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Vantage Point

Q1. 2023

Pivotal year

Introduction

Welcome to another edition of Vantage Point and our look ahead to 2023.

As I write this, risk assets are rallying on the hope that inflation may come down quickly and a recession might be avoided in the United States. Inflation does seem to have fallen faster than expected in the past few months, though core remains worryingly high in all the major economies. To cut to the chase, our sense is this relief rally may be somewhat premature and that rather more economic slack will have to be created before inflation heads meaningfully back towards target. That said, the 'soft landing' narrative remains powerful in equity markets, so it is worth trying to understand what kind of circumstances would bring it about.

We think a 'soft landing' would need a lot of things to go right from here on. First, inflation would have to keep surprising to the downside, particularly among the 'stickier' components such as housing and core services. Second, the United States labor market would have to weaken sufficiently to keep wage inflation in check, but not so much that unemployment rises sharply above 5%. That would mean a labour market adjustment of a kind we've never seen before: one in which slack is created by job vacancies falling sharply, rather than employment itself, and with labour supply rising as the 'great resignation' and 'great retirement' go into reverse. Third, households would have to continue to cushion the squeeze on real incomes by dipping into savings pots and wealth accumulated during Covid, driving the recorded household saving rate even lower for longer. And finally, it would require the Federal Reserve to recognise all of this soon, slowing the pace of rate hikes and edging towards a lower terminal rate in the 4½ -5% range. All of this could happen, but it still feels odds against to us, so while we retain a 'soft landing' scenario we also retain its odds-against probability of just 30%. Our fan charts, which reflect not just these probabilities, but the path output is likely to follow in each scenario, imply the chances of a soft landing in the US are around 40% in 2023.

Meanwhile, things look tougher in the rest of the world. China is still grappling with a property-led slowdown, intensified by occasional regional lockdowns in support of 'zero Covid'. Even though market sentiment has improved on preliminary signs that the zero Covid policy itself is being reassessed, local cases have soared in recent days and cast doubt about a seamless shift to a normalization of activity. Nevertheless, Chinese domestic demand remains weak and monthly indicators point to another slowdown in Q4. Policy has been loosened, but not as dramatically as during previous slowdowns – policy makers are hesitant about further policy divergence with the Fed and being wary of bailing out the property sector.

Europe is where the energy crisis has hit hardest of course – the Eurozone has suffered a terms of trade loss of around 3%, which means national income must fall by roughly that amount, while all policy makers can do is decide whether households, companies or taxpayers bear the brunt of that loss. Even here however, there have been positive signs. Substitution out of Russian gas has been relatively rapid, the winter has been mild to date, gas storage levels are high and gas prices have fallen back sharply as a result. The Eurozone printed positive growth in Q3, to the surprise of many, though it looks very likely to fall into recession by the end of the year. Meanwhile, Eurozone inflation looks uncomfortably high – core is now higher than in the US – and the European central Bank rhetoric has been tough. Underlying nominal demand has not been as strong as in the US however so we suspect that, while Eurozone rates have further to rise, they are unlikely to peak as high as in the US, despite the rhetoric.

In the few short weeks since we last published Vantage Point, the UK has had two Prime Ministers and two Chancellors of the Exchequer. The devastating market reaction to ex-PM Truss's "dash for growth through unfunded tax cuts" put paid both to that policy and her ill-fated government. Policy under new PM Sunak has

returned to orthodoxy and new Chancellor Hunt announced a 2% of GDP discretionary fiscal tightening in his Autumn Statement at the end of November. Meanwhile, the Bank of England has suggested the UK is entering its longest recession since the second world war and that interest rates will not have to rise as far as markets had been pricing in (5%). My fear had been the UK might set a poor fiscal example to the rest of the world by tightening fiscal policy too much during a recession, for fear of the bond vigilantes and to take some of the pressure off the Bank of England. In the event, much of the tightening has been delayed for a couple of years, reducing the risk of intensifying the downturn unnecessarily and reaffirming the idea that control of inflation is primarily the central bank's responsibility. If other countries do not follow this example, the upshot could be an overly tight policy stance worldwide, plus an inappropriate mix between monetary and fiscal.

With Europe and the UK in or approaching recession, China slowing sharply and the US 'needing' one to bring inflation back to target, it is our belief that 'Global Recession' remains our single most likely scenario – we give it a 60% probability. Moreover, events in the UK also show that rising interest rates in world of high and sometimes hidden leverage can mean 'Something Breaks'. The most worrying kinds of leverage probably lie outside the formal banking sector, as with UK pension funds, but precisely what might break is hard to judge. To borrow a metaphor popularized by Larry Summers: 'when road conditions are icy, we know cars are going to get damaged, we just don't know which ones they'll be'. We therefore retain our 'Something Breaks' scenario (10% probability), in which some kind of financial crisis both intensifies the recession (compared with 'Global Recession') but also causes policy to be eased much sooner.

As usual, we present our forecasts in the form of fan charts that encapsulate the information in all our scenarios succinctly. These show that output is likely to fall in 2023, with risks to the downside. Inflation will probably fall too, but relatively slowly, remaining above target for some time, with risks to the upside. As a result, despite recession, interest rates are set to rise further, though with risks to the downside. All this stands in stark contrast to the 'soft landing' narrative building up in equity markets and, as a result, make us more sceptical than those who buy into the 'imminent pivot' story.

Our investment conclusions follow logically. Is it time to call the bottom and go overweight equities? According to our outlook – no. There's a stronger case for increasing allocations to fixed income, which does well in a couple of diametrically opposed circumstances: first, if there's a soft landing and rates don't have to rise nearly as much as markets currently expect. Or second, if rates do rise and the economy goes into recession, curves invert further and eventually fall. Overall, though, our analysis suggests defensive positioning remains sensible for now, with cash and deleveraging trades our favoured asset classes. At some point soon, that advice will change, and we recognize there's a risk of attempting to be too precise with market timing. However, our reading of the fundamentals is that there is a lot of pain yet to come and that hoping for the best, while natural and comforting, may not be the best investment approach to take.

SHAMIK DHAR
CHIEF ECONOMIST

Vantage Point summary

As in the last edition of Vantage Point, we summarize our analysis by showing a summary of our outlook over the 12 months in terms of the level for GDP growth, inflation and monetary policy support (see Table 1).

We then highlight how our fan charts and market expectations differ – in terms of average expectations for the variables considered, and uncertainty around such expectations (see Table 2). Broadly, the idea is that a significant share of moves in financial market can be explained by the 3 macro factors considered – growth, inflation and monetary policy -, that macro-driven tactical investment opportunities arise when there is a substantial discrepancy between our own views and what is priced in by the market, and that conviction around our tactical investment views is highest the lower the uncertainty around our forecast (See Table 3).

TABLE 1: SUMMARY OF OUR OUTLOOK

How to read the heatmap. **Green** indicates above trend growth, below target inflation, policy accommodation and lower-than-average levels of uncertainty. **Grey** indicates economic growth in line with trend, inflation in line with target, a neutral policy stance, and average levels of uncertainty. **Red** indicates below trend growth, above target inflation, a tight policy stance, and higher-than-average levels of uncertainty.

		Growth	Inflation	Policy	Takeaway
Summary of our outlook	**Average expectations**				Growth is weak over the next 12 months, inflation is still above target and policy remains at tight levels.
	Uncertainty				Uncertainty is high given the ambiguity of the policy reaction to slow growth and high inflation, and geopolitical risks.

TABLE 2: OWN FORECAST VS THE MARKET

How to read the heatmap. **Green** indicates that we expect growth to be higher compared to what implied by market prices, inflation to be lower than expected by the market and policy accommodation to be greater than expected. Green also indicates that uncertainty around our macro expectations is lower than what signaled by the market. **Grey** indicates that expectations (or uncertainty around expectations) for economic growth, inflation and policy are broadly in line with the market. **Red** indicates worse than expected growth, greater than expected inflation and a tighter than expected policy stance. Red also indicates that uncertainty around our macro expectations is higher than what signaled by the market.

		Growth	Inflation	Policy	Takeaway
Vantage Point vs the market	**Average expectations**				We see growth disappointing, inflation surprising to the upside and tight policy in line with expectations.
	Uncertainty				Like the market, we recognise the incredibly elevated amount of uncertainty over the outlook.

TABLE 3: SUMMARY OF 12 MONTH INVESTMENT CONCLUSIONS

How to read the heatmap. **Green** indicates overweight. **Grey** indicates neutral. **Red** indicates underweight. Polarized possible outcomes for the economy mean this is an environment to tighten risk budgets and not make bold directional bets.

Asset class	Q4 '22	Q1 '23
Cash		
Fixed Income		
Equities		
Credit		
Alternatives		

Conviction	Rationale
High	Benefits from higher policy and slower growth. Suffers inflation.
High	Suffers from inflation, benefits from the likely recession risk of policy-led volatility.
Medium	Suffers from slower growth and tight policy, ambiguous for inflation.
Medium	Suffers from slower growth, higher inflation and tight policy.
Medium	Assets that benefit from higher inflation, but are less sensitive to growth and policy.

Executive Summary

OUR NEW SCENARIOS IN BRIEF

30%

PROBABILITY

Scenario 1 – Global 'Softish' Landing

SCENARIO

- Inflation recedes rapidly in the US and in Europe.
- Fed tightening lowers wage growth and job vacancies causing inflation expectations to quickly stabilize.
- Energy price shocks dissipate in Europe on warmer weather and rapid substitution away from Russia.
- China begins to re-open its economy following a calibrated easing of Covid restrictions.
- The major advanced economies and China manage to avoid a recession.
- USD index weakens more than expected.
- Risk-on market sentiment spurred by goldilocks scenario of minimal 'output sacrifice' needed to lower inflation toward target.
- S&P regains 2021 peak in 2024, 10Y yields stabilize around 3.5%.

