

Q2.2023

Landing status





Introduction

Welcome to another edition of Vantage Point, the flagship quarterly from the Global Economics and Investment Analysis (GEIA) team.

The great economics populariser, John Kenneth Galbraith, came up with two of my favourite quotes about economic forecasting. He once said: 'there are two types of economists – those who don't know and those who don't know they don't know'. He followed that up with: 'the sole purpose of economic forecasting is to make astrology look respectable'. Galbraith was largely disdained by the academic economics community, but he certainly had a way with words. Moreover, the economy and financial markets have a habit of corroborating the deep truth in those quips.

Three months ago, we, along with much of the consensus, were forecasting an imminent recession in Europe, with the US following not far behind. We were also worried that China's 'zero Covid' policy would condemn that country to another year of anaemic growth, while central banks worldwide would have to contend with sticky inflation. In the event, economies worldwide held up much better than we were expecting, and China abandoned zero Covid. not a moment too soon. At the same time, inflation continued to fall, with some suggesting it could come back to target in several the large economies by the end of the year. Around the turn of the year, equity markets embraced a 'Goldilocks' scenario in which the US economy would avoid recession, China's reopening would boost world growth and reduce supply-driven inflation, while interest rates would peak soon and then start to come down well before the end of 2023. The strength of risk markets in January certainly gave us pause for thought and we were beginning to wonder whether this 'immaculate disinflation' might happen.

But then came the immensely strong payrolls number in January, along with a high consumer price index (CPI) print and a raft of other indicators suggesting the US economy remained in rude health. So, markets reassessed. Perhaps rates would have to go even higher and stay there for longer? Perhaps inflation is sticky, and the Fed might have to do more to get it back to target? Maybe there wouldn't be rate cuts after all?

And then, just as markets were settling on a new 'higherfor-longer' consensus, as if to prove Galbraith right, in early March along came a banking crisis. In fairness, we had outlined a scenario in which 'something breaks' back in December. In the US it has taken the form of a small/regional banks crisis, triggered by the failures of Silicon Valley Bank (SVB) and Signature Bank. While in Europe, the focus fell on Credit Suisse, where the Swiss National Bank stepped in to provide a solvent institution with emergency liquidity resort, and engineered a merger with one of its main competitors, UBS. The macroeconomic implications of this turmoil are still unclear. But we believe that it is clear 'something' has broken' in the move to a new, higher-rate world, where institutions whose business models were predicated on the post-Global Financial Crisis (GFC). easy money world lasting forever, have run into trouble.

In short, three months on and the outlook remains as cloudy and uncertain as ever. In these circumstances, knowing that we don't know is important, but so is knowing that we must still make good decisions under extreme uncertainty. Our scenario-based, fan chart approach is an answer to that conundrum. It is intellectually honest; in that we acknowledge the uncertainties and allow uncertainty estimates to guide our investment advice. But it is also rigorous, since the scenarios we think about are internally consistent, sensible stories about how the economy might evolve.

This time we focus on three scenarios that are distinguished by impact of the banking crisis, the underlying stickiness of inflation, and what that means for rates and asset prices.

Our single most likely (modal, 50%) scenario is 'Credit Crunch'. In this world, the banking crisis causes credit and financial conditions to tighten, doing the work of another 50-100 bps of interest rate increases. As a result, interest rates peak near current levels and some of the major economies move towards recession in H2. Inflation falls back towards target this year, and interest rates start to come down toward the end of the year. In short, a banking crisis and tighter credit conditions deliver the economic slack required to bring inflation back down at the current level of interest rates. The situation in Europe and Asia is similar, but also differs in crucial ways. Europe also suffers from tighter financial conditions and is already slowing quickly so, in this scenario, goes into recession straight away. Underlying demand in the euro area has not been as strong as in the US, but the monetary tightening (in real terms) has been similar. Add to that the impact of higher energy prices (albeit, not as high as we had feared) and recession comes quickly. China, in this scenario, continues on the reopening path, but weak global demand means that the boost fizzles out pretty quickly and Asia delivers sub-par growth in H2. Inflation does eventually fall back to target sometime in 2024, but rates remain high until it is obvious that we are on that inflation path, which isn't until 2024H1.

We retain a 'Soft Landing' scenario (20%), where the 'immaculate disinflation' the markets were hoping for in January comes to pass. It would require the banking crisis to blow over of course. But it would also require a radical change in the way economies dis-inflate. In short, we would need to see inflation come back to target without the economy generating a significant amount of slack. This could happen if the labour market 'loosened' through vacancies falling, rather than unemployment rising significantly, allowing wage inflation to fall as voluntary guits fell. Likewise, a fall in inflation expectations could be the main driver of a fall in inflation itself, allowing a relatively costless return to target. Although this is an odds-against scenario, it nevertheless retains a significant probability, because the post-Covid world is substantially different from what went before and, labour markets in particular, are behaving very differently than in the past.

We also have a new 'Delayed Landing' scenario (30%).

Some in the markets refer to this as 'no landing' – a world in which the economy barely slows at all, or possibly even accelerates this year. But we don't like that description because 'no landing' probably leads to a 'harder landing, later'. In this scenario, central banks pause in H1, waiting to see what the accumulated effects of the tightening they have imposed are. Indeed, the banking crisis and associated tighter credit conditions lead them to pause immediately, not delivering on the rate hikes that were expected in the markets until the SVB failure. However, while there is an effect on activity, it turns out to be too small to bring inflation back to target sustainably in the medium term. Inflation stabilizes around the middle of the year, but then stays well above target, possibly even rising again in H2. Realizing this, central banks resume their tightening cycle in H2, but the delay means terminal rates end up significantly higher than markets currently expect – north of 6% in the US. The surprise tightening generates a sharp downturn in 2024, the potential for something else to 'break', a larger recession than in 'hard landing' with inflation and rates eventually falling sharply.

