk for multi-asset investors is a more prolonged rise in inflation or a market belief that the Fed is significantly behind the curve. This credibility question is a key risk, as investors are just coming to grips with the Fed's average inflation targeting framework and even temporary price pressures could quickly become uncomfortable for bond markets.

Chart 7: US equities and bond returns under low and high inflation regimes



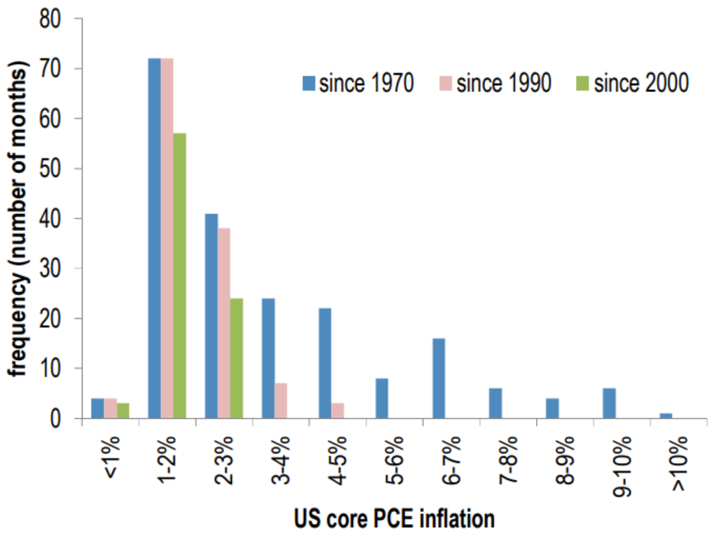

*Source: Robert Shiller, Goldman Sachs GIR.*

## Inflation tail risks are rising

We've shown the market has significantly repriced for a higher average inflation outlook, investors are generally more concerned than economists about inflation and that curves suggest a temporary and not sustained US-led overshoot in CPI. While this backdrop hardly suggests a catastrophe for markets, there are now much larger tail risks – that is inflation tracking either much higher or lower than current market expectations.

This increase in tail risks stands in contrast with the norm of the last two decades, where realized core inflation in the US and other developed economies has been typically confined to around 1-2%, with much fewer >3% readings (Chart 8) and consistent undershoots relative to forecasts. This backdrop led to the capitulation of higher inflation regime expectations pre-Covid. And the market is only now awakening to the possibility of a reversal (as we argued in our previous *Reflation* note).

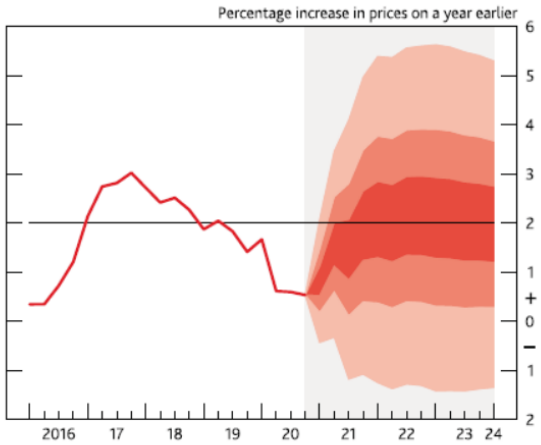
Chart 8: The declining frequency of above 3% inflation outcomes




*Source: JP Morgan*

The Bank of England provides a good recent guide to just how uncertain inflation forecasting has become in 2021 relative to pre-Covid. The BoE publishes confidence intervals around its CPI projections (Chart 9) at policy reviews. This year, the confidence intervals for two-year ahead projections are double the normal size, implying there is a one-in-three chance inflation could be below zero or above 4% in 2023! (see BoE Chief Economist Andy Haldane's recent speech for a detailed discussion on UK inflation uncertainty.)