Financial and macro conditions improve steadily with a sustained decline in inflation in the U.S. with Fed tightening resulting in reduced job offers, slower wage growth and lower core inflation. Europe manages to lower electricity prices for longer on a fortuitous combination of warmer weather, retail prices caps, and a rapid shift away from Russian gas and towards liquified natural gas and other supplies and sources. Meanwhile, the Ukraine-conflict remains localized and fades into the background. At the same time, China eases its Zero-Covid stringency, engineers an orderly exit from lockdowns and provides more stimulus to soften the blow from the downturn in its property sector. Global central banks do not see the need to hike much further. A reversal in market expectations of global policy divergence causes USD strength to abate. The resulting improvements in financial conditions, market sentiment, alongside, normalization of supply chains causes a virtuous cycle of lower inflation with minimal growth (and employment) sacrifice and rising asset prices.

60%

PROBABILITY

Scenario 2 – Global Recession

SCENARIO

- Inflation proves more persistent on core pressures in the US, supply-side problems in Europe.
- Wage growth stays elevated in the US, services inflation stays 'stickily' high.
- Cost of living crisis bites in Europe, with labor bargaining larger wage increases on rising CPI.
- Central banks forced into aggressive tightening mode to wrestle down second round effects.
- Large monetary policy-led recessions follow in advanced economies.
- China treads cautiously on easing lockdowns, fails to provide policy offset, and its growth gets dragged down as well.
- Fed Funds rate peaks around 5.5% in the US, stays above 5% throughout 2023.
- Treasury curve remains inverted, 10-year yields peak at nearly 5% and glide toward 4% by end 2023.
- USD index also continues rising till mid-2023, S&P does not recover to late-2021 peak until 2025.

Inflation stays persistent in advanced economies --brought on by a wage-price spiral in the US and prolonged upstream price pressure in Europe. Fed responds hawkishly, with the ECB not far behind. Tightening financial conditions and erosion of real incomes results in a sizable downturn in Europe in 1H'23, with US following a quarter or two later. China's exit from Covid proves disorderly. Its stop-go approach to lockdowns damages confidence, dents policy efficacy, and results in economic stalling. In this scenario, the "sacrifice ratio" in the US is comparable to that of the Volcker period (early 1980s), with unemployment rising to around 7% – much higher than is currently expected by the market or by the Fed. This eventually causes inflation to fall more rapidly from the second half of 2023. Higher for longer rates – with divergence favouring the USD tightens global financial conditions and – sets off a global recession, denting corporate earnings and risk assets through the first half of 2023.

10%

PROBABILITY

Scenario 3 – Something breaks

SCENARIO

- Russia-Ukraine war escalates, energy prices spike much higher on threat of nuclear conflict.
- US inflation remains sticky at an elevated level, Europe buffeted by renewed energy price shocks.
- The Fed, ECB and other major central banks tighten policy rapidly, but this triggers a financial crisis and rates thereafter come down rapidly.
- Hawkish tightening exposes heretofore unforeseen vulnerabilities in the US and global economies.
- China's reopening is thwarted by further waves of COVID; it encounters a banking crisis as domestic demand and confidence are undermined by inadequate countercyclical policies and market adjustments.
- Aggressive developed market (DM) policy-tightening or geopolitical crisis expose global economic and financial vulnerabilities. These could include:
  - disruptions in U.S. credit, distress in the leveraged loan or less liquid private equity markets;
  - sovereign debt distress in peripheral countries of the Eurozone;
  - emerging market (EM) sovereign or corporate distress on sustained USD strength;
  - a Chinese banking crisis, and rising FX pressure, on a deep slump in the property sector, plummeting consumer sentiment and investor confidence.

This is the tail-risk scenario in which rapid tightening by the world's major central banks, sub-par policy response in China, extreme policy divergence, and conflict escalation imparts an even larger shock to sentiment and activity. In other words, things keep getting worse until *something breaks*. For instance, it could precipitate a crisis-like widening of credit spreads in the U.S. and globally, or a liquidity crunch in the (highly leveraged) private equity sector. It might precipitate a European-debt-crisis like widening of sovereign credit spreads in Europe's periphery. Perhaps Chinese authorities are unable to ring-fence (let alone, offset) the spill-over from its property sector to its broader economy. That could prompt a downward spiral in sentiment and confidence which exposes more widespread insolvencies and a freeze-up across its banking sector, or prompt larger FX pressures. Finally, net commodity importing emerging markets could see a run on their currency or credit --as many such economies have rigid exchange rate regimes, narrow economic bases, thin policy and liquidity buffers and large USD liabilities.

INVESTMENT CONCLUSIONS

After 2022's financial market performance, one would be forgiven for thinking "2023 can't be worse?" But the difficult to accept reality is that markets are likely to remain under pressure well into 2023. That said, unlike 2022's "batten-down the hatches" asset allocation strategy, we expect that in the 6–12-month outlook, there will be select asset classes that tactically outperform at different points due to the evolving business cycle and changing monetary policy landscape. This presents a challenge for investors but also ample opportunities to add value.

Our asset class fan charts suggest that bonds have an edge over equities in the near-term due to their downside mitigation during growth slowdowns, while equities may outperform strongly in the latter part of 2023 and into 2024 if/and when economies rebound on the other side of recession. Regionally, we prefer US equity to developed international and EM primarily due to the higher (albeit still low) likelihood of an engineered soft landing, which would boost US equity disproportionally. The outlook suggests staying defensive on a sector and factor basis, preferring healthcare and consumer staples, and quality and low volatility, respectively. We also continue to favour higher income and value equities for their lower exposure to re-rating risk and wide multiples spread to growth.

Within fixed income, we prefer developed market sovereigns on the back of the nascent disinflationary trend, real policy rates nearing positive territory, and several central banks downshifting the pace of rate hikes. Meanwhile, corporate credit remains at risk of wider credit spreads as economic activity deteriorates and financial conditions remain tight. We prefer IG to HY and think there are selective opportunities in higher quality corporate credit at attractive yields.

The table below summarizes our major asset class views:

Asset Class	Outlook 6M	Outlook 12M	Rationale
US Equities			• Prefer US equity exposure to other regions, primarily due to the higher (albeit still low) likelihood of an engineered soft landing, we remain negative on an absolute basis as the challenging outlook persists, if not potentially worsens as the recessionary environment takes firmer shape. • Our fan charts, suggesting a typical monetary induced recession is likely, reveal we're more bearish than consensus; will pressure equities via material headwinds to earnings and higher risk premiums applied to valuations. • Outlook suggests staying defensive on a sector basis, prefer consumer staples and healthcare, and factor basis, prefer stocks exposed to quality and low volatility factor. Continue to favour higher income equities that return cash to shareholders and value equities for their lower exposure to re-rating risk and wide multiples spread to growth.
International Developed Equities			• Expect international developed equities to underperform US equities. • Probability of recession in Europe remains higher than elsewhere, uncertainty around the path of policy is elevated, and the depth and duration of the recession could be worse than expected. • Remain more positive on Japanese equities on a relative basis. There are headwinds, but the challenges (on inflation, policy tightening, the supply side) remain relatively benign compared to other major developed markets.
Emerging Markets Equities			• Macro environment will continue to put pressure on EMs in the near term. • Favor countries such as Brazil, Mexico, and Indonesia with inflation fighting credibility, positive trade balance dynamics, and diversified set of exports, as well as resilience to the USD appreciation. • In China, remain cautious and favour selective sectoral exposures. There is some upside potential as Covid measures are gradually eased, but this will largely be offset by property sector crisis and deteriorating trade balance.
Developed Market Sovereign Debt			• Maintain our neutral allocation to developed market sovereign fixed income. • View informed by nascent disinflation trend, real policy rates nearing positive territory, and several central banks downshifting the pace of rate hikes. • Why not overweight now? First, activity is proving more resilient than expected, so recession (and subsequent bull steepening) may occur later. And second, disinflation trend may be slow, keeps near-term risk of higher rates elevated.
Emerging Market Sovereign Debt			• Remain cautious on high-yielding EM debt. • Net commodity exporters remain a key exception, in local currency debt, we favour Brazil and Mexico. • Remain neutral on Chinese Government Bonds (CGBs), in the near-term, the delayed cyclical recovery, underpinned by further infrastructure-led stimulus related issuance, will keep yields on a stable-to-slightly-widening path.
Global Investment Grade Credit			• Shift to neutral on US and European IG corporate issuers. • There is risk, credit spreads have yet to widen to levels consistent with our base case of a global recession. • However, spread risk is increasingly offset by wider yield buffers alongside the prospect of stable-to-tighter risk-free yields.
Global High Yield Credit			• Cautiously shift to neutral in the HY space given risk of significant stress in a recessionary environment. • However, ample yield buffers, easing risk-free yields alongside lingering tailwinds from extraordinary Covid-related monetary easing and re-opening impulse should safeguard total return. • Active selection and a strong preference for short-duration exposure are warranted.
US Dollar and Foreign Exchange	**N/A**	**N/A**	• USD is poised to stay elevated in the months ahead. • Two key pillars of structural USD strength are hawkish FOMC and weak global growth momentum. • Headwinds to USD strength include possible earlier-than-expected US rate peak and China reopening, though neither outcome is assured.

Source: BNY Mellon investment Management GEIA.

What We Think

SECTION 1

SECTION 1

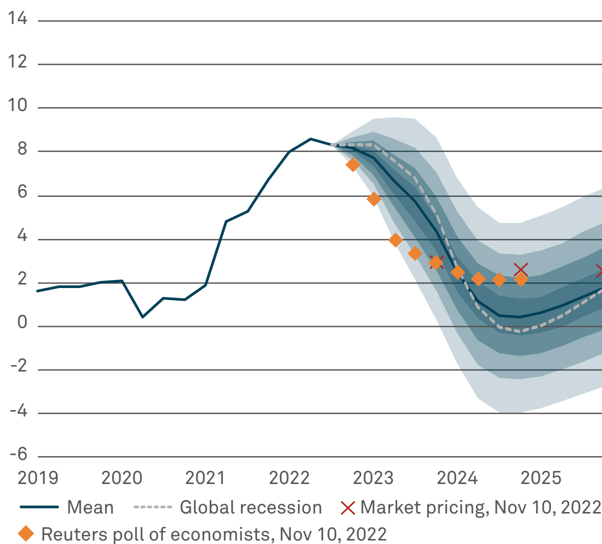
What we think: Forecast summary

The narrative of the past 12–18 months is fairly straightforward – inflation has surprised to the upside and, at the same time, economists' medium-term growth forecasts have been revised down. The key question for the year ahead is whether or not this ends in recession. Central bankers around the world are hoping for a so-called 'soft landing' whereby inflation moves toward target without the need for a significant contraction in output and a material rise in unemployment. However, persistently high inflation almost always leads to recession – the last time that the US economy avoided one with inflation as high as it is today was in the 1950s. The Bank of England, faced with similar circumstances, is now forecasting a recession, the first time it has ever done so ahead of time.