Overall then, our outlook remains pretty negative – a recession sooner or later remains more likely than not, and the risk to both inflation and rates remains to the upside. There is no fine tuning either – our recession scenarios also involve an inflation undershoot at some point, as well as a sharp drop in rates further out. China grows strongly, but global spill overs aren't large enough to mitigate recession risks. And that's not to mention unquantifiables, such as a nasty flare up in the Russia/ Ukraine situation. All this adds up to a challenging outlook for risk assets – equities may make moderate progress by year-end, but against a background of sharp ups and downs. Fixed income remains our preferred asset class for now, given it offers a reasonable income return coupled with important hedging characteristics.

There are some positives, however. Clearly, if we get the Soft Landing, economists are going to have to think hard about their inflation models, but markets will probably love it. And even if we get a recession, once it is past, the world we emerge into might be very different, and financially healthier than the post-GFC world we have lived with for over a decade. A world in which bond yields average 2-3%, as opposed to near-zero, is a more 'normal' world financially speaking. One in which equities and other risk assets have a decent hurdle rate, and will outperform based on their earnings fundamentals, as opposed to low discount rates. The longer-term outlook, post-shakeout, remains relatively positive for equities – we just have to get past a volatile reset first.

Who knows?



SHAMIK DHAR CHIEF ECONOMIST

Vantage Point summary

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.

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. 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 is the uncertainty around our forecast.

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 but policy loosens and turns less restrictive.
	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 that uncertainty around our macro 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 looser 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	Conviction	Rationale
Cash			High	Cash attractive given income returns and optionality it provides.
Fixed Income			Medium	Benefits from the likely recession and policy-related response.
Equities			Medium	Suffers from slower growth. End of tightening helps, but equities bottom in recessions.
Credit			Medium	Suffers from slower growth. Benefits from end of tightening and income returns.
Alternatives			Medium	Focus on assets that benefit from an increase in risk.

Executive Summary

OUR NEW SCENARIOS IN BRIEF

50%	PROBABILITY
Scenario 1 – Credit Crunch	
	SCENARIO
Tightening yet to be felt, there is the possibility of one or two more hikes to come.	
The banking crisis in the US and Europe cause credit conditions to tighten significantly.	
 US falls into recession in 2023 H2 while Europe and the UK slump into one even earlier. 	

- Labour market loosens rapidly.
- China's re-opening has short-lived positive effects.

The banking crisis in the US and Europe cause credit conditions to tighten significantly, the equivalent of around 50-100 bps of rate rises. Persistently high real rates exacerbate tail risks in the global economy, including, but not limited to 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. China growth impulse fizzles out, with slumping external demand, weaker-than-hoped recovery in the property sector negatively impacting consumer sentiment, and the economy experiences FX pressure from elevated developed market rates. In this scenario, US 10Y yields stabilize around 3.5%, the S&P bottoms around 3200-3400 in 2023-H2, risk assets suffer and the USD re-tests its 2022 highs on a worldwide flight to safety.

30%

Scenario 2 – Delayed Landing

SCENARIO

PROBABILITY

- Major central banks pause hiking prematurely even as labour markets stay exceptionally tight and wage growth re-accelerates.
- China's reopening is, on balance, inflationary for core goods.
- Key global central banks are eventually forced to hike even more, and the US goes into recession in 2024 H2.

The banking crisis leads the Fed and the European Central Bank (ECB) to pause in mid-2023, only to discover that core inflation remains persistent and re-accelerates on insufficiently tight financial conditions. Persistent inflation and strong labor demand in the US keep wage growth above the pace consistent with the Fed's 2% inflation objective and promote a re-start of the hiking cycle. In Europe, sticky core inflation and potential strength in energy prices on China's reopening impulse continue to re-set wages higher, triggering more hikes from the ECB. In the event of a 'Delayed Landing', bond yields shift much higher in 2024 with 10Y US Treasury (UST) yields possibly reaching 5% in early 2024. Large monetary policy-led recessions follow in advanced economies. The US Treasury curve remains inverted as major stock indices come under pressure. After a head fake rally in 2023, the S&P index slumps to a low-3000 range in 2024, Euro Stoxx fall by a similar magnitude, with sustainable recoveries not seen until 2025.

20%

Scenario 3 – Soft Landing

SCENARIO

PROBABILITY

- Inflation falls without the need for much more tightening.
- US policy rate peaks at 5%.
- Labour market adjusts via a benign shift in the Beveridge curve -whereby few jobs are lost against a sizable deceleration in wage growth.
- China's reopening has positive spill over effects and is, on balance, disinflationary for core goods

Inflation continues to decline and proves largely non-sticky. In the US, this is due to: ongoing commodities disinflation; shelter and medical components of major inflation indices sustainably reversing last year's strength; and the labor market loosening gently, with the ratio of job openings relative to job seekers bearing most of the brunt, while the unemployment rate increases only modestly. Most of the tightening in the US economy took place in 2022 through tighter financial conditions. In Europe, receding geopolitical risks and adequate energy supply; automatic wage adjustments across many euro area countries that incorporate higher inflation prove to be one-time events in 2023, not continuous into future years. China reopening momentum is sustained and proves disinflationary on balance, as higher global goods production offsets higher energy demand. USD weakens on credible Fed and ECB policy pauses, global growth resilience and receding recessionary risks. S&P regains 2022 peak in 2024, 10Y yields stabilize around 3.5%-4.0%.