Chart 9: Bank of England CPI projection with twice the normal confidence interval

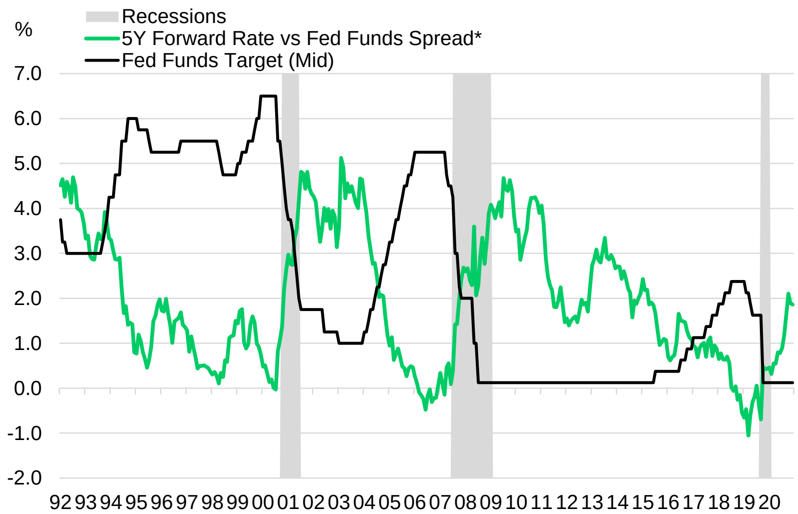



Source: Bank of England.

In the context of much higher than usual inflation uncertainty, inflation markets appear to be priced for perfection. The market expects central bank targets to be met with at worst only a brief overshoot. While risks appear tilted to the upside for inflation based on recent data, the reality is that inflation has become even more difficult to forecast over the last decade and there is a case to be made for much higher or lower outcomes than markets currently assume. Which way depends on whether one places more emphasis on longer run constraints such as demographics and technology or on a potential game-changer such as a permanent fiscal and monetary union. The outcome will not be known for a few years.

The heightened uncertainty has important implications for the assumed path of central bank policy. In 2021 interest rate markets have dramatically increased pricing for rate hikes in the coming years, even as central banks remain committed to keeping policy rates at the lower bound and in many cases maintaining large asset purchase programs for several years. The US curve is currently priced for around 200bp of rate hikes over the next five years, a large increase on the roughly 120bp of hikes implied at the start of 2021. But that still marks a slow tightening cycle relative to historical episodes of higher inflation and even the last two recoveries from recessions (Chart 10). If instead inflation underwhelms, the 2020 experience shows that there is a long way for this pricing to fall.

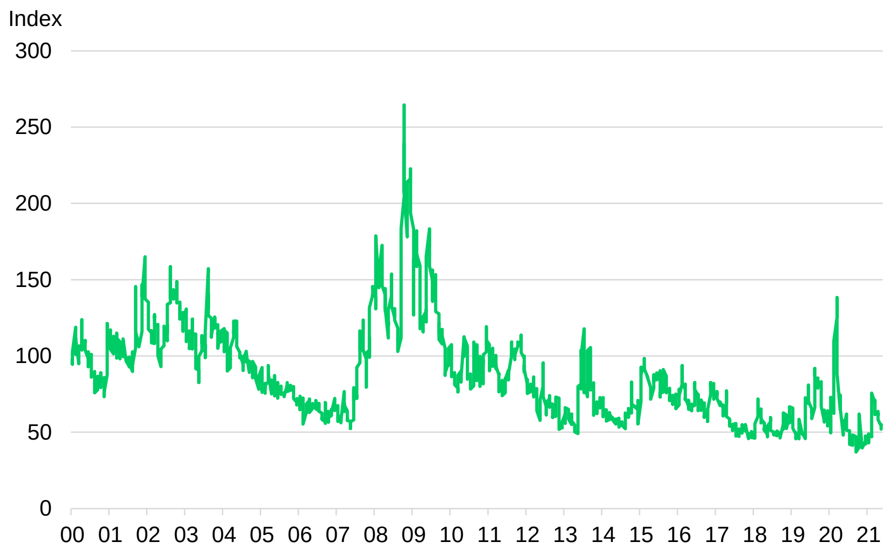
Chart 10: Nominal rate pricing has lifted a long way, but is still low relative to prior recoveries




*Source: Ardea, Bloomberg, NBER*
**5Y Forward, 3M rate less Fed Funds/LIBOR*

The much wider scope for inflation to surprise markets means interest rate volatility has the potential to rise by a lot if either the lower or higher tail risk outcomes come into play. Rising rates volatility, particularly if associated with the higher inflation scenario, could have significant consequences for risk assets and multi-asset portfolios given the benign path currently assumed. Interest rate volatility strategies have an asymmetric payoff if either of these inflation tail risk outcomes eventuates. Current US option-implied volatility is broadly subdued by historical standards (Chart 11).

Chart 11: MOVE Index of US Treasury volatility




*Source: Ardea, Bloomberg*

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