Ultimately, the outlook for interest rates, economic growth and for financial markets will hinge on how persistent inflation proves to be, and this is the main feature that distinguishes the three scenarios contained within this quarter's Vantage Point. Two of our scenarios – 'Global Recession' and 'Something Breaks' – see inflation remain stubbornly persistent with higher rates required to bring it down while in the third ('Softish Landing'), inflation moves reliably back toward target without the need for further significant policy tightening in 2023.

Last quarter, we argued that headline inflation was probably close to its peak in the US but that the pace at which inflation falls will depend upon the extent to which higher prices get embedded within the expectations of price- and wage-setters. Despite a downside surprise in October's US inflation print, we concur with the assessment of Fed governor Christopher Waller that it would be premature to declare that the battle is won. Indeed, wage growth remains above 5%. Consequently, in our most likely scenario (Global Recession) inflation remains far stickier than many economists currently expect. While the consensus of those polled by Reuters was that inflation would fall back to around 4.0% in the US and to around 6.5% in the euro area by 2023 Q2, we see a roughly one-in-ten chance of these outcomes materialising.

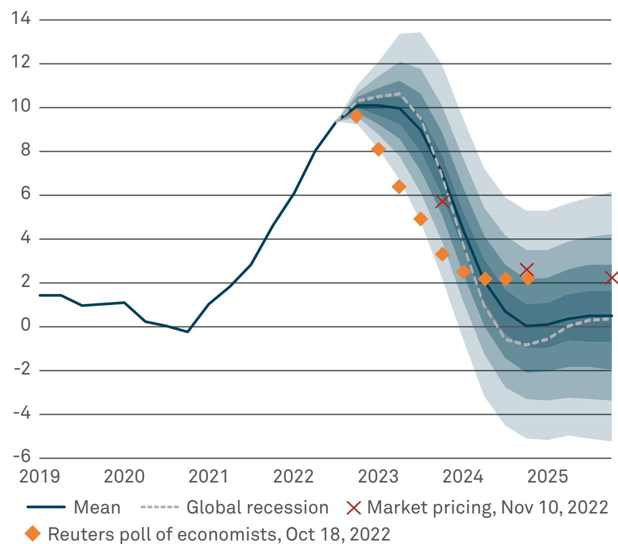
CHART 1: US CPI – FOUR-QUARTER PERCENTAGE CHANGES



Source: Refinitiv Datastream/Fathom Consulting. Data as of 11 November 2022.

Key takeaway: US inflation is set to fall, but not as quickly as markets and consensus expects. Risks evenly balanced around our 'global recession' path, but skewed upside of consensus.

CHART 2: EURO AREA HICP
FOUR-QUARTER PERCENTAGE CHANGES



Source: Refinitiv Datastream/Fathom Consulting. Data as of 11 November 2022.

Key takeaway: Euro area inflation set to fall too, but later than in the US. Recession severity points to sub-target inflation in 18 months or so.

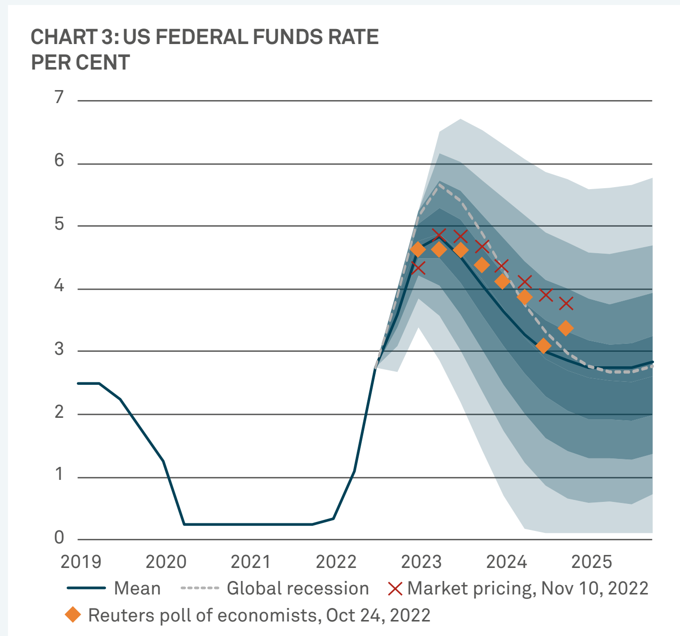
Forecasts begin in Q4 2022 and were calculated as of November 11, 2022 Source: BNY Mellon Investment Management and Fathom Consulting. The dotted line shows the global recession scenario mode and the solid line is the mean or probability-weighted average forecast across all three scenarios. Markings show survey and market implied pricing expectations. The darker bands towards the center of the fan chart show the more likely outcomes, while the lighter bands show progressively less likely outcomes covering 80% of the forecast distribution. The width of the fan chart shows the level of uncertainty and when the bands below the central forecast are wider than those above, this shows the balance of risks lies to the downside.

Charts are provided for illustrative purposes and are not indicative of the past or future performance of any BNY Mellon product.

However, we do not expect the inflation overshoot to last forever and all three of our main scenarios have inflation back to (or even below) target by early 2024, despite an increase in inflation persistence in two of these scenarios. We square this circle with an expectation of more aggressive tightening from the Fed. In a world where inflation expectations have risen materially, more tightening is required for central banks to bring inflation back to target – the roughly 100 basis point gap between the consensus forecast for fed funds rate and the forecast in our Global Recession scenario is largely explained by this. Of course, there is a material chance that the policy rate will have to go still higher, and we see a roughly one-in-four chance that rates could peak above 6%, and if higher rates reduce the scope for fiscal support, things could get very ugly very quickly. The US economy is unlikely to be able to handle a prolonged period with rates this high – investors know this, and we see a 60% chance of an inverted yield curve, defined as the difference between ten-year yields and the policy rate, through the first half of next year.

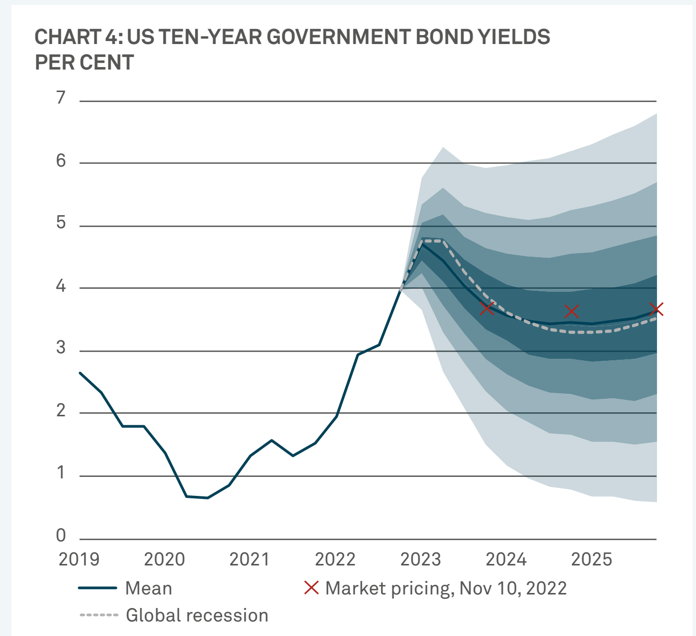
The key question that follows is how much damage the economy will have to suffer in order to bring inflation back under control. Our central scenario remains that we enter a global recession early next year, triggered by a rapid tightening of the fed funds rate. This will probably bear a close resemblance to a typical monetary-policy-induced recession with output likely to recover its previous peak within a couple of years and the unemployment rate expected to peak at 7.5% before falling back. There is a chance that things could get worse than that – we attach a 10% likelihood to a scenario where the Fed is forced to continue tightening rates until something breaks (most likely as the result of elevated leverage), triggering a recession comparable to the Global Financial Crisis, with the unemployment rate rising above 10%. A recession of this magnitude would be sufficient for the Fed to reverse course and cut rates back to their effective lower bound.

However, it is by no means guaranteed that the US will endure an imminent recession. Indeed, it outperformed expectations last quarter, despite rapidly rising interest rates. We



Source: Fathom Consulting. Data as of 11 November 2022.

Key takeaway: US policy rate likely to rise further. Rate path in 'global recession' higher than market expectations, but mean path is similar. Risks skewed to the downside of consensus and our 'global recession' path.



Source: Refinitiv Datastream/Fathom Consulting. Data as of 11 November 2022.

Key takeaway: 10-year yields have moved up sharply. We expect further modest rise from here but decline thereafter in line with market pricing.

Forecasts begin in Q4 2022 and were calculated as of November 11, 2022 Source: BNY Mellon Investment Management and Fathom Consulting. The dotted line shows the global recession scenario mode and the solid line is the mean or probability-weighted average forecast across all three scenarios. Markings show survey and market implied pricing expectations. The darker bands towards the center of the fan chart show the more likely outcomes, while the lighter bands show progressively less likely outcomes covering 80% of the forecast distribution. The width of the fan chart shows the level of uncertainty and when the bands below the central forecast are wider than those above, this shows the balance of risks lies to the downside.