What We Think SECTION 1



SECTION 1

What we think: Forecast summary

Economic activity looks to have strengthened, globally, around the turn of the year. Business surveys point to a strong rebound in China as many of the restrictions associated with the zero Covid policy were removed. In the US, the ISM survey¹ of non-manufacturers moved firmly back into expansionary territory after falling sharply in December. And if we look through the Covid recovery period, January's payrolls figures were the strongest in more than 10 years, and February's still-healthy reading suggests this was no statistical fluke. Despite these robust economic data, our 2023 Q2 Vantage Point forecast embodies a sizeable risk of recession, both in the US and in many other economies.

Our views about the outlook for economic activity in the world's largest economies and regions are captured in our first three fan charts. Our single most likely scenario, 'Credit Crunch', sees much of the world enter recession this year, with Europe among the first to contract, and the US following a quarter or two later. Protected to a degree from external headwinds by strong domestic demand following the lifting of restrictions in December, China continues to expand in this scenario, although at modest rates. Looking across the whole distribution of possible outcomes, we see a just greater-than-evens chance that euro area GDP is lower at the end of this year than at the end of last year. Those same odds for the US are 40%, and for China less than 10%.

US headline inflation peaked at 9.1% in June. It has fallen steadily since then, driven largely by weaker non-core components, and by weaker energy prices in particular, reaching 6.4% in January. Economists, as surveyed by Reuters, expect this downward trend to continue at a broadly similar pace through most of this year. On balance, we are less optimistic. The consensus path for US inflation is close to our 'Soft Landing', where inflation expectations move rapidly back to target and wage claims moderate, allowing the more

¹Institute of Supply Management.



Source: Refinitiv Datastream/Fathom Consulting.

Key takeaway: We see a material probability of growth undershooting consensus expectations. The risk to US growth is skewed to the downside given the path of our highest probability scenario, 'Credit Crunch'.



Source: Refinitiv Datastream/Fathom Consulting.

Key takeaway: Euro area growth is similarly at risk, and likely more immediately than compared to US growth.

Forecasts begin in Q1 2023 and were calculated as of March 17, 2023 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.

persistent core components of inflation to move sharply lower. The risks to this benign scenario are to the upside, with the potential for the US federal reserve to pause too soon allowing inflationary pressures to build once again ('Delayed Landing'), giving our US inflation fan chart an upside bulge towards the end of this year. With more spare capacity in the euro area, and with a sharp pick-up in growth less likely here, we are more confident that euro area inflation will continue to fall through this year.

While our mean path for US inflation lies above market pricing, our mean path for the US federal funds rate lies below, which suggests that we see a greater potential for recession in the US, whether this year in 'Credit Crunch' or next year in 'Delayed Landing'. In the past, investors have tended to be surprised by the pace of US rate rises through tightening cycles, and by the pace of US rate cuts through easing cycles. In our single most likely scenario, 'Credit Crunch', they make the second of these mistakes, and by the end of next year the US federal funds rate lies some 200 basis points below what is currently priced in. Our fan chart for US ten-year yields tells a similar story. Although our mean path for Treasury yields is close to market pricing, our single most likely scenario sees yields fall more rapidly.

Although our forecast allows for some near-term momentum in US equities, driven in part by our 'Delayed Landing' scenario, it is our somewhat more pessimistic view of the outlook for US economic activity that explains why our mean path for US equities is a little below market pricing through most of our forecast horizon. We see around a 60% chance that the S&P 500 finishes the year below 4,000. With the European periphery suffering in both 'Credit Crunch' and 'Delayed Landing', with a combined weight of 70%, we see more of a downside risk to the Euro Stoxx 50 than to the S&P 500. Both investment and high-yield credit appear to be priced largely for our 'Soft Landing' scenario, to which we attach just a 30% weight. With credit conditions likely to tighten somewhat, as our fan chart



Key takeaway: China growth is expected to be strong, buoyed by re-opening impulse, albeit there are risks that the impulse may be short-lived. Key takeaway: US disinflationary trend continues near-term, however, there is a material risk of re-acceleration later in 2023 if hiking cycle proves to have paused too early, at a rate too low to defeat inflation.

Forecasts begin in Q1 2023 and were calculated as of March 17, 2023 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.

shows, credit spreads (particularly high yield) are likely to rise from here.

The US dollar fell sharply towards the end of last year, as the ECB, along with other major economy central banks, began to tighten monetary policy, narrowing the gap between the yields available on US dollar assets and on assets denominated in other currencies. Our forecast for the US dollar views the greenback as more likely to rise through the remainder of this year than to fall. This reflects in part the possibility of a more aggressive tightening by the US federal reserve than by other central banks, particularly in 'Delayed Landing', but also the likelihood of safe haven flows into US dollar assets in our two downside scenarios.



CHART 5: EURO AREA CPI FOUR-QUARTER PERCENTAGE CHANGES

Source: Refinitiv Datastream/Fathom Consulting.

Key takeaway: Euro area inflation declines more quickly but from a higher current level with less risk of re-acceleration compared to US.



Source: Refinitiv Datastream/Fathom Consulting.

Key takeaway: Fed Funds rate is most likely near peak, however, upside risk remains, particularly in 2024 in a 'Delayed Landing' scenario. Any cuts near-term likely stem from rapid onset of recession or significant financial stability concerns.

Forecasts begin in Q1 2023 and were calculated as of March 17, 2023 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.

CHART 7: US TEN-YEAR GOVERNMENT BOND YIELDS PER CENT



Source: Refinitiv Datastream/Fathom Consulting.

Key takeaway: Yields expected to modestly trend lower with risks to up and downside somewhat balanced. A decline to ~2% in 2024 is seen in our highest probability 'Credit Crunch' scenario, well below market pricing.



Source: Refinitiv Datastream/Fathom Consulting.

Key takeaway: Equity risk skewed to the downside in 2023 due to elevated recession probability. Possibility of near-term head fake rallies on hopes of 'Soft Landing' scenario.

CHART 8: US INVESTMENT-GRADE SPREAD BASIS POINTS



Source: Fathom Consulting.







Source: Fathom Consulting.

Key takeaway: USD likely to re-strengthen on flight to safety trade in recessionary scenarios.

Forecasts begin in Q1 2023 and were calculated as of March 17, 2023 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.

What the Market Thinks SECTION 2



SECTION 2A

What's priced in

Overview: Markets saw extreme swings in either direction, flipflopping from expecting a reacceleration of growth and much tighter monetary policy, to pricing in a slowdown in growth and a loosening in monetary policy. But over the quarter as a whole, moves are consistent with a fall in growth expectations. As a result, equities - which are positively sensitive to the growth outlook, contrary to safe bonds - underperformed fixed income. The market-implied probability of recession remains elevated, but the market is providing contrasting signals regarding its imminence. The sharp bull steepening of the yield curve seen since the emergence of US and European banking troubles. suggests that the market believes we may be entering a recession soon, but the equity market remains more sanguine. The uncertainty around current market pricing has risen further from elevated levels, and options markets point to increased downside risks to equities and upside risks to rates compared to the end of 2022. Looking under the surface of market pricing, we note that the compensation offered to investors to go overweight risky assets such as equities is guite low. In fact, relative to safe assets, it is the one of the lowest since the global financial crisis. We find it hard to provide a fundamental justification to this market pricing, given the most rapid tightening in global

Summary of market pricing

TABLE 1: THE MARKET IS EXPECTING POSITIVE GROWTH, AT TARGET INFLATION AND RATES TO BE CUT TO NEUTRAL LEVELS. UNCERTAINTY AROUND THIS VIEW REMAINS ELEVATED

Market pricing	Growth	Inflation	Policy
Expectations – at end Q4			
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, Macrobond. Data as of 17 March 2023.

monetary policy since early 1980s and clear risks that something will break in the financial sector, as well as still elevated inflation that makes central banks keen to continue tightening if financial woes prove to be contained.

Market-based growth expectations: Broad-based measures of market growth expectations fell in Q1 2023, but performance of asset classes and strategies most sensitive to the economic cycle are inconsistent with an immediate and sharp deterioration in the growth outlook. For instance, at the time of writing, the sharp moves lower in financial stocks have not fully spilled over to cyclical equities. We remain suspicious of this market pricing, as we think the recent troubles in the US and European banking sectors provide evidence of the important lagged effects of tighter monetary policy. Instead, the market seems to think that any issues will largely remain contained to a few single names, focusing perhaps on economic data that remains resilient, an expectation for incoming support from monetary policy, and the dissipation of some of the shocks that had led to increased pessimism around the outlook in 2022 - namely, the energy crisis associated with the war in Ukraine and zero-Covid in China. A large gap has formed between market-implied growth expectations and actual leading indicators of growth. While it is

Cumulative quarterly move in 10-year US treasury yield, decomposed by macro driver



CHART 11: MARKETS WERE VERY VOLATILE. CURRENT PRICING IS CONSISTENT WITH A SLOWDOWN IN GROWTH

Note: macro factors (growth, policy and inflation) are derived by identifying common drivers of asset returns, and classifying them based on their correlation with macroeconomic variables. Source: BNY Mellon Investment Management, Macrobond. Data as of 17 March 2023.

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possible that the market is correct, and that activity will remain resilient in 2023, we think much of this optimism has been priced in already, suggesting a better risk-reward for being underweight growth sensitive assets. This is also indicated by the excess earnings yield (equity earnings yield less real interest rates), which remains close to decade lows, and suggests that investors are receiving little compensation for being overweight equities and growth sensitive assets more generally.

Market-based Inflation expectations: Near-term traded inflation expectations rose over the guarter, consistent with data showing that price pressures remain strong. Further out, the market sees inflation falling quickly from current levels, and reaching the 2% target over the next year in the US and the euro area. In the UK, inflation expectations for the next 3-5 years trade at levels above a range consistent with the 2% target. Distant future inflation expectations look relatively high in the euro area, and are now in line with levels seen for the US (for the first time since the start of the series, excluding liquidity driven moves during the GFC). This is a welcomed development for the region, after so many years of inflation expectations remaining unanchored to the downside. The market remains aware of the risk that US inflation settles above target in the medium term. Option market data suggests a ~30% implied probability of US inflation remaining above 3% over the next 5 years, above the ~20% implied probability of US inflation settling below 1%. All in all, while average market expectations are broadly consistent with a return of inflation to levels consistent with target, the option market suggests that this outcome is seen as even odds (50% vs 75-70% pre-Covid - in December 2019).