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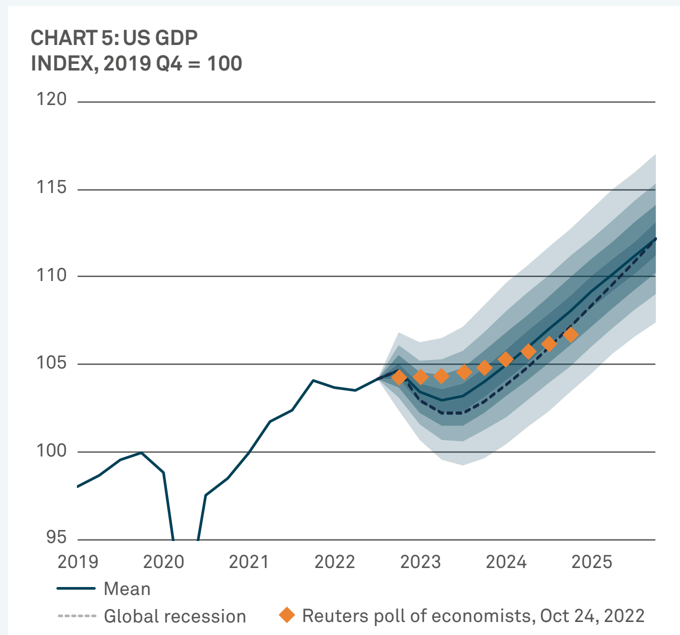
consequently see a one-in-three chance that output remains above current levels next year.

The euro area faces an additional headwind in the form of gas supply, although the bloc managed to avoid recession in Q3. Both the pace of substitution away from Russian supply and the economy's ability to withstand that transition has surprised many this year. As a result, we have raised the odds that the euro area avoids a recession, from around one-in-ten last quarter to around one-in-three now (similar to the US). However, a recession remains more likely than not – although fiscal fragility means policy rates are unlikely to go as high as in the US, energy shortages could still prove an issue, especially if we have a colder-than-expected winter.

We do not expect a dramatic offset for global growth or financial conditions from a re-opening of China's economy. To be sure, Chinese activity will improve as Zero-Covid Policy (ZCP) restrictions are eased. But it won't amount to much as the authorities there remain deeply conflicted over a complete about-turn from ZCP, and any re-opening will be messy.

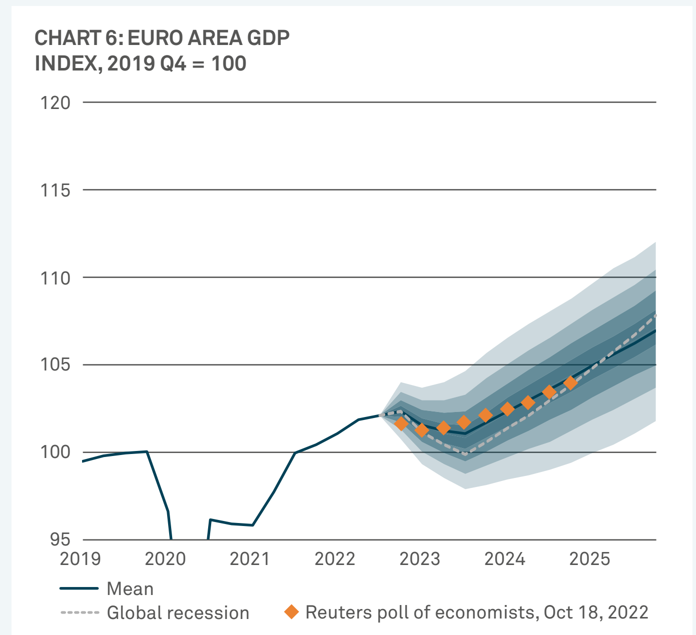
Moreover, Beijing faces stiffening structural headwinds from its property sector, common prosperity, and tech-sector decoupling with key economic partners – all of which are worsening investor sentiment and look set to limit the scope of any sustained domestic demand rebound.

The combination of high inflation, rising rates and weak growth paints a gloomy picture for financial markets. In this world, equities are likely to fall further, and the dollar index could stay elevated or its rally could plausibly continue for a while longer. However, monetary-led recessions are typically quite short, and we think a risk-on mood could prevail again through the latter half of next year. There is a risk that things end up much worse than this and the odds that the S&P 500 falls below 3000 are close to 20%. Of course, all of this can be avoided if the Fed manages to achieve a soft landing – something that we attach a 30% likelihood to. In that world, a risk-on mood would be expected to prevail with equities likely to rally and the dollar weaken. However, both the odds and the consequences of getting this wrong are severe.



Source: Refinitiv Datastream/Fathom Consulting. Data as of 11 November 2022.

Key takeaway: US is likely to see a recession in 2023. Risks skewed to the downside of consensus, and probability of 'something breaking' is significant.



Source: Refinitiv Datastream/Fathom Consulting. Data as of 11 November 2022.

Key takeaway: Euro Area recession likely to be deeper and longer than US. Mean forecast in line with consensus.

Forecasts begin in Q4 2022 and were calculated as of November 11, 2022 Source: BNY Mellon Investment Management and Fathom Consulting. The dotted line shows the global recession scenario mode and the solid line is the mean or probability-weighted average forecast across all three scenarios. Markings show survey and market implied pricing expectations. The darker bands towards the center of the fan chart show the more likely outcomes, while the lighter bands show progressively less likely outcomes covering 80% of the forecast distribution. The width of the fan chart shows the level of uncertainty and when the bands below the central forecast are wider than those above, this shows the balance of risks lies to the downside.

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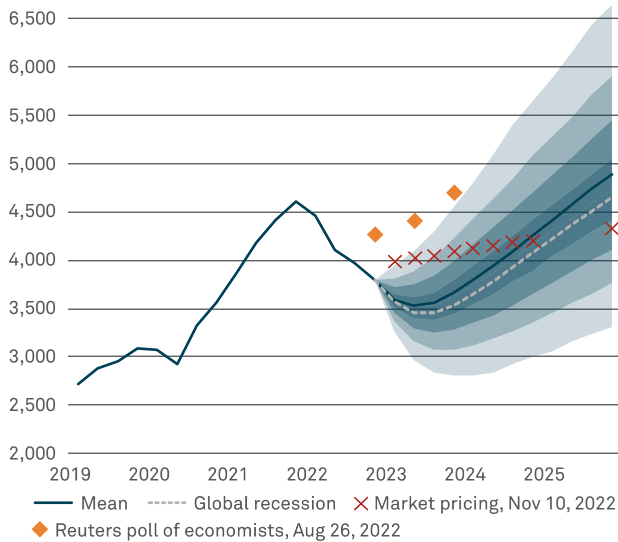
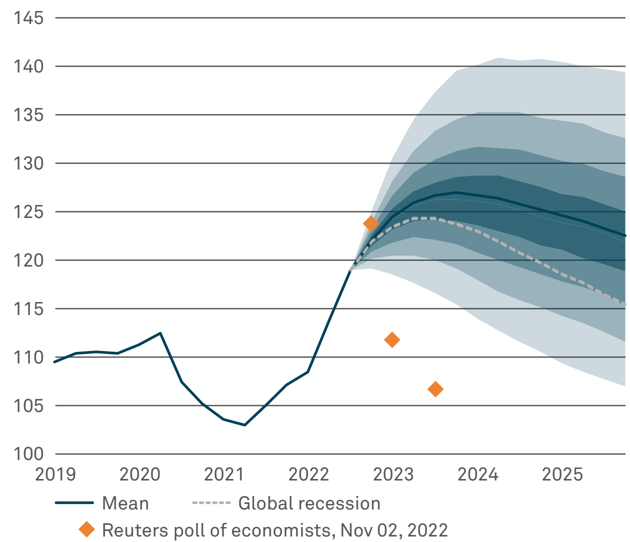
CHART 7: US S&P 500
INDEX



Source: Refinitiv Datastream/ Fathom Consulting. Data as of 11 November 2022.

Key takeaway: S&P likely to struggle next few months – well below economic consensus and futures. Recovery during 2023, as economy weakens, and discount rates fall.

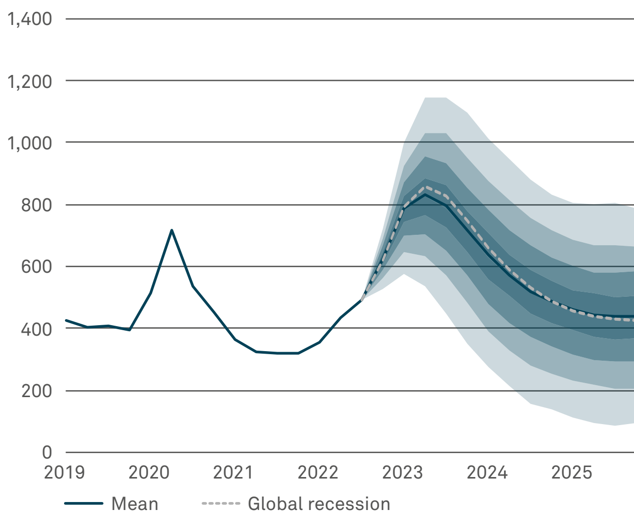
CHART 8: USD ERI AGAINST MAJOR CURRENCIES
INDEX, JANUARY 2006=100



Source: Refinitiv Datastream/Fathom Consulting. Data as of 11 November 2022.

Key takeaway: U.S. dollar likely to remain strong – our forecasts decisively higher than poll of economists. Upside risk to global recession path.

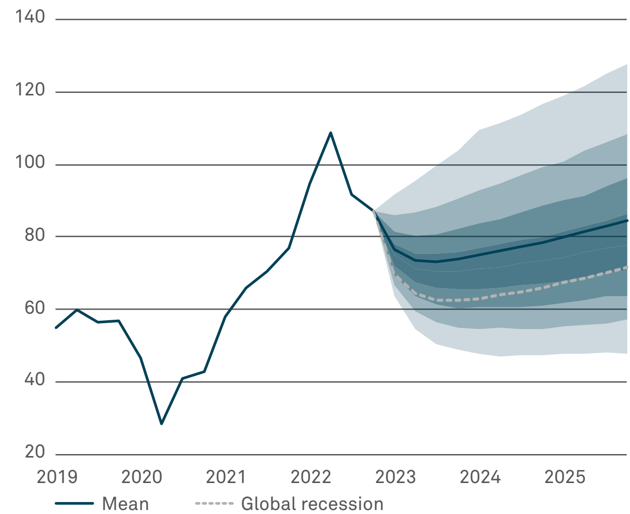
CHART 9: US HIGH YIELD SPREAD
BASIS POINTS



Source: Fathom Consulting. Data as of 11 November 2022.