Cyclical vs defensive global equity performance and US ISM manufacturing



CHART 12: MARKET IS PRICING A PICK-UP IN GROWTH WHICH IS NOT YET REFLECTED IN LEADING ECONOMIC INDICATORS

Market-based monetary policy expectations: Concerns around the stability of the US and European banking sectors. flared up in mid-March, driving a sharp reversal in market expectations of higher rates. Currently, the market is suggesting that the end of the tightening cycle is around the corner, with one/two additional hikes from the Fed, the ECB and the Bank of England, and rate cuts coming from Q3, first in the US, then in the UK and finally in the euro area. The market sees 150 bps of cuts by end 2024 in the US. For context, in early March, terminal rates in the US, UK, and euro area had reached ~5.7%, ~5%, and ~4% respectively. This amount of interest rate volatility is some of the most extreme ever seen in the market. Taking a step back, the level at which interest rates are ultimately expected to settle after the cuts, shows a relatively positive view of the economic outlook. US forward real interest rates are close to the upper range of estimates of the 'neutral' level, at a time when levels of future inflation expectations are also healthy. We take two messages from this signal. First, a US recession is likely not fully priced in, given forward rates do not dip below neutral, as seen during periods of economic contraction. Second, the market may be pricing in the end of the low rates, low inflation environment of the previous decade. The story in other major regions is not exactly the same. In the euro area, traded-inflation expectations are close to 10-year highs, but real rates remain significantly below pre-GFC levels. This suggests that the market sees a more robust economic/inflation outlook for the region, but no return to pre-GFC levels of growth. A recession in the euro area

Real and inflation decomposition of forward interest rates

is also not priced in by the market.



CHART 13: MARKET IS EXPECTING RELATIVELY HIGH REAL INTEREST RATES AND HEALTHY LEVELS OF INFLATION FOR SEVERAL YEARS TO COME

Source: BNY Mellon Investment Management, Macrobond. Data as of 17 March 2023.

SECTION 2B

Market Sentiment

The sentiment rollercoaster continues. Resilient growth paired with immaculate disinflation hopes buoyed sentiment and markets to kickstart the year. But what a difference a month or two makes. Sentiment began to soften as markets began to pullback in February on a "good (economic) news is bad (markets) news" narrative. More recently, sentiment was significantly rattled by banking sector worries. Like most crises, hindsight makes material vulnerabilities seem readily apparent. No wonder that sentiment was bludgeoned over the head.

Sentiment remains low overall and appears likely to trend lower in the coming weeks as concerns stemming from the banking sector crisis linger, if not flare-up anew. Unsurprisingly, investor sentiment surveys point to ongoing bearishness, while positioning is weighted toward cash and light on risky exposure, albeit inflows to emerging markets equities suggest some pockets of improving risk appetite.

Last quarter, we highlighted the vulnerability of the post-October rally and noted how low sentiment suggested that it wouldn't take much to knock the rally off course. Recent developments appear to have put the nail in the coffin of the latest bear market rally (the fifth by our count). Yet, the market still appears sanguine about the outlook. As evidence, consider the underwhelming US earnings season (earnings contracted year-on-year) that was seemingly shrugged off by the market that instead focused on the prospect of better growth paired with the end of tightening cycles. While resilient growth would support an improving earnings outlook, the main message from earnings season was that one should not expect an imminent earnings upturn. Corporations guided lower and downward revisions to consensus estimates accelerated, in a similar fashion to what has preceded past recessions.

Due to the uncertainties clouding the outlook, it's understandable that sentiment remains volatile. Risk-on sentiment (in January) was based on over-extrapolating nascent good news and arguably being complacent about the risks inherent in the months ahead. The emergence of cracks in the banking sector in March is case in point. However, as noted in the previous section, current market pricing still does

Investor sentiment peaked in late-January, but quickly retreated



Source: Macrobond. BNY Mellon Investment Management. American Association of Individual Investors (AAII). Data as of Friday, March 17, 2023.

Flows suggest risk appetite diminished and demand for safer-assets rose



not reflect the most likely scenario outcomes. Two of our scenarios, with combined probability of 80%, envision challenging times ahead for risk assets, albeit with different implications for timing. Given these forecasts, Vantage Point sentiment remains more pessimistic than broad market sentiment.

Are we "perma-bears" always thinking the next disaster is just around the corner? Of course not. Instead, our views are grounded in our reading of the data and how the trajectory of the economy will impact corporate earnings, risk sentiment, and in turn financial asset performance. Today, given our latest set of scenarios, pragmatic caution remains key. Our sense is that the near-term is foremost about preserving capital through managing exposure to assets with large downside risk profiles. Fortunately, the investment opportunity set has improved considerably in the past 12 months, most notably for bond investors.

2023 began with a jump in discretionary over staples, indicating improving risk appetite



CHART 16: S&P 500 CONSUMER DISCRETIONARY/STAPLES RATIO

Source: Macrobond, BNY Mellon Investment Management. NBER (National Bureau of Economic Research). Data as of Friday, March 17, 2023.

Equity volatility expectations remained muted, while rates volatility surged

CHART 17: EQUITY AND TREASURY RATES IMPLIED VOLATILITY



Source: Macrobond, BNY Mellon Investment Management. Data as of Friday, March 17, 2023.

Investment Conclusions SECTION 3



SECTION 3

Investment Conclusions

Summary

Where do we go from here? There's never an easy answer to this question when it comes to markets, but today, it feels important to acknowledge the recent persistence of macro/ market uncertainty, and what this means for investors. In this environment, we think investment strategy should be focused on controlling what one can control. To us, this means positioning in favour of protecting capital near-term and limiting bets that are exposed to larger downside risk profiles (i.e., high beta assets most sensitive to growth slowdowns). If one acknowledges that elevated uncertainty means in 6-12 months' time we could be in very different states of the world with relatively similar likelihood. Then a sensible multi-asset approach is to be balanced, well-diversified, and defensive in portfolio allocation while maintaining the ability to be nimble as the economy evolves. Portfolio resiliency, the ability to withstand and thrive under different market environment, will be key.

Focusing on the relative risk/reward trade-offs between asset classes, we prefer fixed income assets over equities in the near-term. Our asset class heatmap, which is derived from the likelihood of our scenarios, and importantly is based on risk-adjusted total returns, clearly bears this out. Fortunately, the fixed income opportunity set is arguably more attractive than any seen in decades. And while compensation for taking duration risk remains low (many yield curves are inverted), we argue that attempting to precisely time the next big yield curve move should be avoided. Markets can move quickly and unexpectedly, as highlighted by banking sector drama in March. Being prepared means beginning to extend duration sooner rather than later. Failing to prepare is preparation for failure. Staying defensive and nimble translates more specifically into a preference for cash-like and sovereign bonds that currently offer attractive yields. Our latest forecasts make us somewhat more cautious on credit exposure due to the possibility that spreads widen considerably during a recession. Remaining up in quality and pairing with active bond selection will be needed to successfully manage credit risk. We continue to prefer IG to HY.

Among equities, regionally, we've shifted our view to a moderate preference for emerging markets over US, while still being underweight equity overall due to higher sensitivity to growth slowdowns. We continue to prefer US over developed international exposure, notably Europe (details below). There are few growth stories globally and China's rebound is one of them. We see EM, primarily China equities, benefitting from re-opening and making EM exposure relatively more attractive among global equities. That said, selectivity is needed countryby-country, and the asset class faces potential headwinds from bouts of US dollar strength.

Asset Class Views

The table below summarizes our major asset class views:

Asset Class	Outlook	Rationale
US Equities		• US equity risk remains weighted to the downside as market pricing reflects a benign outlook, in contrast to our high probability scenarios.
		• Bear market rallies fuelled by 'Soft Landing' hopes may in fact be 'Delayed Landing' scenario in disguise. Scrutinize 2023 rallies and take selective exposure, do not blindly chase.
		 Multiples at risk, though the bigger risk comes from earnings weakness not being fully priced in. Defensive positioning remains warranted, focus on quality exposure, income payers, and a bias toward value stocks.
International		Underweight international developed equities on a risk-return basis.
Developed Equities		• Asset class could outperform peers given exposure to value factors (which we see favourably longer term) and low valuations.
		But a global recession is most likely, and the asset class is more cyclical.
		 Risks in the regions are hard-to-model and/or non-linear (Russia-Ukraine war, financial crisis in euro area periphery).
Emerging Markets		 Underweight EM equity, but overweight China equity to exploit re-opening drivers and cheap valuations. Stay defensive in EM-ex-China on weakening G3 demand, risk of bouts of USD strength.
Equities		• Seek specific sector or individual country opportunities to capitalize on industry turning points or supply-chain shifts.
Developed Market		 Overweight sovereign fixed income as hedging benefits of sovereign fixed income again look more attractive over the next 12-24 months.
Sovereign		Attractive income returns.
Debt	Debt	• Prefer US, over Europe and Japan.
Emerging Market Sovereign		 Neutral EM USD on a peak in US rates and a more stable outlook for the USD as well as the demand-pull from China's re-opening, but weakening G3 demand and expected pockets of USD strength keep us from going overweight.
Debt	• In contrast, modestly overweight EM local currency (EM LC) on an earlier, and lower inflation peak than at DMs as well as high real yields and a growing track record of FX and macro flexibility.	
Global Investment		• Stay neutral IG corporates on higher absolute level of yields but insufficient income protection against recession risk. Prefer US IG.
Grade Credit		• Tighter policy and financial conditions to weigh on earnings and profits. In a hard landing scenario, spreads may widen by +150bps versus current levels.
		• Prefer IG corporates over HY or EM(USD) as returns have also been steadier through recessions.
Global High		Underweight HY on its vulnerability to recession and liquidity risk.
Yield Credit		 Despite higher absolute level of yields, HY has a poor history of risk-adjusted relative return through recessions. Weaker fundamentals and liquidity will raise delinquencies disproportionately and keep us on sidelines.
US Dollar		• Long USD cash on decade high short rates and as trade-weighted USD index likely to remain largely stable.
		• USD strength to persist on continuing Fed hawkishness and rising G3 growth risk on tightening policies.
		• Main offset against the USD comes from China's growth upturn and macro resilience in Europe and Japan.
		• Main upside risk for USD comes from a hard-landing, or it Fed hawkishness outlasts China's re-opening impulse.

Source: BNY Mellon Investment Management, as of March 17, 2023.

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 represent our outlook for each group over a one-year investment horizon.