Key takeaway: Tight financial conditions may result in wider credit spreads in 2023.

CHART 10: OIL PRICES
USD PER BARREL



Source: Fathom Consulting. Data as of 11 November 2022.

Key takeaway: Crude oil prices may come down further on softening demand as activity slows down, but tight supply implies price recovery in late 2023.

Forecasts begin in Q4 2022 and were calculated as of November 11, 2022 Source: BNY Mellon Investment Management and Fathom Consulting. The dotted line shows the global recession scenario mode and the solid line is the mean or probability-weighted average forecast across all three scenarios. Markings show survey and market implied pricing expectations. The darker bands towards the center of the fan chart show the more likely outcomes, while the lighter bands show progressively less likely outcomes covering 80% of the forecast distribution. The width of the fan chart shows the level of uncertainty and when the bands below the central forecast are wider than those above, this shows the balance of risks lies to the downside.

Charts are provided for illustrative purposes and are not indicative of the past or future performance of any BNY Mellon product.

What the Market Thinks

SECTION 2

SECTION 2A

What's priced in

Overview: In a relatively short period of time in 2022, global monetary policy moved a long way towards withdrawing stimulus. In January, the market had been expecting 325 basis points of rate hikes by the end of 2022 in the US, but as we write US policy rates stand at 4%, likely moving to 4.5% by the end of the year. As a result, the discount factor (real interest rates) surged. Global growth expectations also weakened, as signalled by the relatively weak performance of assets positively correlated with the global growth cycle. The market-implied probability of recession increased and remains elevated. Higher real interest rates paired with lower growth, led to sharp falls in both equities and bonds, in one of the worst years ever for balanced portfolios. Looking ahead to 2023, as global supply issues continue normalising and the lagged effects of past policy tightening start to be more evident in the data, markets appear to be pricing in a normalisation of the relationship between bonds and equities, with bond prices rising as equities fall, and vice versa. However, uncertainty around current market pricing, particularly around the outlook for short term interest rates, remains high.

Market-based growth expectations: Market pricing is consistent with expectations for low global growth and elevated risk of recession. The market-implied probability of a recession in the US in the next 12 months stands at 60-70% – more than double the unconditional probability of recession over the same horizon. Over the past few months, market-implied expectations for growth have stabilised somewhat, and the relative performance of asset classes and strategies most sensitive to the economic cycle has levelled off. Growth expectations improved the most in Europe, reflecting the surprising resilience shown by the economy so far. The same is true in emerging markets, consistent with increasingly positive, yet still tentative, news about a relaxation of zero-Covid policies by the Chinese government.

Market-based Inflation expectations: Market-traded inflation expectations remain healthy. Near term, US inflation is expected to drop quickly to levels not far above the inflation target, in contrast to what priced in for the euro area and the UK where short-term inflation expectations still trade significantly above 2%. Such divergence reflects the different

Summary of market pricing

TABLE 1: THE MARKET IS EXPECTING LOW GROWTH, AT TARGET INFLATION AND POLICY TIGHTENING, BUT UNCERTAINTY AROUND THIS VIEW IS ELEVATED

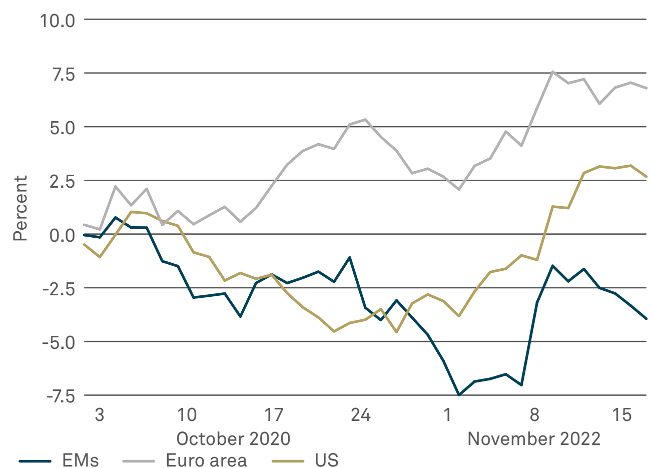
Market pricing	Growth	Inflation	Policy
Expectations at end Q3			
Expectations – current			

Green indicates above trend growth, below target inflation and policy accommodation. **Grey** indicates economic growth in line with trend, inflation in line with target and a neutral policy stance. **Red** indicates below trend growth, above target inflation and a tight policy stance.

Source: BNY Mellon Investment Management. Data as of 15 November 2022.

Relative performance of Euro area, US and Emerging markets (EM) Cyclical sectors Index/ Defensive sectors Index

CHART 11: THE PERFORMANCE OF CYCLICAL ASSETS AND STRATEGIES, CORRELATED WITH GROWTH EXPECTATIONS, SUGGESTS IMPROVED GROWTH EXPECTATIONS FOR THE EURO AREA



Source: BNY Mellon Investment Management, Macrobond. Data as of 15 November 2022.

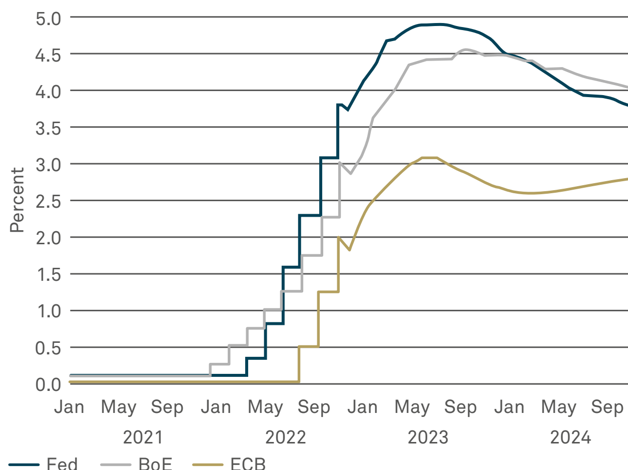
Charts are provided for illustrative purposes and are not indicative of the past or future performance of any BNY Mellon product.

nature and timing of the inflation shocks that have occurred, with European inflation being driven much more by the energy price shock of 2022, and less by the strength in aggregate demand, as seen in the US since 2021. Further out, while US and euro area inflation expectations trade at levels consistent with target, UK inflation is anticipated to remain sticky and above target for years to come. Unlike the US, where the Fed has been delivering a message of strong data-dependence and of 'whatever it takes' to bring inflation down, monetary policy in the UK continues to be forecast dependent. Given large forecast errors in the Bank of England's inflation projections, the market may well be pricing an expectation that the announced tightening in monetary policy won't be enough to fully restore price stability in the coming years.

Market-based monetary policy expectations: Against a backdrop of ongoing rate hikes over the quarter, alongside market pricing for the terminal rate that appears to have plateaued, the world economy may be closer to the end of the tightening cycle in 2023. In the US and the euro area, the market expects around 100bp of further tightening by mid-2023, and small rate cuts towards the back end of the year. This contrasts with the UK, where (after the extreme rates volatility experienced earlier in Autumn) market expectations have settled on 150bps of additional rate hikes (to levels above what priced in for the US) and rates to remain on hold for the rest of 2023. Real interest rates remain in restrictive territory across the curve in the US – positive and above the FOMC's 0.5% implied estimate for the neutral real interest rate. In the euro area and the UK, real interest rates have moved above or in line with estimates of the neutral level along most of the curve, but not at the very short end as near-term inflation expectations remain many percentage points above policy rates. We think that not hiking policy rates above the rate of inflation – as a simplistic read of traditional policy rules would recommend doing – may be a sensible strategy given the upcoming recession in Europe. But this leaves monetary policy exposed to the risk of being far behind the curve if recession risks have been overestimated or inflation proves stickier than expected.

US, UK and Euro area policy rates and market expectations

CHART 12: THE MARKET EXPECTS UK RATES TO BE HIGHER THAN US RATES IN 2024, DESPITE THE WEAKER ECONOMIC BACKDROP



Source: BNY Mellon Investment Management, Macrobond. Data as of 15 November 2022.

US equity option implied distribution vs our projections

CHART 13: RELATIVE TO WHAT PRICED IN BY THE MARKET FOR EQUITY PRICES, WE EXPECT GREATER DOWNSIDE RISK AND SMALLER UPSIDE RISK

S&P 500 Outcomes in 1 year		
Percent	Market	Own forecast
P (S&P 500 < -10%)	28	34
P (-10% <= S&P 500 < -5%)	8	7
P (-5% <= S&P 500 < 0%)	10	6
P (0% <= S&P 500 < 5%)	10	19
P (5% <= S&P 500 < 10%)	7	14
P (S&P 500 > 10%)	36	20

Source: BNY Mellon Investment Management, Bloomberg. Data as of 21 November 2022.

Charts are provided for illustrative purposes and are not indicative of the past or future performance of any BNY Mellon product.

SECTION 2B

Market Sentiment

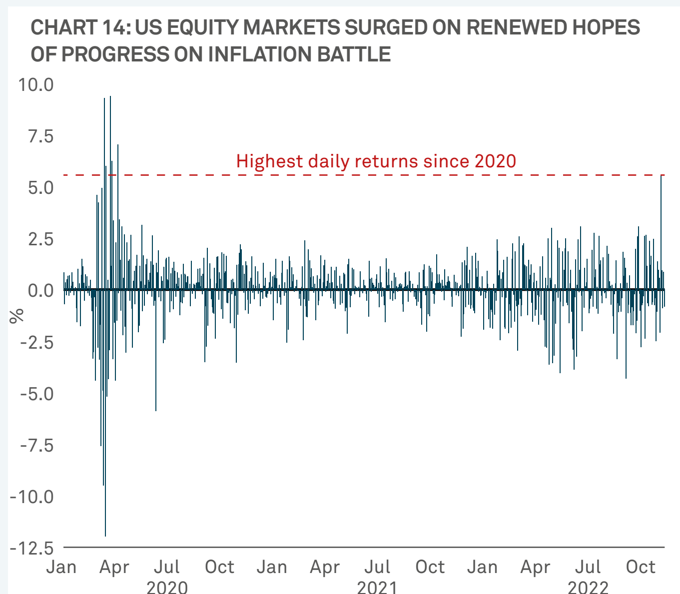
Despite elevated recession risk more than double the norm, market sentiment improved of late across a number of metrics, albeit coming off of very low levels. As noted above, growth expectations stabilized and improved in some markets while inflation metrics showed nascent signs of progress back toward target. Meanwhile, monetary policy remained aggressive but inevitably moved one-step closer to the end of hiking cycles, while markets gained confidence that the peak in policy rates had been fully priced in. In other words, the end of the tightening cycle is beginning to come into focus for investors.

In aggregate, these developments improved sentiment and supported risk asset performance. However, we'd be remiss to not point out that we've trodden this path before (see June to mid-August) following better-than-expected data. And despite the pickup, sentiment remains very low by historical standards; thus, it doesn't require much "good news" to spur a strong market reaction.

The equity market, proxied by the S&P 500 Index, hit a new 2022 low in early October but rebounded more than 10% through November as risk-on sentiment took form. Notably, the S&P 500 jumped 5.5% on the day when the better-than-expected October inflation report was released. It was the strongest one-day return since the volatile trading days around the pandemic lockdowns.

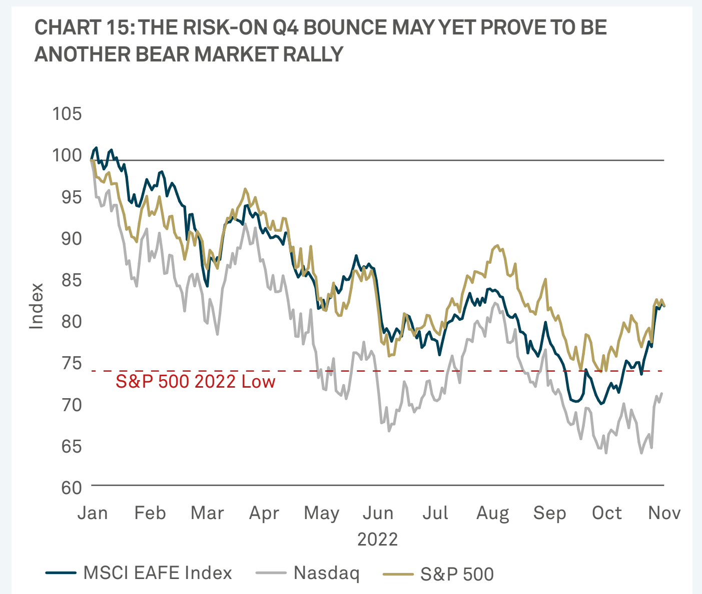
In terms of sentiment indicators, ETF flows data appears to show more conviction in this latest risk-on move. The summer bounce saw stronger flows into treasuries and investment grade bonds. By contrast, the recent moves witnessed much stronger demand for high yield bonds, a sign of risk seeking (see chart). Accelerating equity ETF inflows similarly provide evidence of improving demand for risk exposure. Generally, equity flows have communicated much higher risk appetite for much of this year, in contrast to other measures of sentiment. This is one piece of evidence suggesting that risk-off sentiment may come back with vengeance, especially in a recessionary environment. Similarly, investor sentiment

S&P 500 Index Daily Returns



Source: Macrobond. BNY Mellon Investment Management. Data as of Wednesday, 16 November 2022.

S&P 500, MSCI EAFE, and Nasdaq Composite (Rebased to 100, January 2022)



Source: Macrobond, BNY Mellon Investment Management, NASDAQ. Data as of Wednesday, 16 November 2022.

Charts are provided for illustrative purposes and are not indicative of the past or future performance of any BNY Mellon product.

surveys reported less bearish expectations (~40% expect lower markets in 6 months compared to ~60% at the end of September) and a narrowing gap between investor bears and bulls.

Last quarter, we highlighted the ongoing risk of bear market equity rallies given the confluence of poor sentiment measures and the challenging macro-outlook. Heading into 2023, caution remains warranted as risk-on momentum in financial markets continues to be fragile. It is not difficult to imagine one or two datapoints (most likely, inflation, wages, or labor) that could re-trigger strong risk-off market moves, pushing equities lower and yields higher.

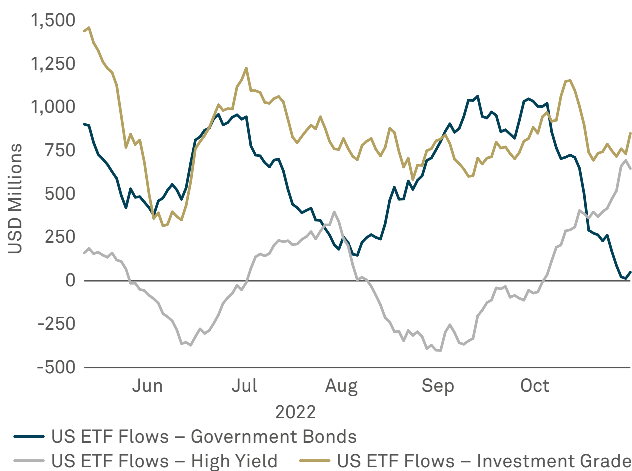
Given our scenario-based outlook, it remains premature to re-risk (i.e., overweight equities) on the hopes that the macroeconomic outlook will prove benign or that markets can rise while the macroeconomic environment deteriorates. Though sentiment and positioning have been bearish for what seems a lengthy time, our sense is that max bearishness during this cycle has not yet occurred, and thus the latest relief rally is likely to collide with macroeconomic reality in due course, and sentiment will backtrack lower.

In short, a combination of poorer growth/inflation/rates expectations, that are more closely aligned with historical slowdowns, likely needs to be priced into markets before sentiment bottoms. Extreme bearishness, risk-off outflows and cheaper valuations are likely ahead and will (eventually) ring the alarm bell to re-risk.

In the final section, we pull together our scenarios, the market's expectations, where our views differ, and translate it all into our preferred asset classes to begin 2023.

US ETF Flows (4-week Moving Average)

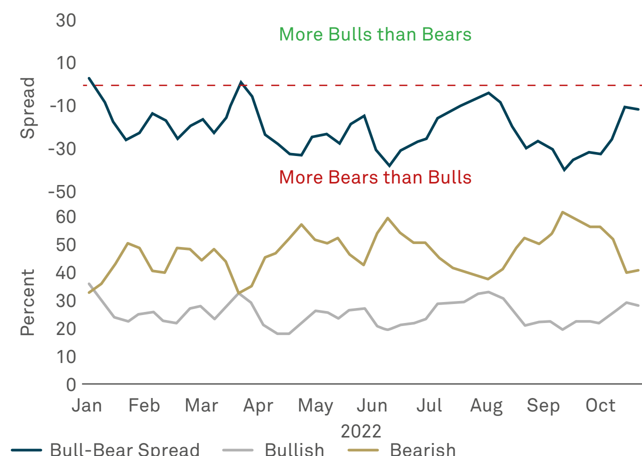
CHART 16: RISK SEEKING FLOWS EXHIBITED BY SURGE INTO HIGH YIELD AND SLOWING FLOWS TO GOVERNMENT BONDS



Source: Bloomberg, Macrobond, BNY Mellon Investment Management. Data as of Wednesday, 16 November 2022.

Investor Sentiment Surveys, Bulls and Bears Balance

CHART 17: SENTIMENT IMPROVED SIMILARLY AS IT DID DURING THE SUMMER EQUITY BOUNCE (JUNE TO MID-AUGUST)



Source: Macrobond, BNY Mellon Investment Management). American Association of Individual Investors (AAII). Data as of Wednesday, 16 November 2022.

Charts are provided for illustrative purposes and are not indicative of the past or future performance of any BNY Mellon product.