12 months ahead

Forecasts were calculated as of March 17, 2023. Source: BNY Mellon Investment Management 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 one-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.

EQUITIES

US Equities: After a hot start to the year, followed by an abrupt pullback, the US equity outlook looks no clearer than it did at the end of 2022. The prospect of a 'Delayed Landing' scenario adds to the complexity. It's reasonable for markets to move higher on firming 'Soft Landing' expectations, but at some point in H2, it may become apparent that it's a 'Delayed Landing' in disguise. This would punish investors that blindly chase bear market rallies and ignore economic signals. The nearby table aligns possible price/earnings ratios and earnings growth estimates to our scenarios (our equity fan charts are macro model derived and table figures are used to check reasonability of model output). 'Soft Landing' is guite optimistic - earnings grow healthily, and multiples expand on improving risk-sentiment spurred by confidence that a recession has been avoided. This scenario looks increasingly less likely given recent banking sector turmoil. In contrast, 'Credit Crunch' and 'Delayed Landing' forecast further market weakness ahead. The former being the lesser-of-two-evils despite the ominous connotation. In that scenario, prices decline sooner, but shallower, and begin to recover into 2024. The 'Delayed Landing' scenario projects a near-term bounce (i.e., another bear market rally) and near-flat calendar-year return, but more acute pain hitting next year.

These latter two scenarios dominate the outlook. We see a more than 60% chance of the S&P 500 ending below 4,000 this year. There are three main reasons underpinning this probability. First, there's limited scope for multiples expansion without a significant shift higher in the probability of 'Soft Landing', which is a low likelihood. Second, earnings are clearly at risk and is underappreciated, in our view. Operating margins are sliding lower and slowing sales will make maintaining margins more difficult as 2023 progresses. Third, an aggregate 80% of our scenario probabilities project a challenged macro growth outlook. While US equities may benefit from safe-haven flows, equity returns will nonetheless remain poor (index trading range bound) until recession hits, policy pivots, and economic recovery begins to come into focus. It's highly unlikely that equities magically "see through" a recession, even a mild one. Historically, equity markets trough during recessions and

after policy pivots. A re-testing of the October 2022 lows (~3,500) appears odds on.

Bottom line: US equity risk remains weighted to the downside as market pricing reflects a benign outlook relative to what we expect in our probability scenarios. The Fed has more work to do to combat inflation and now must consider financial stability, but the prospect of rate cuts is still far off, barring a severe economic meltdown near-term. We prefer large caps to small given historical recession performance, explained by small caps higher earnings sensitivity to the business cycle. On a sector basis, we favour a defensive tilt (healthcare, consumer staples, and utilities). A focus on quality exposure (i.e., higher profitability, lower leverage, earnings quality), income payers, and a bias toward value stocks remains a sensible playbook.

S&P 500

Soft Landing	١	S	
	2023	2024	2025
EPS Estimate	231	247	272
Earnings Growth	5%	7%	10%
Price/Earnings	20	20	19
Approximate Level	4,620	4,943	5,166
Annual Return Estimate	20%	7%	5%

Credit Crunch	Year End Values				
	2023	2024	2025		
EPS Estimate	207	238	254		
Earnings Growth	-6%	15%	7%		
Price/Earnings	16	17	18		
Approximate Level	3,309	4,043	4,580		
Annual Return Estimate	-14%	22%	13%		

Delayed Landing	Year End Values				
	2023	2024	2025		
EPS Estimate	220	198	232		
Earnings Growth	0%	-10%	17%		
Price/Earnings	17	15	16		
Approximate Level	3,740	2,970	3,707		
Annual Return Estimate	-3%	-21%	25%		

Forecasts were calculated as of March 17, 2023. BNY Mellon Investment Management GEIA.

International Developed Equities: Overall, we remain underweight international developed equities relative to US equities over the next 12 months based on risk-reward considerations. While the outlook for Europe has improved from three months ago, the market has rallied considerably already, pricing out the most negative tail risks to the outlook. We don't exclude further outperformance over the next 12-months, as international developed equities may benefit from China reopening, and are more exposed to value factors, over which we maintain a positive view. However, international developed equities tend to underperform US equities when global activity slows, which remains our central expectation. Admittedly, equity valuations, once accounted for the level of interest rates, remain low relative to those on US equities, offering greater compensation to investors to take risk in this asset class. But many of the risks we see in international developed markets are hard-to-model and likely non-linear, making us wary about chasing the recent good news for the region. First, the relative performance of European assets has been very correlated with gas prices in recent quarters. While we think Europe is structurally better placed to avoid a significant energy crisis, the region is still importing natural gas from Russia at amounts that, if suddenly stopped, would likely create significant price volatility given the tightness in the market. Second, military operations in Ukraine are gathering pace as we enter spring, and the risk of an escalation may again become front and centre on the mind of investors. Third, both US and European financial risks have risen recently, but existing vulnerabilities in euro area periphery countries make us even more worried about the tail risk of a financial crisis in the region. Finally, we expect the Bank of Japan to (gradually) move towards a normalisation of monetary policy, which may lead to some of the FX tailwinds supporting large cap equity performance in the region moving into reverse.