Investment Conclusions

SECTION 3

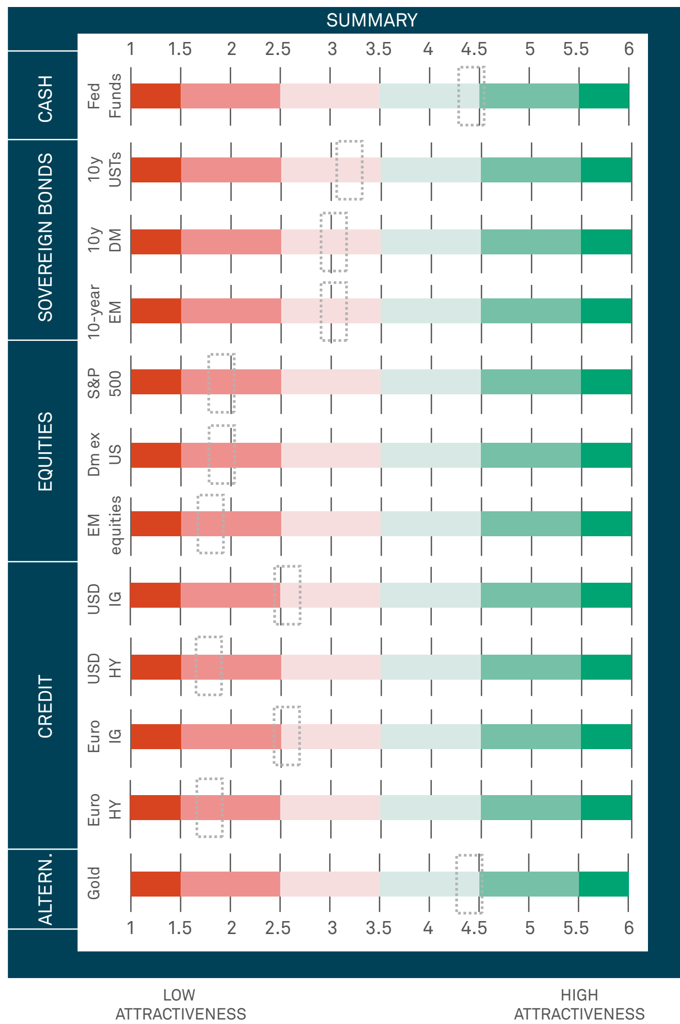
SECTION 3

Investment Conclusions

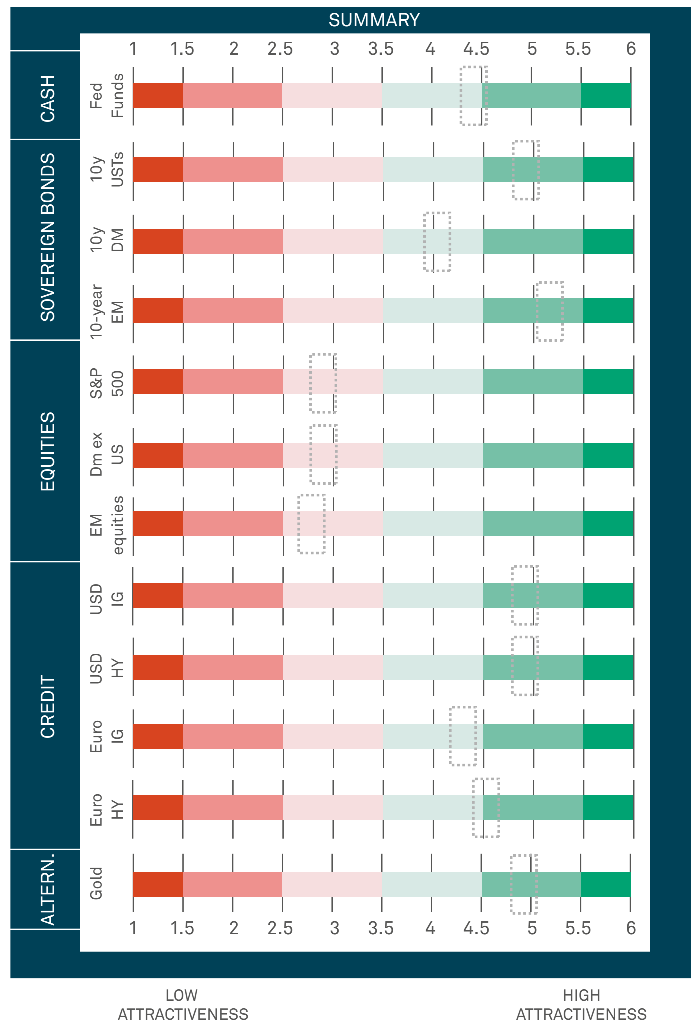
Heat Map

In our asset class heatmaps, the reader can more easily see the relative attractiveness of broad asset classes based on an array of variables we take into account. These variables include return expectations as they correspond to our economic scenarios, current market pricing, risks of major downside shocks, and hedging potential of certain asset classes against these shocks. The scores represents our outlook for each group over a 6-month and one-year investment horizon, respectively.

6 months ahead

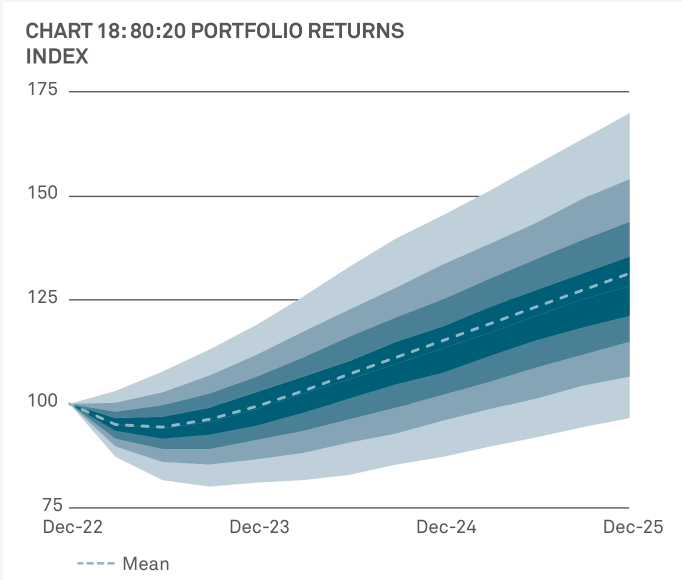


12 months ahead



Forecasts were calculated as of November 14, 2022. Source: BNY Mellon GEIA. Footnote: In order to further formalize our investment conclusions, we use a proprietary framework to better illustrate our views of the relative attractiveness of major asset classes. This approach takes into account a number of key variables including the total return expectations of each asset class as they correspond to our economic scenarios, current market pricing, measures of return over risk, risks of a major downside shock, and the hedging potential of certain asset classes against these shocks. The resulting heat map scales indicate where each asset class falls on the distribution of attractiveness scores from low to high (red to green) and represent our outlook for each group over a two-year investment horizon. This is not to indicate under/over/neutral weights in any particular asset class, but rather to give the reader a standardized and comparable view of the level of opportunity or risk we see in each category. The variables we use are constructed from the first four moments of the distribution of asset prices we forecast: mean (i.e. expected returns), standard deviation, skewness and kurtosis. We attribute a given score based on the outcome for each variable (for example, we attribute a low score when returns are expected to be lower than -10%, and a high score when returns are expected to be higher than 10%). Finally, we weight the scores for each variable to produce a summary score for each asset (one for US equities, one for EM equities, etc.), where the weights are based on what we consider to be consistent with the preferences of a prudent, total return-seeking investor. The information in this section contains projections or other forward-looking statements regarding future events, targets or expectations, and is only current as of the date indicated. There is no assurance that such events or expectations will be achieved, and actual results may be significantly different from that shown here. The information is based on current market conditions, which will fluctuate and may be superseded by subsequent market events or for other reasons.

Portfolio Perspective



Forecasts begin in Q4 2022 and were calculated as of 11 November 2022. Source: BNY Mellon GEIA and Fathom Consulting.
The dashed line is the mean or probability-weighted average forecast across all four scenarios. The darker bands towards the center of the fan chart show the more likely outcomes, while the lighter bands show progressively less likely outcomes covering 80% of the forecast distribution. The width of the fan chart shows the level of uncertainty and when the bands below the central forecast are wider than those above shows the balance of risks lies to the downside.

EQUITIES

US Equities: The factors weighing heavily on US equity markets in 2022 are unlikely to materially abate in early 2023. Thus, we expect the challenging outlook to persist, if not potentially worsen as the recessionary environment takes firmer shape. While we prefer US equity exposure to other regions, primarily due to the higher (albeit still low) likelihood of an engineered soft landing, we remain negative on an absolute basis. Our fan charts suggest a typical monetary induced recession is likely, which will pressure growth sensitive assets, like equities, via material headwinds to earnings and higher risk premiums applied to valuations. Despite the equity drawdown in 2022, risk remains skewed to the downside for several reasons, which keeps us bearish relative to consensus (as seen in our fan charts). First, our recession expectations are somewhat more severe than the consensus of a "mild" recession. Second, the earnings outlook is optimistic and only "accurate" if one believes a recession can be avoided, while forward multiples (~17x) are similarly elevated and at risk of de-rating. Lastly, equity bottoms typically form during recessions and after monetary policy pivots, which suggests that in terms of sequencing, it's likely to get worse before it can start to get better. Keep in mind that the equity market is unlikely to "see through" the recession and climb higher amid rising unemployment and contracting consumer spending. Within US equity, this outlook suggests staying defensive on a sector basis, prefer consumer staples and healthcare, and factor basis, prefer stocks exposed to quality and low volatility factors. Stocks exposed to these factors tend to have safe-haven qualities, such as more robust profitability characteristics and lower leverage, which may lead to their outperformance in a recession. We continue to favour higher income equities that return cash to shareholders and value equities for their lower exposure to re-rating risk and wide multiples spread to growth.

S&P 500

"Softish landing"	Year End Values		
	2022	**2023**	**2024**
EPS Estimate	222	233	254
Earnings Growth	7%	5%	9%
Price/Earnings	18	19	20
Approximate Level	3,959	4,429	5,082
Annual Return Estimate	-17%	12%	15%

Global Recession	Year End Values		
	2022	**2023**	**2024**
EPS Estimate	222	206	237
Earnings Growth	7%	-7%	15%
Price/Earnings	18	17	18
Approximate Level	3,959	3,510	4,274
Annual Return Estimate	-17%	-11%	22%

Something Breaks	Year End Values		
	2022	**2023**	**2024**
EPS Estimate	222	195	213
Earnings Growth	7%	-12%	9%
Price/Earnings	18	14	17
Approximate Level	3,959	2,735	3,620
Annual Return Estimate	-17%	-31%	32%

Forecasts were calculated as of November 16, 2022. Source: BNY Mellon GEIA.

International Developed Equities: Overall, we expect international developed equities to underperform US equities. First, international developed equities tend to underperform US equities when global activity slows. Second, we think the backdrop for Europe, a major component of international developed equity indices, remains challenging. European equities performed relatively well over the quarter, as activity in the region proved to be more resilient than many had expected. But the probability of recession in the region remains higher than elsewhere, uncertainty around the path of policy is elevated, and the depth and duration of the recession could be worse than expected. For instance, the energy supply issues (and energy price inflation) that have affected the region in 2022 may resurface in 2023. While more of this potential pain may already be priced in compared with other markets (much cheaper relative valuations), this discount may be reasonable given the outlook. Elsewhere, we remain more positive on Japanese equities on a relative basis. Either a Bank of Japan policy pivot or a global recessionary environment could prove a headwind for Japanese equities on an absolute basis, but the challenges faced by Japan (on inflation, policy tightening, the supply side) remain relatively benign compared to what is seen in other major developed markets.

Emerging Markets (EM) Equities: Emerging markets have come under pressure as external conditions have worsened thanks to the strong USD, Chinese economic slowdown, tighter financial conditions and the rise in real yields. Overall, we think the macro environment will continue to put pressure on EMs in the near term. That said, as investors get a sense that the top in rates and the USD nears, we think that long emerging markets will likely be a trade. We favor countries such as Brazil, Mexico, and Indonesia with inflation-fighting credibility, positive trade balance dynamics, and diversified set of exports, as well as resilience to the USD appreciation. In China, we remain cautious and favor selective sectoral exposures. The economy clearly faces a growing list of medium-term headwinds. While there is some upside potential on cheap valuations and as Covid measures are gradually eased, this will largely be offset by prolonged sluggishness in the property sector and a deteriorating trade balance as world growth weakens. In equities, we see limited valuation downside after the past year's slide. We remain selective on sectoral exposures and tilt towards infrastructure and consumer staples.

FX

US Dollar and Foreign Exchange (FX): The USD has become more expensive but is poised to stay elevated in the months ahead. Two key pillars of structural USD strength are a hawkish FOMC and weak global growth momentum. While the prospect of an earlier- and lower-than-expected US rate peak and a China recovery are USD headwinds, neither outcome is by any means assured. On the contrary, global macro uncertainty remains high: global inflation expectations are historically elevated, European energy dependence has not been structurally mitigated, and China's domestic vulnerabilities linger despite prospects for reopening. There is a risk that the Fed (and the markets) declare inflation victory too early, and that the related tightening in global financial conditions creates negative spill overs, especially in the economies that are forced to keep pace with the Fed with thin private savings and policy buffers.

FIXED INCOME

Developed Market Sovereign Debt: We maintain our neutral allocation to developed market sovereign fixed income. Several factors determine our views. First, inflation, globally, appears to have finally turned a corner, with goods price inflation moving down sharply and leading to some noticeable downside inflation data surprises. Second, real policy rates (i.e., adjusted for inflation) are close to becoming positive in the US and to move above 'neutral', the overall level of real interest rates curve is more consistent with what needed to return inflation to the 2% target and nominal yields are providing investors a welcomed source of income returns. Third, several central banks are downshifting the pace of rate hikes. These are positive development for fixed income returns. So why are we not recommending outright overweighs? First, despite our expectation for a global recession in 2023, we also note that activity has been more resilient than expected so far in the US and in Europe, so a recession may come slightly later than previously though. Second, as highlighted by our inflation fan chart we think the risk of sticky inflation remain underappreciated. As a result, we continue to see a meaningful near-term risk of both an increases in market rates above what has already been priced in and rate cuts (broadly expected to start by mid-2023) to be pushed out into the future by hawkish central bank communication.

Emerging Market Sovereign Debt: We remain cautious on high-yielding EM debt. Our fan charts indicate an imminent recession in Europe, a slow recovery in China and continued strength in the USD. Although net commodity exporters remain a key exception, increasing numbers of Frontier EMs are grappling with food price shocks, rising inflation and severe currency market pressure, and heightened odds of debt distress. With local currency debt, we favor Brazil and Mexico thanks to their high interest rates, weak growth, and slowing inflation expectations. They have also gone further in their policy normalization. We would, however, hedge local currency exposure on our expectation of continuing USD strength. Elsewhere in EM, policy rates remain on an upward trajectory, but analyst expectations for end-2023 inflation and end-2023 policy rates are starting to decelerate. We remain neutral on Chinese Government Bonds (CGBs) until re-opening effects fade. There will be plenty of medium-term opportunity to resume structural longs. But in the near-term, the delayed cyclical recovery, underpinned by further infrastructure-led stimulus related issuance, will keep yields on a stable-to-slightly-widening path. We doubt if Chinese monetary authorities will ease much further. Or any additional easing will be incremental and highly targeted.

Global Investment Grade Credit (IG): We shift to neutral on US as well as European IG corporate issuers. To be sure, credit spreads have yet to widen to levels consistent with our base case of a global recession –on further credit pressure from rising debt-service expenditure, higher wage and energy costs, and weakening pricing power on weakening real household demand. But the risk of wider spreads is increasingly offset by wider yield buffers alongside the prospect of stable-to-tighter risk-free yields.

Global High Yield Credit (HY): We cautiously shift to neutral in the HY space as well. Our expectation of a US recession and a prolonged elevation in real rates will result in further stress in speculative grade credit, particularly at leveraged firms which lack pricing power, run on thin margins with dwindling cash buffers and face a rising wall of maturities. But again, ample yield buffers, easing risk-free yields alongside lingering tailwinds from extraordinary Covid-related monetary easing and the re-opening impulse should safeguard total return against expected near-term credit stresses. Nevertheless, we suggest active selection and a strong preference for short-duration exposure.

Past performance is no guarantee of future results.

All investments involve risk, including the possible loss of principal. No investment strategy or risk management technique can guarantee returns or eliminate risk in any market environment.

RISK CONSIDERATIONS

This report has been provided for informational purposes only and is subject to significant limitations. The views contained herein are not to be taken as advice or a recommendation to buy or sell any investment. The information contains projections or other forward-looking statements regarding future events, targets or expectations, and is only current as of the date indicated. Targets contained herein are based upon an analysis of historical and current information and assumptions about circumstances and events that may not yet have taken place and may never occur. If any of the assumptions used do not prove to be true, results may vary substantially. Certain information has been obtained from sources believed to be reliable, but not guaranteed. We believe the information provided here is reliable, but do not warrant its accuracy or completeness. If the reader chooses to rely on the information, it is at its own risk. The information is based on current market conditions, which will fluctuate and may be superseded by subsequent market events or for other reasons. We do not undertake to advise you of any change in the information contained in this report. The report does not reflect actual trading and other factors that could impact future returns. Given the inherent limitations of the assumptions, this report does not contain sufficient information to support an investment decision and it should not be relied upon by you in evaluating the merits of investing in any securities or products. The information has been provided without taking into account the investment objective, financial situation or needs of any particular person. Please consult a legal, tax or financial professional in order to determine whether an investment product or service is appropriate for a particular situation.

Equities are subject to market, market sector, market liquidity, issuer, and investment style risks, to varying degrees. **Bonds** are subject to interest-rate, credit, liquidity, call and market risks, to varying degrees. Generally, all other factors being equal, bond prices are inversely related to interest-rate changes and rate increases can cause price declines. **Commodities** contain heightened risk, including market, political, regulatory, and natural conditions, and may not be appropriate for all investors. **High yield bonds** involve increased credit and liquidity risk than higher-rated bonds and are considered speculative in terms of the issuer's ability to pay interest and repay principal on a timely basis. Investing in **foreign denominated and/or domiciled securities** involves special risks, including changes in currency exchange rates, political, economic, and social instability, limited company information, differing auditing and legal standards, and less market liquidity. These risks generally are greater with emerging market countries. **Small and midsized company stocks** tend to be more volatile and less liquid than larger company stocks as these companies are less established and have more volatile earnings histories. **Currencies** are can decline in value relative to a local currency, or, in the case of hedged positions, the local currency will decline relative to the currency being hedged. These risks may increase volatility. **Alternative strategies** may involve a high degree of risk and prospective investors are advised that these strategies are appropriate only for persons of adequate financial means who have no need for liquidity with respect to their investment and who can bear the economic risk, including the possible complete loss, of their investment. The strategies may not be subject to the same regulatory requirements as registered investment vehicles. The strategies may be leveraged and may engage in speculative investment practices that may increase the risk of investment loss. Investors should consult their financial professional prior to making an investment decision. Recent market risks include pandemic risks related to COVID-19. The effects of COVID-19 have contributed to increased volatility in global markets and will likely affect certain countries, companies, industries and market sectors more dramatically than others.

INDEX DEFINITIONS

US **Consumer Prices (CPI) Index** measure of prices paid by consumers for a market basket of consumer goods and services. The yearly (or monthly) growth rate represents the inflation rate. The **10Y US Treasuries Average Yield** of a range of Treasury securities all adjusted to the equivalent of a ten-year maturity. The **CBOE VIX Index (VIX)** is an indicator of the implied volatility of S&P 500 Index as calculated by the Chicago Board Options Exchange (CBOE). The **Majors Dollar Index (USD)** measures the value of the US dollar relative to a basket of currencies of the most significant trading partners of the US including the euro, Japanese yen, Canadian dollar, British pound, Swedish krona, and Swiss franc. The **MSCI EM Index (Emerging Markets Equities)** tracks the total return performance of emerging market equities. The **S&P 500 Composite Index (S&P 500)** is designed to track the performance of the largest 500 US companies. **Europe STOXX 600** Index represents the performance of 600 large, mid and small capitalization companies across 18 countries in the European Union. **Bloomberg US Corporate High Yield:** covers the universe of fixed-rate, non-investment grade corporate debt in the US. **Bloomberg US Corporate Investment Grade:** designed to measure the performance of the investment grade corporate sector in the US **1-mth. 1-year forward swap:** the avg. interest rate for 1-mth. in 1-year forward. **GDP:** gross domestic product is the total monetary or market value of all the finished goods and services produced within a country's borders over a given time period. **Fed funds Rate:** the target interest rate for overnight lending and borrowing between banks. **Purchasing Managers Index (PMI):** An economic indicator derived from monthly surveys of private sector companies. A level above 50 indicates expansion compared to the prior month and below 50 contraction. Investors cannot invest directly in any index.

STATISTICAL TERMS

Skewness in statistics represents an imbalance and an asymmetry from the mean of a data distribution. In a normal data distribution with a symmetrical bell curve, the mean and median are the same. **Kurtosis** is a measure of whether the data are heavy-tailed or light-tailed relative to a normal distribution. That is, data sets with high/low kurtosis tend to have heavy/low tails, or outliers. **Probability-weighted mean** is similar to an ordinary arithmetic mean, except that instead of each of the data points contributing equally to the final average, data points are weighted by the statistical probability for a particular scenario outcome. **Duration** is a measure of a bond's interest-rate sensitivity, expressed in years. The higher the number, the greater the potential for volatility as interest rates change.

OTHER

QE: quantitative easing. **Fed:** US Federal Reserve. **ECB:** European Central Bank. **BOJ:** Bank of Japan. **BOE:** Bank of England.

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