Emerging Market Stocks (EM Equity): We are defensive towards EM equity but with a near-term overweight vis-à-vis China. Our preference for Chinese equities capitalizes on the reopening of its economy and its accommodative macro policies. The expected upturn here is the only major global growth bright spot. Our constructive price-return view is underpinned by a modest uplift in price-earnings multiples and a 7-8% yearly pickup in earnings per share -which drive our view of relative outperformance of China. Despite (modest) positive spill overs from China, we stay neutral in the rest of the EM-ex-China equity complex on their continuing exposure to an expected weakening of G3 demand. Many large EMs have been resilient to the problems in the financial sector in the U.S. They've also done a reasonably well in stabilizing their economies. Whilst being neutral, we would keep an eye out for specific sector or individual country opportunities to capitalize on industry turning points or supply-chain shifts.

FX

US Dollar and Foreign Exchange (FX): Stay long USD cash. The trade-weighted value of the USD will likely maintain a stable-to-strengthening trend in the year ahead reflecting lingering risk aversion in markets, heightened global growth risk and a cautious Fed which will likely remain reticent about cutting rates too soon. Other major central banks are likely nearing the peak in their rate hike cycles as well, but unlikely to cut anytime soon. An important offset to USD strength comes from China's growth upturn on its economic re-opening, which will also limit downside growth risks for emerging markets and a several EU economies. The main upside risk for the USD stems from a hard landing in the US or a situation where China's re-opening impulse is shallower than expected or fades earlier than the Fed's hawkish stance. On the downside is a Soft Landing scenario - to which we now assign just a 20% probability and comes with a virtuous cycle of lower inflation and softer wage growth, with no notable labour market pressure.

FIXED INCOME

Developed Market Sovereign Debt: We move to an overweight allocation to developed market sovereign fixed income, up from neutral. Three months ago, we remained cautious as we saw a meaningful near-term risk of both an increases in market rates above what was priced in and rate cuts (broadly expected to start by mid-2023) being pushed out into the future by hawkish central bank communication and resilient economic activity. This is exactly what we saw until the recent sharp reversal lower in rates. Admittedly, short rates may rise again from here in the near term, if financial tail risks do not come to the fore and it becomes clear that the market has gone too far in pricing out some interest rate rises and pricing in cuts. But in our view the risk of a global recession has risen further, and the sudden flare-up of US and European financial stability risks shows how quickly things could turn for the worse. The price return component in this asset class are likely to remain volatile, but our expectation is that they will make a positive contribution to total returns over the next 12 months, and relatively attractive levels of nominal yields provide a welcomed source of income returns. US sovereign bonds remain more attractive than bonds in other regions. In Europe, sequential (i.e., annualised m/m and q/q) core inflation and wages have not yet taken a turn lower, creating greater risks of a resumption in ECB hawkishness and a further move up in euro area yields if the economy proves more resilient than we expect. Japanese sovereign bonds are also unattractive, with no income returns to benefit from and likely negative price returns if monetary policy is normalised as we expect.

Emerging Markets USD (EM USD): We stay neutral EM USD debt. The sector will benefit somewhat from the re-opening led growth pick-up in China and a less strong trend in the USD than in 2022. However, weakening US and European demand and pockets of USD strength will likely weigh on relative performance - which keep us from going overweight. In contrast, we go overweight EM local currency (EM LC) debt. Many investment-grade rated EM economies have already seen inflation peak at lower levels than at most reservecurrency issuing developed-markets. Higher real rates, accompanied by well-established FX and macro flexibility, alongside a demand-pull from China, should allow EM local rates to withstand renewed macro downturn at the core of the global economy or an unexpected run-up in the value of the USD. For both EM USD debt and LC debt, elevated yields provide a healthy cushion for price return volatility, and make us relatively positive on the asset class from a total return basis.

Global Investment Grade Credit (IG): We stay neutral Investment Grade corporates with a preference for highquality, and short-to-intermediate duration, credit. The shift higher in the absolute levels of yields provides an income buffer but not total protection against a sell-off in spread duration in the event of a recession. Ongoing tightening of policy and financial conditions, especially in the aftermath of the credit crunch at regional banks, is likely to weigh on corporate profit margins and cashflows. Our fan charts anticipate that, in a hard landing scenario, deteriorating credit conditions will widen IG spreads to around 250 bps from current levels of around 120 bps. Corporate yields at around 5.5% provide a partial offset against spread widening. We prefer exposure to IG corporates over HY or EM (USD) as historical returns have also been steadier through recessions.

Global High Yield Credit (HY): We stay underweight High Yield on recession and liquidity risks in the months ahead. Higher absolute level of yields provides less comfort, on a riskadjusted basis, in comparison with IG issuers. Speculative grade credits comprise firms with relatively greater leverage that lack pricing power, run on thinner margins and cash buffers and face a higher wall of maturities – all of which could be problematic amid a downturn in sentiment and poor market liquidity. A prolonged period of higher yields and spreads will impede market access on favourable terms and push up delinquency rates much more than in the IG or even EM USD credit sectors. These risks keep us on the side lines and underweight on both US and European HY bonds.

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.

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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.

BNY Mellon Global Economics and Investment Analysis team



Shamik Dhar Chief Economist



Zoë Mader Lead Analyst, Emerging Leaders Program



Jake Jolly, CFA Head of Investment Analysis



Sebastian Vismara Senior Financial Economist



Aninda Mitra Head of Asia Macro & Investment Strategy



Sonia Meskin Head of U.S. Macro

The BNY Mellon Global Economics and Investment Analysis Team, headed by the Chief Economist, with several senior investment strategists, provides research on global economic trends and views on investment strategy to external clients and audiences across The Bank of New York Mellon Corporation.

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